



Collin County Purchasing

2022-198

Construction, Exterior Repairs to Second Floor Walkway & First Floor Soffit, 900E. Park Blvd., Plano

Issue Date: 4/26/2022

Questions Deadline: 5/12/2022 05:00 PM (CT)

Response Deadline: 5/19/2022 02:00 PM (CT)

Collin County Purchasing

Contact Information

Contact: JD Griffin, CPPB Senior Buyer

Address: Purchasing
Admin. Building
Ste. 3160
2300 Bloomdale Rd.
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Construction, Exterior Repairs to Second Floor Walkway and First Floor Soffit, 900 E. Park Blvd., Plano

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Structural & Waterproofing Repairs to Exterior Walkway Project Manual.....97 Pages

Engineer: Wiss, Janney, Elstner Associates Inc.

First Floor Soffit Repairs Project Manual.....88 Pages

Architect: Spurgin & Associates Architects

SECTION 001116 - ADVERTISEMENT FOR BIDS

BY ORDER OF the Collin County Commissioners Court, Collin County, Texas, bids will be received electronically through Collin County eBid located at <https://collincountytx.ionwave.net>. Bidders are encouraged to submit bids electronically by utilizing Collin County eBid. However, you may submit a sealed hard copy paper bid to the Office of the Collin County Purchasing Agent. All bids, both electronic or hard copy paper form must be submitted as stated below:

**SUBMIT BIDS HARD COPY PAPER
BIDS TO:**

**Office of the Purchasing Agent
Collin County Administration Building
2300 Bloomdale Road, Suite 3160
McKinney, Texas 75071**

****NOTE:**

**All Correspondence must include suite
number to assist in proper delivery.****

SUBMIT NO LATER THAN:

2:00 P.M., Thursday, May 19, 2022

MARK ENVELOPE:

IFB 2022-198

**Project: Construction, Exterior Repairs to
Second Floor Walkway and First Floor Soffit,
900 E. Park Blvd., Plano**

*ALL BIDS MUST BE RECEIVED IN THE OFFICE OF THE PURCHASING AGENT
BEFORE OPENING DATE AND TIME*

SCOPE OF WORK INCLUDES all materials, labor, equipment and services to produce or be incorporated in such construction. Contract will be a general contract for (1) structural and waterproofing repairs to the exterior second floor walkway and (2) installation of new flush metal soffit panels of the first floor soffit, installation of galvanized metal framing for soffit panel support, replacing select floor drains and piping in the second floor balcony structure, and installing new recessed LED soffit lighting in the new soffit panels and connecting new lights to existing lighting circuits of the metal soffit panels on the lower level soffits at the 900 Building at 900 E. Park Boulevard, Plano, Texas. The awarded Contractor shall complete all work associated with structural and waterproofing repairs to the exterior second floor walkway prior to beginning work on the replacement of the first floor soffit. Payment for the contract work shall be made pursuant to the terms of the Contract Documents.

The opinion of probable construction cost for this contract is \$511,000.

Collin County uses Collin County eBid for the notification and dissemination of all solicitations for commodities and services. The receipt of solicitations through any other company may result in your receipt of incomplete specifications and/or addenda which could ultimately render your bid non-compliant. Collin County accepts no responsibility for the receipt and/or notification of solicitations through any other company.

COLLIN COUNTY APPRECIATES your time and effort in preparing a bid. Hard copy paper bid must be in a separate sealed envelope, manually signed in ink by a person

having the authority to bind the firm in a contract and marked clearly on the outside as outlined above. Please note that all bids must be received at the designated location by the deadline shown. Bids received after deadline shall be considered void and unacceptable. Collin County is not responsible for lateness of mail, carrier, etc. and time/date stamp clock in the Collin County Purchasing Department shall be the official time of receipt. All bid forms provided in this Invitation for Bid must be completed prior to submission. Failure to complete the forms shall render your bid null and void. We would appreciate you indicating on your "NO BID" response any requirements of this bid request which may have influenced your decision to "NO BID".

BIDS WILL BE publicly opened in the Office of the Purchasing Agent, 2300 Bloomdale Rd, Suite 3160, McKinney, TX 75071, at the date and time indicated above.

No oral, telegraphic, telephonic or facsimile bids will be considered. IFB's, RFP's, RFQ's and RFI's may be submitted in electronic format via Collin County eBid at <https://collincountytx.ionwave.net>

A PRE-BID CONFERENCE will be held by Collin County at **920 Building, 920 E. Park Blvd., Plano, TX 75074** (meet in lobby) on **Tuesday, May 10, 2022 at 2:00 PM** in order for bidders to ask questions regarding the proposed work. It is the bidder's responsibility to review the site and documents to gain a full understanding of the requirements of the bid.

BID SECURITY: All Bidders must submit, prior to the bid opening time, a Certified Check, Cashier's Check or acceptable Bid Bond payable without recourse to Collin County in the amount of not less than five percent (5%) of the total bid plus alternates as submitted.

1. Bid Bond, certified check or Cashier's Check may be mailed or hand delivered to the Office of the Collin County Purchasing Agent, Collin County Administration Building, 2300 Bloomdale Road, Ste 3160, McKinney, TX 75071 and shall be delivered in an envelope, marked plainly on the outside with the Bid Name and Number.
2. Bidders submitting a bid via Collin County eBid shall upload a Bid Bond at <https://collincountytx.ionwave.net>

Regardless of delivery method, all Bid Bonds shall be received prior to the bid opening time to be considered. **Failure to submit a copy of bid security prior to bid opening shall be cause for rejection of bid.**

The original Bid Bond shall be received in the Collin County Purchasing Department **no later than** close of business on the third working day after the bid opening. **Late receipt of or failure to submit original Bid Bond shall be cause for rejection of bid.**

BONDS: Contractor must furnish a performance bond and payment bond within ten (10) consecutive calendar days following award of contract. The bonds shall be issued by a corporate surety in accordance with all Texas Law, including but not limited to, Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code, for public works projects.

SECTION 002113 - INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL REQUIREMENTS

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. All definitions set forth in the General Conditions of the Contract for Construction or in other Contract Documents are applicable to these Bidding Documents.
- B. Bidding Documents include the Advertisement or Invitation for Bids, Instructions to Bidders, the bid form, other sample bidding and contract forms and the proposed Contract Documents including any Addenda issued prior to receipt of bids.
- C. Addenda are written or graphic instruments issued prior to the opening of the Bidding Documents, which modify or interpret the Bidding Documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.
- D. Wiss, Janney, Elstner Associates, Inc. shall be hereafter referred to in the Project Manual as “Engineer” for structural and waterproofing repairs to the second floor exterior walkway and all correspondence shall be addressed to: Steven Grelle, Wiss, Janney, Elstner Associates, Inc., 6363 N. Highway 161, Suite 550, Irving, TX, 75038.

Spurgin & Associates Architects will be hereafter referred to in the Project Manual as “Architect” for installation of new flush metal soffit panels of the first floor soffit and all correspondence shall be addressed to: Kent Spurgin, Spurgin & Associates Architects, 103 W. Louisiana St., McKinney, TX 75069.

- E. “Bill Burke” will be hereinafter referred to in this Project Manual as “Project Manager”.
- F. “Collin County” will be hereafter referred to in this Project Manual as “Owner”.
- G. A Bid is a complete and properly signed submittal to do the Work for designated portion thereof for the sums stipulated therein, submitted in accordance with the Bidding Documents.
- H. The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which work may be added or from which work may be deleted for sums stated in Alternate Bids.
- I. An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid in the corresponding change in the Work, as described in the Bidding Documents or in the proposed Contract Documents.
- J. A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials or service as described in the Bidding Documents or in the proposed Contract Documents.
- K. A Bidder is a person or entity who submits a Bid.
- L. A Sub-Bidder is a person or entity who submits a bid to a Bidder for materials or labor for a portion of the work.

- M. A Contractor is a person or entity who is determined to be the lowest responsible and responsive bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award.
- N. The Bid Requirements and Other General Conditions, as provided under the Division of the North Central Texas Council of Governments Standard Specifications for Public Works Construction will be applicable to this project, unless noted otherwise in the Contract Documents

1.3 EXAMINATION OF DOCUMENTS AND SITE

- A. Each bidder, by making his/her Bid, represents that he/she has read and understands the Bidding Documents.
- B. Each Bidder, by making his/her Bid, represents that he/she has visited the site, performed investigations and verifications as he/she deems necessary, and familiarized himself/herself with the local conditions under which the Work is to be performed and will be responsible for any and all errors in his/her bid resulting from his/her failure to do so.
- C. The location and elevations of the various utilities and pipe work included within the scope of the work are offered as a general guide only, without guarantee as to accuracy. The Contractor shall verify and investigate to his/her own satisfaction the location and elevation of all utilities, pipe work, and the like and shall adequately inform himself/herself of their relation to the work before submitting a bid.
- D. Before submitting a bid each bidder will, at bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information (surface, subsurface, and underground facilities) at or contiguous to the site, or otherwise which may affect cost, progress, performance or furnishing of the work and which bidder deems necessary to determine its bid for performing and furnishing the work in accordance with the time, price and other terms and conditions of the Contract Documents. Bidder will rely solely on its own site investigation and assumes the risk of any site conditions not discovered that may result in additional costs and all errors in the bid.
- E. On request in advance, Owner will provide each bidder access to the site to conduct explorations and tests as each bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
- F. The lands upon which the work is to be performed, right-of way and easement for access thereto and other lands designated for use by Contractor in performing the work are identified in the Contract Documents.
- G. Each bidder by making his/her bid represents that his/her bid is based upon the materials, systems, and equipment required by the Bidding Documents without exception.

1.4 BIDDING DOCUMENTS

- A. Complete sets of Bidding Documents shall be used in preparing bids; neither County, nor Architect/Engineer assume any responsibility for errors or misinterpretations resulting from use of incomplete sets of Bidding Documents.
- B. County or the Architect/Engineer, in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

1.5 BIDDING PROCEDURES

- A. All bids shall be prepared on the forms provided by the Architect/Engineer and submitted in accordance with the Instruction to Bidders. The Architect/Engineer or owner will furnish bidders with bid forms which will provide for the following bid items. Bidders shall provide all requested information. Prices bid/proposed shall *only* be considered if they are provided in the appropriate space(s) on the Collin County bid form(s). For consideration, any additions or deductions to the bid/proposal prices offered must be shown under the exceptions section of the bid/proposal in the case of electronic submittal, ONLY in the case of a hard copy submittal will an additional attachment be allowed. Extraneous numbers, prices, comments, etc. or bidder/offeror generated documents appearing elsewhere on the bid or as an additional attachment shall be deemed to have no effect on the prices offered in the designated locations.
1. A single contract price for each bid item as detailed and described in these specifications.
 2. Acknowledgment of Addenda.
 3. Number of consecutive calendar days to complete project.
 4. Alternate bids.
 5. Unit prices.
- B. A bid (electronic or hard copy) is invalid if it has not been deposited at the designed location prior to the time and date for receipt of bids indicated in the Advertisement or Invitation For Bid, or prior to any extension thereof issued to the bidders. Bids received in County Purchasing Department after submission deadline shall be returned unopened and will be considered void and unacceptable. Owner is not responsible for lateness of mail, carrier, etc. and time/date stamp clock in County Purchasing Department shall be the official time of receipt.
- C. Unless otherwise provided in any supplement to these Instructions to Bidders, no bidder shall modify, withdraw or cancel his/her bid or any part thereof for ninety (90) consecutive calendar days after the time designated for the receipt of bids in the Advertisement or Invitation For Bid.
- D. Bids shall not contain any recapitulation of the Work to be done.
- E. The Bidder shall make no additional stipulations on the Bid Form nor limit or qualify his/her bid in any other manner. Bids so qualified will be subject to disqualification.
- F. Collin County is by statute exempt from the State Sales Tax and Federal Excise Tax; therefore, the prices submitted shall not include taxes.

1.6 DISCREPANCIES AND AMBIGUITIES

Any interpretations, corrections and/or changes to an Invitation For Bid and related Specifications or extensions to the opening/receipt date will be made by addenda to the respective document by the Collin County Purchasing Department. Questions and/or clarification requests must be submitted no later than seven (7) days prior to the opening/receipt date. Those received at a later date may not be addressed prior to the public opening. Sole authority to authorize addenda shall be vested in Collin County Purchasing Agent as entrusted by the Collin County Commissioners Court. Addenda may be transmitted electronically via Collin County eBid, by facsimile, E-mail transmission or mailed via the US Postal Service.

- 1.6.1 Addenda will be transmitted to all that are known to have received a copy of the IFB and related Specifications. However, it shall be the sole responsibility of the Bidder to verify issuance/non-issuance of addenda and to check all avenues of document availability (i.e. Collin County eBid at <https://collincountytx.ionwave.net>; telephoning Purchasing Department directly, etc.) prior to opening/receipt date and time to insure Bidder's receipt of any addenda issued. Bidder shall acknowledge receipt of all addenda.

1.7 SUBSTITUTIONS

- A. Each bidder represents that his/her bid is based upon the materials and equipment described in the Bidding Documents.
- B. No substitution will be considered unless written request has been submitted to the Architect/Engineer for approval at least seven (7) consecutive calendar days prior to the date for receipt of bids. Submit substitution request forms to jgriffin@co.collin.tx.us.
- C. If the Architect/Engineer and Owner approves a proposed substitution, such approval will be set forth in an Addendum.

1.8 QUALIFICATION OF BIDDERS

- A. Within seven (7) consecutive calendar days following bid opening, the apparent low bidder shall submit with a properly executed Contractor's Qualification Statement as evidence to establish bidder's financial responsibility, experience and possession of such equipment as may be needed to prosecute the work in an expeditious, safe and satisfactory manner. This Statement shall include:
1. List of current projects.
 2. List of projects completed within the past five years.
 3. Experience of key individuals of the organization.
 4. Trade and Bank references.
 5. A recent financial statement to confirm that the bidder has suitable financial status to meet obligations incidental to performing the work. Audited financial statements are not mandatory. Unaudited financial statements will be accepted. If bidder's firm does, however, have audited statements, please include a copy with your bid.
 6. A letter of guarantee from surety for the value of the contract.
 7. A statement of cost for each major item of Work included in the Bid.
 8. A designation of the Work to be performed by the Bidder with his/her own forces.
 9. A list of names of the Subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for each portion of the Work. The Bidder will be required to establish to the satisfaction of the Architect/Engineer and Owner the reliability and responsibility of the proposed Subcontractors. Prior to the award of the Contract, the Architect/Engineer will notify the Bidder in writing if either the County or the Architect/Engineer, after due investigation, has reasonable and substantial objection to any person or organization on such lists. If Owner or Architect/Engineer has a reasonable and substantial objection to any person or organization on such list, and refuses in writing to accept such person or organization, the Bidder may, at his/her option, withdraw his/her Bid without forfeiture of Bid Security or provide an acceptable substitute. Subcontractors and other persons and organizations proposed by the Bidder and accepted by Owner and Architect/Engineer must be used on the Work for which they were proposed and accepted, and shall not be changed except with the written approval of Owner and the Architect/Engineer.
- B. Bidders may be disqualified and their bids not considered for any of the following specific reasons:

1. Reason for believing collusion exists among bidders.
 2. The bidder being interested in any litigation against Owner.
 3. The bidder being in arrears on any existing contract or having defaulted on a previous contract.
 4. Lack of competency as revealed by the financial statement, experience and equipment, questionnaires, or qualification statement.
 5. Uncompleted work which in the judgment of Owner will prevent or hinder the prompt completion of additional work if awarded.
- C. Minimum Standards For Responsible Prospective Bidders: A prospective Bidder must meet the following minimum requirements:

1. have adequate financial resources, or the ability to obtain such resources as required;
2. be able to comply with the required or proposed delivery/ completion schedule;
3. have a satisfactory record of performance;
4. have a satisfactory record of integrity and ethics; and
5. be otherwise qualified and eligible to receive an award.

Collin County may request representation and other information sufficient to determine Bidder's ability to meet these minimum standards listed above.

- D. In determining to whom to award the contract, the Owner may consider;
1. the purchase price;
 2. the reputation of the bidder/contractor/vendor and of the bidder/contractor/vendor's goods or services;
 3. the quality of the bidder/contractor/vendor's goods or services;
 4. the extent to which the goods or services meet the Owner's needs;
 5. the bidder/contractor/vendor's past relationship with the Owner;
 6. the total long-term cost to the Owner to acquire the bidder/contractor/vendor's goods or services; and
 7. any other relevant factors specifically listed in the Instruction to Bidders..

1.9 PREPARATION OF BID

- A. Bidder shall submit his/her bid on the forms furnished by the Architect/Engineer. All blank spaces in forms shall be correctly filled in and the bidder shall state the prices, written in words and in figures. Where there is discrepancy between the price written in words and the price written in figures, the price written in words shall govern. If bid is submitted by an individual, his/her name must be signed by him/her or his/her duly authorized agency. If the bid is submitted by a firm, association or partnership, the name and address of each member must be given, and the bid must be signed by an official or duly authorized agent. Powers of attorney authorizing agents or others to sign bids must be properly certified and must be in writing and submitted with the bid.

- B. Bidder shall bear any/all costs associated with it's preparation of any bid, proposal or submittal.
- C. Public Information Act: Collin County is governed by the Texas Public Information Act, Chapter 552 of the Texas Government Code. All information submitted by prospective bidders during the bidding process is subject to release under the Act.
- D. The Bidder shall comply with Commissioners Court Order No. 2004-167-03-11, County Logo Policy.

1.10 BID SECURITY

- A. Each bid must be accompanied by Bid Security (in accordance with instructions set forth in section 001116-Advertisement For Bids) made payable to Owner in an amount of five percent (5%) of the bidder's maximum bid price and in the form of a Cashier's Check or a Bid Bond, duly executed by bidder as principal and having as surety thereon, a corporate surety authorized and admitted to do business in the State of Texas and licensed to issue such bond, as a guarantee that the bidder will enter into a Contract and execute required Performance, Payment, and two (2) year Maintenance Bonds within ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract.
- B. The Bid Security of the contractor will be retained until such bidder has executed the Contract Agreement and furnished the required Contract Security, whereupon, the Bid Security will be returned. If the contractor fails to execute and deliver the Agreement and furnish the required Contract Security within ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, Owner may annul the award of contract and the Bid Security of that bidder will be forfeited. The Bid Security of the other bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh (7th) consecutive calendar day after the effective date of the Agreement or the ninety-fifth (95th) consecutive calendar day after the bid opening, whereupon, the Bid Security furnished by such bidders will be returned. Bid Security with bids which are not competitive will be returned within seven (7) consecutive calendar days after the contract award.
- C. Should the bidder to whom the Contract is awarded refuse or neglect to execute and file the contract and bonds within ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, Owner may annul award of Contract and the Bid Security filed with the bid shall become the property of Owner, not as a penalty, but as liquidated damages. Owner reserves the right to award canceled Contract to next responsible, lowest and best bidder as it deems to be in the best interest of the County.
- D. Owner will have the right to retain the bid security of all bidders until either:
 - 1. the Contract has been executed and the bonds have been furnished, or
 - 2. the specified time has elapsed so that bids may be withdrawn, or
 - 3. all bids have been rejected.

1.11 PERFORMANCE BOND, LABOR & MATERIAL PAYMENT BOND

- A. The Contractor shall post with Owner, not later than ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, a Performance Bond in the amount of one hundred percent (100%) of the total contract price in such form as is satisfactory to Owner, in compliance with Chapter 2253 of the Texas Government Code and all other applicable Texas Law, and on the form specified in the Contract Documents. This bond shall be executed by a corporate surety company duly authorized and admitted to do business

in the State of Texas and licensed to issue such a bond in the State of Texas. The Contractor shall notify its corporate surety of any Contract changes.

- B. The Contractor shall post with Owner, not later than ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, a Payment Bond in the amount of one hundred percent (100%) of the total contract price in such form as is satisfactory to Owner, in compliance with Chapter 2253 of the Texas Government Code and all other applicable Texas Law, and on the form specified in the Contract Documents. This bond shall be executed by a corporate surety company duly authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas. The Contractor shall notify its corporate surety of any Contract changes.
- C. The Contractor must demonstrate to Owner that it can secure the required performance and payment bonds, issued by a corporate surety company authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas. Contractor must also demonstrate that the bond is not in excess of ten percent (10%) of the corporate surety company's capital and surplus. To the extent the amount of the bond exceeds ten percent (10%) of the corporate surety company's capital and surplus, such bond will not be accepted unless bidder provides written certification that the corporate surety company has reinsured the portion of the risk that exceeds ten percent (10%) of the corporate surety company's capital and surplus with one or more insurers who are duly authorized, accredited or trusted to do business in the State of Texas. The amount reinsured by any reinsurer must not exceed ten percent (10%) of the reinsurer's capital and surplus.
- D. The Contractor must file with the performance bond and payment bond, all documents and information necessary to establish that the agent signing the bond is authorized to write the bond in the amount requested, and if applicable, that reinsurance requirements, have been met, including limits and ratings or other evidence of company solvency.
- E. If the corporate surety company on any bond furnished by Contractor to Owner is declared bankrupt or becomes insolvent or such corporate surety company's right to do business in the State of Texas is revoked, the Contractor shall within five (5) consecutive calendar days thereafter substitute another bond and corporate surety company, both of which shall be acceptable to Owner.

1.12 FILING BID

- A. All Bids, proposals, or submittals submitted in hard copy paper form shall be submitted in a sealed envelope, plainly marked on the outside with the Invitation for Bid (IFB) number and name. A hard copy paper form bid, proposal, or submittal shall be manually signed in ink by a person having the authority to bind the firm in a contract. Submittals, bids or proposals shall be mailed or hand delivered to the Collin County Purchasing Department.
- B. No oral, telegraphic or telephonic submittals will be accepted. Bids, proposals, or submittals may be submitted in electronic format via Collin County eBid at <https://collincountytexas.ionwave.net>.
- C. All Bids, submittals or proposals submitted electronically via Collin County eBid at <https://collincountytexas.ionwave.net> shall remain locked until official date and time of opening as stated in the Special Terms and Conditions of the IFB.
- D. For hard copy paper form bids, proposals, or submittals, any alterations made prior to opening date and time must be initialed by the signer of the bid, proposal, or submittal, guaranteeing authenticity. Bids, proposals, or submittals cannot be altered or amended after submission deadline.

- E. No bid, proposal, or submittal will be considered unless it is filed with the Owner Purchasing Department within the time limit for receiving bids as stated in the Advertisement for Bids or IFB. Each hard copy paper bid shall be in a sealed envelope plainly marked with the word "BID", and the name and bid number of the project as designated in the Advertisement for Bids or IFB.

1.13 MODIFICATION AND WITHDRAWAL OF BID

- A. No bid, proposal, or submittal may be withdrawn or modified after the bid opening except where the award of the contract has been delayed beyond ninety (90) consecutive calendar days after date of bid opening or as per Texas Local Government Code, Title 8, Chapter 262, Subchapter C., Section 262.0305. Modifications after Award.

1.14 IRREGULAR BID

- A. It is understood that Collin County, Texas reserves the right to accept or reject any and/or all Bids, proposals, or submittals for any or all products and/or services covered in an Invitation For Bid (IFB) and to waive informalities or defects in submittals or to accept such submittals as it shall deem to be in the best interest of Collin County.

1.15 REJECTION OF BID

- A. The bidder acknowledges the right of Owner to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of Owner to reject a bid if the bidder failed to furnish any required Bid Security, or to submit the data required by the Bidding Documents, or if the bid is in any way incomplete or irregular.

1.16 METHOD OF AWARD

- A. In evaluating bids, Owner will consider whether or not the bids comply with the prescribed requirements, base prices, any alternates, unit pricing, completion time, bidder's qualifications, bidder's proposed subcontractors, suppliers, etc., and other data as may be requested in the Bid Documents.
- B. Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications and financial ability of bidder, proposed subcontractors, suppliers and other persons and organizations to perform and furnish the Work in accordance with the Bidding Documents to Owner's satisfaction within the prescribed time.
- C. If the contract is to be awarded, it will be awarded to the lowest and best responsible bidder whose evaluation, by Owner, indicates to be in the best interests of the project. If no alternates are selected by Owner, the Owner may award the contract to a responsible bidder who submits the lowest and best bid.
- D. Evaluation of Alternates - Any and/or all or none of the alternates may be considered in evaluation. Owner may award Contract on base bid plus any and/or all or none of the alternates.
- E. Owner anticipates award within ninety (90) consecutive calendar days after bid opening.
- F. The bid, when properly accepted by the County, shall constitute a Contract equally binding between the contractor and Owner. No different or additional terms will become part of this Contract with the exception of a written Change Order, signed by both parties.

- G. No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing by Collin County Purchasing Agent.

1.17 EXECUTION OF CONTRACT

- A. The person or persons, partnership, company, firm, association or corporation to whom a contract is awarded shall within ten (10) consecutive calendar days after such award, sign the necessary contract agreements and submit the required bonds entering into the required Contract with Owner. No contract shall be binding on Owner until it has been executed by Owner or his/her duly authorized representative, and delivered to the Contractor.

1.18 FAILURE TO EXECUTE CONTRACT

- A. The failure of the Bidder to execute the required bonds or to sign the required Contract within ten (10) consecutive calendar days after the Contract is awarded, shall be considered by Owner as abandonment of his/her Bid, and Owner may annul the award, at the Owner's sole discretion.

1.19 PURCHASE ORDER

- A. A purchase order(s) shall be generated by Owner to the contractor. The purchase order number **must** appear on all itemized invoices. Collin County will not be responsible for any orders placed or delivered without a valid purchase order number.

1.20 NOTICE TO PROCEED

- A. Upon the execution and delivery of Bonds, Executed Contract by Contractor, progress schedule, proof of insurance, and all other documents required prior to commencing work herein, Owner will issue a written Notice to Proceed to the Contractor requesting that he/she proceed with construction, and the Contractor shall commence work within ten (10) consecutive calendar days after the date of Notice to Proceed.

1.21 PAYMENT PROCEDURES

- A. Contractor shall submit Applications for Payment in accordance with the Contract, and payments shall be made in accordance with the Contract Documents.
- C. Final Payment: Upon final completion and acceptance of the work, Owner shall pay the remainder of the contract price as recommended by Architect/Engineer, in accordance with Texas Government Code, Title 10, Subtitle F., Chapter 2251. Contractor(s) is required to pay subcontractors within ten (10) days after the contractor has received payment from the County.
- D. The Contractor understands, acknowledges and agrees that if the Contractor subcontracts with a third party for services and/or material, the primary Contractor (awardee) accepts responsibility for full and prompt payment to the third party. Any dispute between the primary Contractor and the third party, including any payment dispute, will be promptly remedied by the Contractor. Failure to promptly render a remedy or to make prompt payment to the third party (subcontractor) may result in the withholding of funds from the primary Contractor by Collin County for any payments owed to the third party.

1.22 AFFIDAVIT OF BILLS PAID

- A. Prior to final acceptance of this project by Owner, the Contractor shall execute an affidavit that all bills for labor, materials, and incidentals incurred in the project construction have been paid in full, and that there are no claims pending.

1.23 EXEMPTION FROM STATE OF TEXAS AND LOCAL SALES TAX ON MATERIALS

- A. Owner qualifies for exemption from State and Local Sales Tax pursuant to the provisions of Chapter 151, Section 151.309 of the Texas Limited Sales, Excise and Use Tax Act. The Contractor performing this Contract may purchase all materials, supplies, equipment consumed in the performance of this Contract by issuing to his/her suppliers an exemption certificate in lieu of the tax. .

1.24 CONFLICT OF INTEREST

- A. No public official shall have interest, direct or indirect, in this contract, in accordance with Texas Local Government Code Title 5, Subtitle C, Chapter 171.

1.25 ETHICS

- A. The bidder/contractor shall comply with Commissioners Court Order No. 96-680-10-28, Establishment of Guidelines & Restrictions Regarding The Acceptance of Gifts by County Officials & County employees.

1.26 BID COMPLIANCE

- A. Bid must comply with all federal, state, county and local laws concerning this type of project and the fulfillment of all ADA (Americans With Disabilities Act) requirements.
- B. Design, strength, quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practice.
- C. All products must be new and unused, unless otherwise specified, in first-class condition and of current manufacture.

1.27 DRUG FREE

- A. All bidders shall provide any and all notices as may be required under the Drug-Free Work Place Act of 1988, 41 U.S.C. 701, and Collin County Commissioners Court Order No. 90-455-06-11, to its employees and all sub-contractors to insure that Owner maintains a drug-free work place. The use, possession or being under the influence of drugs and/or alcohol while working on this bid project or while on County property is prohibited and may result in removal of an individual from the project and/or immediate termination of contract. The County reserves the right to review drug testing records of any personnel involved in this bid project. The County may require, at contractor's expense, drug testing of contractor's personnel if no drug testing records exists or if such test results are older than six (6) months.
- B. Substances and cut-off levels are as follows:

<u>SUBSTANCE</u>	<u>MAXIMUM LEVEL</u>
Amphetamines	1000 NG/ML
Barbiturates	300 NG/ML
Benzodiazepines	300 NG/ML
Cocaine Metabolite	300 NG/ML
Opiates	300 NG/ML
Phencyclidine (PCP)	25 NG/ML

THC (Marijuana) Metabolite	100 NG/ML
Methadone, Urinary	300 NG/ML
Methaquaone, Urine	300 NG/ML
Propoxyphene	300 NG/ML

1.28 INDEMNIFICATION

- A. To the fullest extent permitted by law, the CONTRACTOR and his sureties shall indemnify, defend and hold harmless the OWNER and all of its, past, present and future, officers, agents and employees from all suits, cause of action, claims, liabilities, losses, fines, penalties, liens, demands, obligations, actions, proceedings, of any kind, character, name and description brought or arising, on account of any injuries or damages received or sustained by any person, destruction or damage to any property on account of, in whole or part, the operations of the CONTRACTOR, his agents, employees or subcontractors; or on account of any negligent act or fault of the CONTRACTOR, his agents, employees or subcontractors in the execution of said Contract; failing to comply with any law, ordinance, regulation, rule or order of any governmental or regulatory body including those dealing with health, safety, welfare or the environment; on account of the failure of the CONTRACTOR to provide the necessary barricades, warning lights or signs; and shall be required to pay any judgment, with cost, which may be obtained against the OWNER growing out of such injury or damage. In no event shall OWNER be liable to CONTRACTOR for indirect or consequential damages or loss of income or profit irrespective of the cause, fault or reason for same. CONTRACTOR'S duty to indemnify herein shall not be limited by any limitation on the type or amount of damages payable by or for CONTRACTOR or any Subcontractor under workman's compensation acts, disability benefit acts or any other employee benefit acts.

In addition, the CONTRACTOR likewise covenants and agrees to, and does hereby, indemnify and hold harmless the OWNER from and against any and all injuries, loss or damages to property of the OWNER during the performance of any of the terms and conditions of this Contract, arising out of or in connection with or resulting from, in whole or in part, any and all alleged acts or omissions of officers, agents, servants, employees, contractors, subcontractors, licenses or invitees of the CONTRACTOR.

The rights and responsibilities provided in this indemnification provision shall survive the termination or completion of this Contract.

1.29 CONSTRUCTION SCHEDULE

- A. The time for completion is set forth herein and will be included in the Contract. All work shall be completed within the consecutive calendar day count shown in the Contractor's bid. The calendar day count shall commence ten (10) consecutive calendar days after the date of the Notice to Proceed.
- B. Prior to the issuance of the Notice to Proceed by Owner, the Contractor shall submit a detailed progress and schedule chart to Owner for review. This chart will be used to assure completion of the job within the number of consecutive calendar days stated in bid documents.

1.30 DELAYS AND EXTENSIONS OF TIME

- A. If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect/Engineer, or of an employee of either, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the

Contractor's control, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Architect/Engineer determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect/Engineer may determine.

- B. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that the weather conditions had an adverse effect on the scheduled construction.
- C. Contractor's sole remedy for any delays in the project, which are not the fault of the Contractor, shall be an equitable extension of time to perform the work, required by the Contract. In no event shall the Contractor be entitled to make a claim for delay, impact or acceleration damages against the Owner.

1.31 DAMAGES

A. Should the contractor fail to complete the project within the specified completion schedule the sum of \$100.00 per calendar day will be deducted from the moneys due the contractor for the work. This sum shall not be considered as a penalty, but rather as reasonable liquidated damages, since it would be impracticable or extremely difficult to fix the actual damages. An extension of time may be allowed for delays beyond the control of the contractor at the discretion of Owner.

1.32 TERMINATION

This contract shall remain in effect until any of the following occurs:

- A. completion of project;
- B. acceptance of work ordered; or
- C. termination by either party pursuant to the terms of the Contract with a thirty (30) days written notice prior to cancellation that must state therein the reasons for such cancellation.
- D. Breach of the contract by the Contractor for failure
 1. to meet completion schedules, or
 2. otherwise perform in accordance with these specifications.

Breach of contract or default authorizes the County to purchase elsewhere and charge the full increase in cost and handling to the defaulting Contractor.

1.33 PATENTS - COPYRIGHTS

A. The contractor agrees to protect Owner from any claims involving infringements of patents and/or copyrights. In no event shall Owner be liable to a contractor for any/all suits arising on the grounds of patent(s) or copyright(s) infringement.

1.34 VENUE; GOVERNING LAW

A. This contract will be governed by the laws of the State of Texas. Should any portion of this contract be in conflict with the laws of the State of Texas, the State laws shall invalidate only that portion. The remaining portion of the contract shall remain in effect. This contract is performable in Collin County, Texas.

1.35 ASSIGNMENT

- A. The contractor shall not sell, assign, transfer or convey this contract, in whole or in part, without the prior written approval from Collin County Commissioners Court.

1.36 SILENCE OF SPECIFICATION

- A. The apparent silence of any part of the specification as to any detail or to the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of the specification shall be made on the basis of this statement.

1.37 PROVISION CONCERNING ESCALATOR CLAUSES

- A. Bid(s) containing any condition which provides for changes in the stated bid prices due to increase or decrease in the costs of materials, labor, or other items required for this project, will be rejected and returned to the bidder without being considered.

1.38 ESTIMATES OF QUANTITIES

- A. The quantities listed in the Bid Form will be considered as approximate and will be used for the comparison of bids. Payments will be made to the Contractor only for the actual quantities of work performed or materials furnished in accordance with the contract. The quantity of work to be done and the materials may be increased or decreased as provided for in the Contract Documents.

1.39 TREE PROTECTION OUTSIDE LIMITS OF WORK

- A. The Contractor will be required to obtain written authorization from Owner for the removal of any tree three inches (3") in diameter or greater for any area outside the limits of the street right-of-way or slope easement. It is the intent of Owner to preserve as much as possible the natural condition of the floodplains.

1.40 EXCAVATION/TRENCH SAFETY

A. TRENCH SAFETY

The CONTRACTOR shall be responsible for complying with state laws and federal regulations relating to trench safety, including those which may be enacted during the performance under this contract. The CONTRACTOR shall be responsible for selecting an appropriate method of providing trench safety after due consideration of the job conditions, location of utilities, pavement conditions and other relevant factors. Slope-back methods which may result in unnecessary displacement of utilities and/or destruction of pavement may not be used without permission from the OWNER. The CONTRACTOR shall be responsible for providing to the OWNER an acceptable trench safety plan signed and sealed by a Professional Architect/Engineer qualified to do such work and registered in Texas. Devices used to provide trench safety such as trench shields and shoring systems will be likewise certified by professional Engineers registered in the State of Texas or by a professional Engineer registered in the state of manufacture of the shield.

B. PAYMENT FOR TRENCH SAFETY

Payment for trench safety shall be by the lineal feet of trench exceeding a depth of five (5) ft. Excavation for slope-back methods shall be subsidiary to the trench safety pay item

including replacement and recompaction. Excess excavation for other trench safety methods is also subsidiary to the trench safety pay item. Costs relating to the preparation of the trench safety plan including geotechnical investigation, testing and report preparation fees are all subsidiary to the pay item for trench safety. Should trench safety measures be required during contract performance where no pay item has been provided, then the CONTRACTOR shall immediately notify the OWNER and, if directed to do so, provide trench safety under the provisions of the contract. Should the OWNER fail to authorize the work, then the CONTRACTOR shall proceed under the provisions of the Contract. Trench safety requirements are mandatory and may not be waived.

C. PAYMENT FOR SPECIAL SHORING

Payment for special shoring, if any, shall be based on the square feet of shoring used.

- D. The Contractor must be made aware that on construction projects in which trench excavation will exceed a depth of five feet (5'), the uniform set of general conditions must require that the bid documents and the contract include detailed plans and specifications for adequate safety systems that meet Occupational Safety and Health Administration standards that will be in effect during the period of construction of the project. The Contractor shall provide a separate pay item for trench excavation safety in accordance with the Texas Health & Safety Code Chapter 756. The Contractor shall verify that these plans and specifications include a pay item for these same trench excavation safety systems, in accordance with Texas Government Code, Title 10, Section 2166.303, Uniform Trench Safety Conditions. The contractor shall insure that drainage from adjacent properties is not blocked by his/her excavations. Measurement and payment for excavation/trench safety systems will not be made directly, but considered subsidiary to the work.
- E. The Contractor shall be responsible for obtaining and paying for all surveys and testing, including geotechnical surveys and testing, necessary to insure it can comply with all laws regarding adequate trench excavation safety.

1.41 CONSTRUCTION STAKING

- A. Architect/Engineer will provide the Contractor with primary horizontal and vertical control to consist of one construction baseline and two benchmarks.
- B. The Contractor shall take all necessary precautions to preserve any and/or all markings and staking. Payment for costs of restaking shall be the responsibility of the Contractor.

1.42 PERMITS

- A. Contractor shall be responsible for obtaining all necessary permits.

1.43 MATERIALS TESTING

- A. Owner will be responsible for all materials testing.

1.44 WAGE SCALE

- A. In accordance with Texas Government Code, Title 10, Section 2258, Prevailing Wage Rates, the general prevailing wage rate has been determined for this locality for the craft or type of workman needed to execute work of a similar character of the project listed herein. The Contractor shall pay the prevailing wage rate in this locality to all his/her employees and

subcontractors performing work on this project, and in no event shall the Contractor pay less than the rate shown in the following schedule.

"General Decision Number: TX20220239 02/25/2022

Superseded General Decision Number: TX20210239

State: Texas

Construction Type: Building

County: Collin County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658.

Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022	Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$15.00 per hour or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 29, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	01/21/2022
2	02/18/2022
3	02/25/2022

ASBE0021-011 08/01/2017

Rates Fringes

ASBESTOS WORKER/HEAT & FROST
INSULATOR (Duct, Pipe and
Mechanical System Insulation)....\$ 25.87 7.23

BOIL0074-003 01/01/2021

Rates Fringes

BOILERMAKER.....\$ 29.47 24.10

CARP1421-002 10/01/2021

Rates Fringes

MILLWRIGHT.....\$ 29.58 11.27

ELEV0021-006 01/01/2022

Rates Fringes

ELEVATOR MECHANIC.....\$ 45.54 36.885+a+b

FOOTNOTES:

A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked.

B. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

ENGI0178-005 06/01/2020

Rates Fringes

POWER EQUIPMENT OPERATOR
(1) Tower Crane.....\$ 32.85 13.10
(2) Cranes with Pile
Driving or Caisson
Attachment and Hydraulic
Crane 60 tons and above.....\$ 28.75 10.60
(3) Hydraulic cranes 59
Tons and under.....\$ 32.35 13.10

IRON0263-005 06/01/2020

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND STRUCTURAL).....	\$ 25.14	7.43

PLUM0100-005 05/01/2021

	Rates	Fringes
HVAC MECHANIC (HVAC Unit Installation Only).....	\$ 33.88	13.07
PIPEFITTER (Excludes HVAC Pipe Installation).....	\$ 33.88	13.07

* SUTX2014-015 07/21/2014

	Rates	Fringes
BRICKLAYER.....	\$ 21.06	0.00
CARPENTER, Excludes Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 15.78	0.00
CAULKER.....	\$ 15.16	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 13.04 **	0.00
DRYWALL HANGER AND METAL STUD INSTALLER.....	\$ 13.00 **	0.00
ELECTRICIAN (Alarm Installation Only).....	\$ 20.93	3.86
ELECTRICIAN (Communication Technician Only).....	\$ 15.35	1.39
ELECTRICIAN (Low Voltage Wiring Only).....	\$ 17.04	1.39
ELECTRICIAN, Excludes Low Voltage Wiring and Installation of Alarms/Sound and Communication Systems.....	\$ 20.01	2.69
FORM WORKER.....	\$ 11.89 **	0.00
GLAZIER.....	\$ 16.46	3.94

HIGHWAY/PARKING LOT STRIPING:		
Operator (Striping Machine).....	\$ 10.04 **	2.31
INSTALLER - SIDING (METAL/ALUMINUM/VINYL).....		
	\$ 14.74 **	0.00
INSTALLER - SIGN.....	\$ 15.50	0.00
INSULATOR - BATT.....	\$ 13.00 **	0.00
IRONWORKER, REINFORCING.....	\$ 12.29 **	0.00
LABORER: Common or General.....	\$ 10.52 **	0.00
LABORER: Mason Tender - Brick...	\$ 10.54 **	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 10.93 **	0.00
LABORER: Pipelayer.....	\$ 13.00 **	0.35
LABORER: Plaster Tender.....	\$ 12.22 **	0.00
LABORER: Roof Tearoff.....	\$ 11.28 **	0.00
LABORER: Landscape and Irrigation.....	\$ 10.55 **	0.00
LATHER.....	\$ 16.00	0.00
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 12.83 **	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 13.93 **	0.00
OPERATOR: Bulldozer.....	\$ 18.29	1.31
OPERATOR: Drill.....	\$ 15.69	0.50
OPERATOR: Forklift.....	\$ 13.21 **	0.81
OPERATOR: Grader/Blade.....	\$ 13.03 **	0.00
OPERATOR: Loader.....	\$ 13.46 **	0.85
OPERATOR: Mechanic.....	\$ 17.52	3.33

OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 18.44	0.00
OPERATOR: Roller.....	\$ 15.04	0.00
PAINTER (Brush, Roller and Spray), Excludes Drywall Finishing/Taping.....	\$ 13.35 **	5.10
PAINTER: Drywall Finishing/Taping Only.....	\$ 14.24 **	3.83
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 20.45	4.00
PLASTERER.....	\$ 16.58	0.00
PLUMBER, Excludes HVAC Pipe Installation.....	\$ 22.46	4.06
ROOFER.....	\$ 17.19	0.00
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 21.13	4.79
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 24.88	5.97
SPRINKLER FITTER (Fire Sprinklers).....	\$ 37.50	0.00
TILE FINISHER.....	\$ 11.22 **	0.00
TILE SETTER.....	\$ 14.25 **	0.00
TRUCK DRIVER: 1/Single Axle Truck.....	\$ 16.00	0.81
TRUCK DRIVER: Dump Truck.....	\$ 12.39 **	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	\$ 12.50 **	0.00
TRUCK DRIVER: Water Truck.....	\$ 12.00 **	4.11

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at

<https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example:

PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates

reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION"

- B. Except for work on legal holidays, the "General Prevailing Rate of Per Diem Wage" for the various crafts or type of workers or mechanics is the product of (a) the number of hours worked per day, except for overtime hours, times (b) the above respective rate per hour.
- C. For legal holidays, the "General Prevailing Rate of Per Diem Wage" for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) the number of hours worked on the legal holiday.
- D. For overtime work, the "General Prevailing Rate of Per Diem Wage" for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) the number of hours worked on overtime.
- E. Under the provisions of Texas Government Code, Title 10, Section 2258, Prevailing Wage Rates, the contractor or subcontractor of the contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded, sixty dollars (\$60.00) for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the contract.
- F. If the construction project involves the expenditure of Federal funds in excess of \$2,000, the minimum wages to be paid various classes of laborers and mechanics

will be based upon the wages that will be determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on the project of a character similar to the contract work.

- 1.45 Collin County Purchasing Department shall serve as Contract Administrator or shall supervise agents designated by Collin County.
- 1.46 All warranties shall be stated as required in the Uniform Commercial Code.
- 1.47 The Contractor and Collin County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.
- 1.48 Contractor shall not fraudulently advertise, publish or otherwise make reference to the existence of a contract between Collin County and Contractor for purposes of solicitation. As exception, Contractor may refer to Collin County as an evaluating reference for purposes of establishing a contract with other entities.
- 1.49 Contractor shall provide Collin County with diagnostic access tools at no additional cost to Collin County, for all Electrical and Mechanical systems, components, etc., procured through this contract.
- 1.50 **CRIMINAL HISTORY BACKGROUND CHECK:** If required, ALL individuals may be subject to a criminal history background check performed by Collin County prior to access being granted to Collin County facilities. Upon request, Vendor/Contractor/Provider shall provide list of individuals to the Collin County Purchasing Department within five (5) working days.
- 1.51 Vendors/Contractors/Providers must be in compliance with the Immigration and Reform Act of 1986 and all employees specific to this solicitation must be legally eligible to work in the United States of America.
- 1.52 **CERTIFICATION OF ELIGIBILITY:** This provision applies if the anticipated Contract exceeds \$100,000.00 and as it relates to the expenditure of federal grant funds. By submitting a bid or proposal in response to this solicitation, the Bidder/Quoter/Offeror certifies that at the time of submission, he/she is not on the Federal Government's list of suspended, ineligible, or debarred contractors. In the event of placement on the list between the time of bid/proposal submission and time of award, the Bidder/Quoter/Offeror will notify the Collin County Purchasing Agent. Failure to do so may result in terminating this contract for default.
- 1.53 **NOTICE TO CONTRACTORS:** The Collin County Detention Facility houses persons who have been charged with and/or convicted of serious criminal offenses. When entering the Detention Facility, you could: (1) hear obscene or graphic language; (2) view partially clothed male inmates; (3) be subjected to verbal abuse or taunting; (4) risk physical altercations or physical contact, which could be minimal or possibly serious; (5) be exposed to communicable or infectious diseases; (6) be temporarily detained or prevented from immediately leaving the Detention Facility in the case of an emergency or "lockdown; and (7) subjected to a search of your person or property. While the Collin County Sheriff's Office takes every reasonable precaution to protect the safety of visitors to the Detention Facility, because of the inherently dangerous nature of a Detention Facility and the type of the persons incarcerated therein, please be advised that the possibility of such situations exist and you should carefully consider such risks when entering the Detention Facility. By entering the Collin County Detention Facility, you acknowledge that you are aware of such potential risks and willingly and knowingly choose to enter the Collin County Detention Facility.
- 1.54 Contractors doing business with OWNER agree to comply with Federal Executive Order 13465 E-Verify. It is OWNER's intention and duty to comply and support the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verification and non-discrimination. According to the INA, contractors/employers may hire only persons who

may legally work in the United States. Subsequently, contractors and subcontractors doing business with OWNER must confirm their enrollment in the E-Verify system which verifies employment eligibility through completion and checking of I-9 forms. OWNER reserves the right to audit contractors' process to verify enrollment compliance.

1.55 INSURANCE REQUIREMENTS

A. CONTRACTOR'S INSURANCE

1. 1. Before commencing work, the CONTRACTOR shall be required, to furnish the Collin County Purchasing Agent with certified copies of all insurance certificate(s) required by Texas Law, and the coverages required herein, indicating the coverage is to remain in force throughout the term of this Contract. CONTRACTOR shall also be required to furnish the Collin County Purchasing Agent with certified copies of subcontractor's insurance certificates required by the Texas Department of Insurance, Division of Workers' Compensation, section 406.096(b), and coverages required herein in section 4.2. Without limiting any of the other obligations or liabilities of the CONTRACTOR, during the term of the Contract the CONTRACTOR and each subcontractor, at their own expense, shall purchase and maintain the herein stipulated minimum insurance with companies duly approved to do business in the State of Texas and satisfactory to the OWNER. Certificates of each policy for the CONTRACTOR and each subcontractor shall be delivered to the OWNER before any work is started, along with a written statement from the issuing company stating that said policy shall not be canceled, nonrenewed or materially changed without 30 days advance written notice being given to the OWNER.
2. In addition to any coverage required by Texas Law, the CONTRACTOR shall provide the following coverages at not less than the specified amounts:

- B. Workers Compensation insurance required by Texas Law at statutory limits, including employer's liability coverage of not less than \$1,000,000. In addition to these, the CONTRACTOR must comply with all the requirements of the Texas Department of Insurance, Division of Workers' Compensation; (Note: If you have questions concerning these requirements, you are instructed to contact the DWC.)

1. By signing this contract or providing or causing to be provided a certificate of coverage, the CONTRACTOR is representing to the OWNER that all employees of the CONTRACTOR and its subcontractors who will provide services on the Project will be covered by workers compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the CONTRACTOR to administrative penalties, criminal penalties, civil penalties, or other civil actions.

2. The CONTRACTOR'S failure to comply with any of these provisions is a breach of Contract by the Contractor which entitles the OWNER to declare the

Contract void if the CONTRACTOR does not remedy the breach within ten (10) days after receipt of notice of breach from the OWNER.

- C. Broad form commercial general liability insurance, including independent contractor's liability, completed operations and contractual liability, written on an occurrence form, covering, but not limited to, the liability assumed under the indemnification provisions of this contract, fully insuring CONTRACTOR'S and its subcontractors liability for injury to or death of OWNER'S employees and third parties, extended to include personal injury liability coverage with damage to property, with minimum limits as set forth below:

General Aggregate \$2,000,000

Products — Components/Operations Aggregate \$2,000,000

Personal and Advertising Injury \$ 1,000,000

Each Occurrence \$ 1,000,000

1. The policy shall include coverage extended to apply to completed operations, asbestos hazards (if this project involves work with asbestos) and XCU (explosion, collapse and underground) hazards. The completed operations coverage must be maintained for a minimum of one year after final completion and acceptance of the work, with evidence of same filed with OWNER.

- D. Comprehensive automobile and truck liability insurance, covering owned, hired and non-owned vehicles, with a combined bodily injury and property damage minimum limit of \$1,000,000 per occurrence; or separate limits of \$1,000,000 for bodily injury (per person), \$1,000,000 for bodily injury (per accident) and \$1,000,000 for property damage. Such insurance shall include coverage for loading and unloading hazards.

- E. OWNER'S PROTECTIVE LIABILITY INSURANCE

CONTRACTOR shall obtain, pay for and maintain at all times during the prosecution of the work under this contract an OWNER'S protective liability insurance policy naming the OWNER as insured for property damage and bodily injury, which may arise in the prosecution of the Work or CONTRACTOR'S operations under this Contract. Coverage shall be on an "occurrence" basis, and the policy shall be issued by the same insurance company that carries the CONTRACTOR'S liability insurance with a combined bodily injury and property damage minimum limit of \$1,000,000 per occurrence and \$1,000,000 aggregate.

- F. "UMBRELLA" LIABILITY INSURANCE

CONTRACTOR shall obtain, pay for and maintain umbrella liability insurance during the contract term, insuring CONTRACTOR for an amount of not less than \$1,000,000 per occurrence combined limit for bodily injury and property damage that follows from and applies in excess of the primary liability coverages required hereinabove. The policy shall provide "drop down" coverage where underlying primary insurance coverage limits are insufficient or exhausted. OWNER shall be named as an additional insured.

- G. RAILROAD PROTECTIVE INSURANCE

When required in the Special Provisions, CONTRACTOR shall obtain, maintain and present evidence of railroad protective insurance (RPI). The policy shall be in the name of the railroad company having jurisdiction over the right-of-way involved. The minimum limit of coverage shall meet the specifications provided by the railroad company. The OWNER shall specify the amount of RPI necessary.

H. POLICY ENDORSEMENTS AND SPECIAL CONDITIONS

1. Each insurance policy to be furnished by CONTRACTOR shall include the following conditions by endorsement to the policy:

- (a) each policy shall name the OWNER as an additional insured as to all applicable coverage;
- (b) each policy shall require that 30 days prior to the cancellation, nonrenewal or any material change in coverage, a notice thereof shall be given to OWNER by certified mail;
- (c) the term "OWNER" shall include all past, present or future, authorities, boards, bureaus, commissions, divisions, departments and offices of the OWNER and individual members, elected official, officers, employees and agents thereof in their official capacities and/or while acting on behalf of the OWNER;
- (d) the policy phrase "other insurance" shall not apply to the OWNER where the OWNER is an additional insured on the policy;
- (e) all provisions of the contract concerning liability, duty and standard of care together with the indemnification provision, shall be underwritten by contractual liability coverage sufficient to include such obligations within applicable policies;
- (f) each policy shall contain a waiver of subrogation in favor of OWNER, and its, past, present and future, officials, employees, and volunteers; and, (g) each certificate of insurance shall reference the Project and Contract number, contain all the endorsement required herein, and require a notice to the OWNER of cancellation.

2. Insurance furnished by the CONTRACTOR shall be in accordance with the following requirements:

- (a) any policy submitted shall not be subject to limitations, conditions or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by the CONTRACTOR. The OWNER'S decision thereon shall be final;
- (b) all policies are to be written through companies duly licensed to transact that class of insurance in the State of Texas with a financial ratings of A+ VII or better as assigned by BEST Rating Company or equivalent; and
- (c) All liability policies required herein shall be written with an "occurrence" basis coverage trigger.

3. CONTRACTOR agrees to the following:

- (a) CONTRACTOR hereby waives subrogation rights for loss or damage to the extent same are covered by insurance. Insurers shall have no right of recovery or subrogation against the OWNER, it being the intention that the

insurance policies shall protect all parties to the Contract and be primary coverage for all losses covered by the policies;

(b) Companies issuing the insurance policies and CONTRACTOR shall have no recourse against the OWNER for payment of any premiums or assessments for any deductibles, as all such premiums and deductibles are the sole responsibility and risk of the CONTRACTOR;

(c) Approval, disapproval or failure to act by the OWNER regarding any insurance supplied by the CONTRACTOR (or any subcontractors) shall not relieve the CONTRACTOR of full responsibility or liability for damages and accidents as set forth in the Contract Documents. Neither shall the bankruptcy, insolvency or denial of liability by the insurance company exonerate the CONTRACTOR from liability; and

(d) No special payments shall be made for any insurance that the CONTRACTOR and subcontractors are required to carry; all are included in the Contract Price and the Contract unit prices. Any of such insurance policies required under this section may be written in combination with any of the others, where legally permitted, but none of the specified limits may be lowered thereby.

1.56 Vendors/Contractors/Providers must be in compliance with the provisions of Section 2252.152 and Section 2252.153 of the Texas Government Code which states, in part, contracts with companies engaged in business with Iran, Sudan, or Foreign Terrorist Organizations are prohibited. A governmental entity may not enter into a contract with a company that is listed on the Comptroller of the State of Texas website identified under Section 806.051, Section 807.051 or Section 2253.253 which do business with Iran, Sudan or any Foreign Terrorist Organization. This Act is effective September 1, 2017.

1.57 Force Majeure: No party shall be liable or responsible to the other party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement, when and to the extent such failure or delay is caused by or results from acts beyond the affected party's reasonable control, including, without limitation: acts of God; flood, fire or explosion; war, invasion, riot or other civil unrest; actions, embargoes or blockades in effect on or after the date of this Agreement; or national or regional emergency (each of the foregoing, a "Force Majeure Event"). A party whose performance is affected by a Force Majeure Event shall give notice to the other party, stating the period of time the occurrence is expected to continue and shall use diligent efforts to end the failure or delay and minimize the effects of such Force Majeure Event.

Section 004100-Bid Form



Collin County Purchasing

2022-198

**Construction, Exterior Repairs to Second Floor Walkway &
First Floor Soffit, 900E. Park Blvd., Plano**

Issue Date: 4/26/2022

Questions Deadline: 5/12/2022 05:00 PM (CT)

Response Deadline: 5/19/2022 02:00 PM (CT)

Collin County Purchasing

Contact Information

Contact: JD Griffin, CPPB Senior Buyer

Address: Purchasing

Admin. Building

Ste. 3160

2300 Bloomdale Rd.

Ste. 3160

McKinney, TX 75071

Phone: (972) 548-4116

Fax: (972) 548-4694

Email: jgriffin@co.collin.tx.us

Event Information

Number: 2022-198
Title: Construction, Exterior Repairs to Second Floor Walkway & First Floor Soffit, 900E. Park Blvd., Plano
Type: Invitation for Bid - Construction
Issue Date: 4/26/2022
Question Deadline: 5/12/2022 05:00 PM (CT)
Response Deadline: 5/19/2022 02:00 PM (CT)
Notes: SCOPE OF WORK INCLUDES all materials, labor, equipment and services to produce or be incorporated in such construction. Contract will be a general contract for (1) structural and waterproofing repairs to the exterior second floor walkway and (2) installation of new flush metal soffit panels of the first floor soffit, installation of galvanized metal framing for soffit panel support, replacing select floor drains and piping in the second floor balcony structure, and installing new recessed LED soffit lighting in the new soffit panels and connecting new lights to existing lighting circuits of the metal soffit panels on the lower level soffits at the 900 Building at 900 E. Park Boulevard, Plano, Texas.

Ship To Information

Address: 900 Building
900 E. Park Blvd.
Plano, TX 75074

Billing Information

Address: Auditor
Admin. Building
Ste. 3100
2300 Bloomdale Rd.
Ste. 3100
McKinney, TX 75071

Bid Activities

Pre-Bid Conference

5/10/2022 2:00:00 PM (CT)

A PRE-BID CONFERENCE will be held by Collin County at **920 Building, 920 E. Park Blvd., Plano, TX 75074** (meet in lobby) on **Tuesday, May 10, 2022 at 2:00 PM** in order for bidders to ask questions regarding the proposed work. It is the bidder's responsibility to review the site and documents to gain a full understanding of the requirements of the bid.

Bid Attachments

LEGAL NOTICE_2022-198.doc

Legal Notice

[Download](#)

Project Manual_2022-198.pdf

Specifications

[View Online](#)

Drawings-First Floor Soffit Repairs.pdf

Drawings-First Floor Soffit Repairs

[View Online](#)

Drawings-Second Floor Exterior Walkway Repairs.pdf

Drawings-Second Floor Exterior Walkway Repairs

[View Online](#)

Requested Attachments

Bid Bond

(Attachment required)

BID SECURITY: All Bidders must submit, prior to the bid opening time, a Certified Check, Cashier's Check or acceptable Bid Bond payable without recourse to Collin County in the amount of not less than five percent (5%) of the total bid plus alternates as submitted. 1. Bid Bond, certified check or Cashier's Check may be mailed or hand delivered to the Office of the Collin County Purchasing Agent, Collin County Administration Building, 2300 Bloomdale Road, Ste 3160, McKinney, TX 75071 and shall be delivered in an envelope, marked plainly on the outside with the Bid Name and Number. 2. Bidders submitting a bid via Collin County eBid shall upload a Bid Bond at <https://collincountytx.ionwave.net> Regardless of delivery method, all Bid Bonds shall be received prior to the bid opening time to be considered. Failure to submit a copy of bid security prior to bid opening shall be cause for rejection of bid.

W-9

(Attachment required)

Conflict of Interest Questionnaire

Bid Attributes

1	eBid Notice Collin County exclusively uses IonWave Technologies, Inc. (Collin County eBid) for the notification and dissemination of all solicitations. The receipt of solicitations through any other means may result in your receipt of incomplete specifications and/or addendums which could ultimately render your bid/proposal non-compliant. Collin County accepts no responsibility for the receipt and/or notification of solicitations through any other means. Please initial. _____ _____ _____ <i>(Required: Maximum 1000 characters allowed)</i>
2	Contact Information List the contact name, email address and phone number of the main person(s) Collin County should contact in reference to this solicitation. Contact(s) shall be duly authorized by the company, corporation, firm, partnership or individual to respond to any questions, clarification, and or offers in response to this solicitation. _____ _____ _____ _____ <i>(Required: Maximum 4000 characters allowed)</i>
3	Calendar Days Bid Please state the consecutive calendar days bid from notice to proceed through completion of project. <input type="text"/> <i>(Required: Numbers only)</i>
4	Exceptions Do you take exception to the specifications? If so, by separate attachment, please state your exceptions. <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Required: Check only one)</i>

5 Insurance Acknowledgement – Construction/Public Works

I understand that the insurance requirements of this solicitation are required and are included in the submitted pricing. The Contractor shall furnish certificates of insurance for both the Contractor and any subcontractor to the Purchasing department if awarded all or a portion of the resulting contract. Please initial.

(Required: Maximum 1000 characters allowed)

6 Bonding Requirement Acknowledgement

I understand that the bonding requirements of this solicitation are required and are included in the submitted pricing. A bond certificate (payment, performance, and/or maintenance) as stated in the specification document shall be submitted to the Purchasing department if I am awarded all or a portion of the resulting contract. Please initial.

(Required: Maximum 1000 characters allowed)

7 Subcontractors

State the business name of all subcontractors and the type of work they will be performing under this contract. If you are fully qualified to self-perform the entire contract, please respond with "Not Applicable-Self Perform".

(Required: Maximum 4000 characters allowed)

8 Reference No. 1

List a company or governmental agency, other than Collin County, where these same/like products/services, as stated herein, have been provided. Texas references are preferred. Include the following: Company/Entity, Contact, Address, City/State/Zip, Phone, and E-Mail. It is the responsibility of the Bidder/Proposer to ensure submitted references will be responsive to the County's requests. The County reserves the right to contact references other than those listed, and to consider any information acquired from all references during the evaluation process.

(Required: Maximum 4000 characters allowed)

9 Reference No. 2

List a company or governmental agency, other than Collin County, where these same/like products/services, as stated herein, have been provided. Texas references are preferred. Include the following: Company/Entity, Contact, Address, City/State/Zip, Phone, and E-Mail. It is the responsibility of the Bidder/Proposer to ensure submitted references will be responsive to the County's requests. The County reserves the right to contact references other than those listed, and to consider any information acquired from all references during the evaluation process.

(Required: Maximum 4000 characters allowed)

10 Reference No. 3

List a company or governmental agency, other than Collin County, where these same/like products/services, as stated herein, have been provided. Texas references are preferred. Include the following: Company/Entity, Contact, Address, City/State/Zip, Phone, and E-Mail. It is the responsibility of the Bidder/Proposer to ensure submitted references will be responsive to the County's requests. The County reserves the right to contact references other than those listed, and to consider any information acquired from all references during the evaluation process.

(Required: Maximum 4000 characters allowed)

11 Preferential Treatment

The County of Collin, as a governmental agency of the State of Texas, may not award a contract to a nonresident bidder unless the nonresident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located (Government Code, Title 10, V.T.C.A., Chapter 2252, Subchapter A).

1. Is your principal place of business in the State of Texas?
2. If your principal place of business is not in Texas, in which State is your principal place of business?
3. If your principal place of business is not in Texas, does your state favor resident bidders (bidders in your state) by some dollar increment or percentage?
4. If your state favors resident bidders, state by what dollar amount or percentage.

(Required: Maximum 4000 characters allowed)

1
2 **Debarment Certification**

I certify that neither my company nor an owner or principal of my company has been debarred, suspended or otherwise made ineligible for participation in Federal Assistance programs under Executive Order 12549, "Debarment and Suspension," as described in the Federal Register and Rules and Regulations. Please initial.

(Required: Maximum 1000 characters allowed)

1
3 **Immigration and Reform Act**

I declare and affirm that my company is in compliance with the Immigration and Reform Act of 1986 and all employees are legally eligible to work in the United States of America. I further understand and acknowledge that any non-compliance with the Immigration and Reform Act of 1986 at any time during the term of this contract will render the contract voidable by Collin County. Please initial.

(Required: Maximum 1000 characters allowed)

1
4 **Disclosure of Certain Relationships**

Chapter 176 of the Texas Local Government Code requires that any vendor considering doing business with a local government entity disclose the vendor's affiliation or business relationship that might cause a conflict of interest with a local government entity. Subchapter 6 of the code requires a vendor to file a conflict of interest questionnaire (CIQ) if a conflict exists. By law this questionnaire must be filed with the records administrator of Collin County no later than the 7th business day after the date the vendor becomes aware of an event that requires the statement to be filed. A vendor commits an offense if the vendor knowingly violates the code. An offense under this section is a misdemeanor. By submitting a response to this request, the vendor represents that it is in compliance with the requirements of Chapter 176 of the Texas Local Government Code. Please send completed forms to the Collin County County Clerk's Office located at 2300 Bloomdale Rd., Suite 2104, McKinney, TX 75071. Please initial.

(Required: Maximum 1000 characters allowed)

1
5 **Anti-Collusion Statement**

Bidder certifies that its Bid/Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Bid/Proposal for the same materials, services, supplies, or equipment and is in all respects fair and without collusion or fraud. No premiums, rebates or gratuities permitted; either with, prior to, or after any delivery of material or provision of services. Any such violation may result in Agreement cancellation, return of materials or discontinuation of services and the possible removal from bidders list. Please initial.

(Required: Maximum 1000 characters allowed)

16 Disclosure of Interested Parties

Section 2252.908 of the Texas Government Code requires a business entity entering into certain contracts with a governmental entity to file with the governmental entity a disclosure of interested parties at the time the business entity submits the signed contract to the governmental entity. Section 2252.908 requires the disclosure form (Form 1295) to be signed by the authorized agent of the contracting business entity, acknowledging that the disclosure is made under oath and under penalty of perjury. Section 2252.908 applies only to a contract that requires an action or vote by the governing body of the governmental entity before the contract may be signed or has a value of at least \$1 million. Section 2252.908 provides definitions of certain terms occurring in the section. Section 2252.908 applies only to a contract entered into on or after January 1, 2016. Please initial.

(Required: Maximum 1000 characters allowed)

17 Critical Infrastructure Affirmation

Pursuant to section 2274.0102 of the Texas Government Code, Respondent certifies that neither it nor its parent company, nor any affiliate of Respondent or its parent company, is: (1) majority owned or controlled by citizens or governmental entities of China, Iran, North Korea, Russia, or any other country designated by the Governor under Government Code Section 2274.0103, or (2) headquartered in any of those countries. Please initial.

(Required: Maximum 1000 characters allowed)

18 Energy Company Boycotts

Pursuant to Section 2274.002 of the Texas Government Code, should the contract have a value of \$100,000 or more and the company employs 10 or more full-time employees, Respondent represents and warrants that: (1) it does not, and will not for the duration of the contract, boycott energy companies, and (2) will not boycott energy companies during the term of the contract. If circumstances relevant to this provision change during the course of the contract, Respondent shall promptly notify Agency. Please initial.

(Required: Maximum 1000 characters allowed)

19 Firearm Entities and Trade Associations Discrimination

Pursuant to section 2274.002 of the Texas Government Code, should the contract have a value of \$100,000 or more and the company employs 10 or more full-time employees, Respondent verifies that: (1) it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association. If circumstances relevant to this provision change during the course of the contract, Respondent shall promptly notify Agency. Please initial.

(Required: Maximum 1000 characters allowed)

20 Notification Survey

In order to better serve our offerors, the Collin County Purchasing Department is conducting the following survey. We appreciate your time and effort expended to submit your bid. Should you have any questions or require more information please call (972) 548-4165. How did you receive notice of this request?

- Plano Star Courier
- Plan Room
- Collin County eBid Notification
- Collin County Website
- Other

(Required: Check only one)

21 Bid Bond Acknowledgement

I understand that accompanying this bid, is a certified check, cashier's check or Bid Bond in the amount of five percent (5%) of the total amount bid. Bidders submitting a bid via Collin County eBid shall upload a Bid Bond at <https://collincountytx.ionwave.net>. Regardless of delivery method, all Bid Bonds shall be received prior to the bid opening time to be considered.

I understand that the original Bid Bond shall be received in the Collin County Purchasing Department no later than close of business on the third working day after the bid opening. **Late receipt of original Bid Bond shall be cause for rejection of bid.** Please initial.

(Required: Maximum 4000 characters allowed)

22 Construction Acknowledgement

Bidder, declares that the only person or parties interested in this bid are those principals named herein, that his/her bid is made without collusion with any other person, firm or corporation, that he/she has carefully examined the Contract Documents including the Advertisement for Bids, Instruction to Bidders, Construction Agreement, Specifications and the Drawings, therein referred to and has carefully examined the locations, conditions and classes of materials for the proposed work, and agrees that he/she will provide all the necessary labor, machinery, tools, equipment, apparatus and other items incidental to construction and will do all the work and furnish all the materials called for in the Contract Documents in the manner prescribed therein. Bidder hereby declares that he/she has visited the site of the Work and has carefully examined the Contract Documents pertaining to the Work covered by the above Bid, and he/she further agrees to commence work within ten (10) consecutive calendar days after date of written Notice to Proceed and to substantially complete the work on which he/she has bid within the number of days specified subject to such extensions of time allowed by Specifications. Bidder certifies that the bid prices contained in this bid have been carefully checked and are submitted as correct and final. The prices have been shown in words and figures for each item listed in this bid and it is understood that in the event of a discrepancy, the words shall govern. Please initial.

(Required: Maximum 1000 characters allowed)

Bid Lines

1 Package Header

Bid Grand Total

Quantity: 1 UOM: lump sum Total: \$

Item Notes: Lines 1.1, 1.2, 1.3 and 1.4 must add up to the Bid Grand Total

Supplier Notes:

- No bid
- Alternate specification

(Attach separate sheet)
 Additional notes
(Attach separate sheet)

Package Items

1.1 Total Material Cost for Repairs to Second Floor Walkway

(Response required)

Quantity: 1 UOM: lump sum Price: \$ Total: \$

Supplier Notes: _____

No bid
 Additional notes
(Attach separate sheet)

1.2 Total Labor Cost for Repairs to Second Floor Walkway

(Response required)

Quantity: 1 UOM: lump sum Price: \$ Total: \$

Supplier Notes: _____

No bid
 Additional notes
(Attach separate sheet)

1.3 Total Material Cost for Repairs to First Floor Soffit

(Response required)

Quantity: 1 UOM: lump sum Price: \$ Total: \$

Supplier Notes: _____

No bid
 Additional notes
(Attach separate sheet)

1.4 Total Labor Cost for Repairs to First Floor Soffit

(Response required)

Quantity: 1 UOM: lump sum Price: \$ Total: \$

Supplier Notes: _____

No bid
 Additional notes
(Attach separate sheet)

2 Additive Alternate No. 1: In lieu of the use of light-to-medium duty traffic coating for the second level walkway surfaces, heavy duty traffic coating to be applied.

(Response required)

Quantity: 1 UOM: lump sum Price: \$ Total: \$

Item Notes: Reference Structural & Waterproofing Repairs to Exterior Walkway,
Section 07 18 00

Supplier Notes: _____

No bid
 Alternate specification
(Attach separate sheet)
 Additional notes
(Attach separate sheet)

3

Unit Prices

(Line excluded from response total)

Supplier Notes: _____

Additional notes
(Attach separate sheet)

Item Attributes

1. State Unit Price for: Strengthen shelf angles along walkway exterior perimeter (Per linear Foot)

Note: Base Bid amount shall include 30 linear foot.

Reference Structural & Waterproofing Repairs to Exterior Walkway, Detail 1/S3.0

(Required: Numbers only)

2. State Unit Price for: Strengthen shelf angles along walkway interior perimeter (Per linear Foot)

Note: Base Bid amount shall include 70 linear foot.

Reference Structural & Waterproofing Repairs to Exterior Walkway, Detail 3/S3.0

(Required: Numbers only)

3. State Unit Price for: Strengthen perimeter walkway beams at concrete deck to be removed (Per Linear Foot)

Note: Base Bid amount shall include 75 linear foot.

Reference Structural & Waterproofing Repairs to Exterior Walkway, Detail 3/S3.1

(Required: Numbers only)

4. State Unit Price for: Strengthen perimeter walkway beams at concrete deck to remain (Per Linear Foot)

Note: Base Bid amount shall include 50 linear foot.

Reference Structural & Waterproofing Repairs to Exterior Walkway, Detail 7/S3.1

(Required: Numbers only)

5. State Unit Price for: Install bracing between walkway beams at locations shown on drawings and other locations designated by Engineer during construction (Per each)

Note: Base Bid amount shall include 13 each.

Reference Structural & Waterproofing Repairs to Exterior Walkway, Detail 6/S3.1

(Required: Numbers only)

Supplier Information

Company Name: _____

Contact Name: _____

Address: _____

Phone: _____

Fax: _____

Email: _____

Supplier Notes

The undersigned hereby certifies the foregoing bid submitted by the company listed below hereinafter called "bidder" is the duly authorized agent of said company and the person signing said bid has been duly authorized to execute same. Bidder affirms that they are duly authorized to execute this contract; this company; corporation, firm, partnership or individual has not prepared this bid in collusion with any other bidder or other person or persons engaged in the same line of business; and that the contents of this bid as to prices, terms and conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this bid.

Print Name

Signature

004313 BID BOND

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

THAT _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ of the City of _____ County of _____, and State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety", a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

SIGNED, SEALED and DATED this _____ day of _____ 202_____.

WHEREAS, the Principal is herewith submitting its proposal for IFB 2022-198, Construction, Exterior Repairs to Second Floor Walkway and First Floor Soffit, 900 E. Park Blvd., Plano.

The condition of the above obligations are such that if the aforesaid Principal shall be awarded the Contract, the said Principal will, within the time required, enter into a Contract and give Bonds, if required, for the faithful performance of the Contract and the prompt payment for labor and materials in the prosecution thereof, then this obligation shall be null and void; otherwise the Principal and Surety will pay unto the OWNER the full penal sum hereof, as liquidated damages, it being difficult and impractical to determine accurately the actual amount of damages occurring to OWNER by reason of Principal's failure to execute said Contract and Bonds.

PROVIDED FURTHER, that if any legal action be filed on this Bond, venue shall lie in _____ County, Texas.

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone Number: _____

WITNESS

PRINCIPAL

Printed/Typed Name _____
Title: _____
Company: _____

Address: _____

WITNESS

SURETY

Printed/Typed Name _____
Title: _____
Company: _____

Address: _____

NOTE: CERTIFIED COPY OF POWER-OF-ATTORNEY SHOULD BE ATTACHED HERETO.

Revised 11/2008

SECTION 00 43 25 - PRODUCT SUBSTITUTION REQUEST FORM

(Must be submitted a minimum of 7 days before the bid date)

Bidder: _____

Project No: **IFB 2022-198**

Project: **Construction, Exterior Repairs to Second Floor Walkway and First Floor Soffit, 900 E. Park Blvd., Plano**

Section: _____ Article/ Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____

Telephone: _____ Proposed Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its installation.

The undersigned warrants and represents:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by substitution.

Submitted By: _____

Signed: _____

Firm: _____

Address: _____

Phone: _____

REVIEW & ACTION (Initial)

_____ Substitution approved - Make submittals in accordance with Project Manual requirements.

_____ Substitution approved as noted - Make submittals in accordance with Project Manual requirements.

_____ Substitution rejected - Use specified materials.

_____ Substitution Request received too late - Use specified materials.

Signature: _____

Date: _____

Supporting Data Attached: ___ Drawings ___ Product Data ___ Samples ___ Tests ___ Reports ___ Other

END OF REQUEST FORM

SECTION 004547-CONFLICT OF INTEREST
INFORMATION REGARDING
CONFLICT OF INTEREST QUESTIONNAIRE

During the 79th Legislative Session, House Bill 914 was signed into law effective September 1, 2015, which added Chapter 176 to the Texas Local Government Code. Recent changes have been made to Chapter 176 pursuant to HB23, which passed the 84th Legislative Session. Chapter 176 mandates the public disclosure of certain information concerning persons doing business or seeking to do business with Collin County, including family, business, and financial relationships such persons may have with Collin County officers or employees involved in the planning, recommending, selecting and contracting of a vendor for this procurement.

For a copy of Form CIQ and CIS:

http://www.ethics.state.tx.us/filinginfo/conflict_forms.htm

The vendor acknowledges by doing business or seeking to do business with Collin County that he/she has been notified of the requirements under Chapter 176 of the Texas Local Government Code and that he/she is solely responsible for complying with the terms and conditions therein. Furthermore, any individual or business entity seeking to do business with Collin County who does not comply with this practice may risk award consideration of any County contract.

For a listing of current Collin County Officers:

<http://www.collincountytexas.gov/government/Pages/officials.aspx>

At the time of this solicitation being released, the following are known to be involved in the planning, recommending, selecting, and contracting for the attached procurement:

Department/Evaluation Team:

Bill Burke – Director of Building Projects

David Dooley – Building Projects Coordinator

Purchasing:

Michelle Charnoski, NIGP-CPP, CPPB – Purchasing Agent

Marci Chrismon – Asst. Purchasing Agent

J. D. Griffin, CPPB – Senior Buyer

Commissioners Court:

Chris Hill – County Judge

Susan Fletcher – Commissioner Precinct No. 1

Cheryl Williams – Commissioner Precinct No. 2

Darrell Hale – Commissioner Precinct No. 3

Duncan Webb – Commissioner Precinct No. 4

Advisors:

Wiss, Janney, Elstner Associates, Inc.
6363 N. Highway 161, Suite 550
Irving, TX, 75038.

Spurgin & Associates Architects
103 W. Louisiana St.
McKinney, TX 75069.

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CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

FORM CIQ

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

2 Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information is being disclosed.

Name of Officer

4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

Yes No

5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

6 Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity

Date

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed;
- or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

- (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
- (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

- (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
- (B) that the vendor has given one or more gifts described by Subsection (a); or
- (C) of a family relationship with a local government officer.

005213 CONSTRUCTION AGREEMENT

THIS CONSTRUCTION AGREEMENT is made and entered into by and between _____, a _____ corporation (hereinafter referred to as "Contractor"), and COLLIN COUNTY, TEXAS, a political subdivision of the State of Texas (hereinafter referred to as "County" or "OWNER"), to be effective from and after the date hereinafter provided.

For and in consideration of the covenants and agreements contained herein, and for the mutual benefits to be obtained hereby, the parties hereto agree as follows:

CONTRACT SUM

The County shall pay the Contractor in current funds for the performance of the work, subject to additions and deductions by Change orders as provided in the Contract Documents. The contract sum shall be the amount of _____ (\$ _____).

EFFECTIVE DATE

This Construction Agreement, having been previously approved by the Commissioners Court of Collin County, Texas, shall be effective upon the date of delivery and execution by Contractor, provided the County executes the same within five (5) consecutive calendar days after said delivery and execution by Contractor.

I. CONTRACT GENERAL PROVISIONS

1.1 DEFINITIONS

Words which have well-known technical or construction industry meanings shall have their commonly understood meanings in the Contract Documents, unless a different meaning is stated in the Contract Documents. The following words and expressions, or pronouns used in their place, shall wherever they appear in this contract be construed as follows, unless a different meaning is clear from the context:

Addendum, Bulletin or Letter of Clarification: Any additional contract provisions, or change, revisions or clarification of the Contract Documents issued in writing by the OWNER, to prospective bidders prior to the receipt of bids.

Contract or Contract Documents: The written agreement covering the performance of the work. The Contract and Contract Documents include this written Construction Agreement between OWNER and CONTRACTOR, Advertisement for Bids, Instructions to Bidders, Requests for Proposal, all Addenda, the Specifications, including the general and supplemental special and technical conditions, Drawings, provisions, plans or working drawings — and any supplemental changes or agreements pertaining to the Work or materials therefor; and bonds and any additional documents incorporated by reference in the above.

CONTRACTOR: The person, persons, partnership, firm, corporation, association or organization, or any combination thereof, entering into the contract for the execution of the work, acting directly or through a duly authorized representative.

Other CONTRACTORS: Any contractor, other than the CONTRACTOR or his subcontractors, who has a direct contact with the OWNER for work on or adjacent to the site of the work.

Contract Work or Work: Everything expressly or impliedly required to be furnished and done by the CONTRACTOR by the Contract Documents.

Engineer: The term “Engineer” means the Engineer or his duly authorized representative. The Engineer shall be understood to be the Engineer of the OWNER, and nothing contained in the Contract Documents shall create any contractual or agency relationship between the Engineer and the CONTRACTOR.

Extra Work: Work other than that which is expressly or impliedly required by the Contract Documents at the time of the execution of the contract.

Change Order: A written order to the CONTRACTOR authorizing and directing an addition, deletion or revision in the work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or the Contract time.

Contract Price: The total amount of money payable to the CONTRACTOR under the terms and conditions of the Contract Documents. When used in such context, it may also mean the unit price of an item of work under the Contract terms.

OWNER’S Representative: The Engineer or other duly authorized assistant, agent, engineer, inspector or superintendent acting within the scope of their particular duties.

Drawings or Contract Drawings: Those drawings that are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, including but not limited to, the plans, elevations, sections, details, schedules, diagrams, any bulletin, or any detailed drawing furnished by the OWNER, pertaining or supplemental thereto.

Specifications: Those portions of the Contract Documents that specify the requirements for materials, equipment, systems, standards and workmanship for performance of the Work, and related services.

Inspector: Any representative of the OWNER designated to inspect the work.

Materialman or Supplier: Any subcontractor contracting with the CONTRACTOR, or any of his subcontractors, to fabricate or deliver or who actually

fabricates or delivers materials, supplies or equipment to be consumed or incorporated into the Work.

Notice: Written notice effective the date of the postmark thereon, or if hand delivered, effective the date of hand delivery.

OWNER: COLLIN COUNTY, TEXAS, a political subdivision of the State of Texas. The term OWNER means the OWNER or its authorized representative.

Payment Bond: A bond in the amount of the Contract executed by a corporate surety in accordance with all Texas Law, including but not limited to, Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code, for public works projects as security furnished by the CONTRACTOR and his sureties solely for the protection of payment bond beneficiaries supplying labor and materials in the prosecution of the Contract Work.

Performance Bond: A bond in the amount of the Contract executed by a corporate surety in accordance with all Texas Law, including but not limited to, Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code, for public works projects as security furnished by the CONTRACTOR and his sureties solely for the protection of the Owner, conditioned on the faithful performance of the Contract Work in accordance with the plans, specification, and Contract Documents.

Maintenance Bond: A bond executed by a corporate surety for 10% of the Contract Price that complies with all Texas Laws, including but not limited to, Chapter 3503 of the Texas Insurance Code, guaranteeing the prompt, full and faithful performance of the general guaranty and warranty contained in the Contract Documents, and Texas Law.

Project: The total construction of the work described in the Contract Documents performed by the Contractor, Other Contractor or the Owner in whole or part.

Proposal: The written statement or statements duly submitted to the OWNER by the person, persons, partnership, company, firm, association or corporation proposing to do the Work contemplated, including the approved form on which the formal bids for the Work are to be proposed.

Plan, or Plans: The plans are the drawings or reproductions therefrom made by the Owner or Owner's Representative and approved by the Owner showing the dimensions, location, design and position of the various elements of the Project and Work, including plans, elevations, sections, details, schedules, diagrams, working drawings, preliminary drawings, and such supplemental drawings as the Owner may issue to clarify other drawings or for the purpose of showing changes in the Contract Work authorized by the Owner, or for showing details not shown therein.

Special Provisions or Conditions: The special clauses of the Contract, or Contract Documents, setting forth conditions or requirements peculiar to the specific Project involved, supplementing the standard or general specifications and taking precedence over any conditions or requirements of the standard or general specifications with which they are in conflict.

Specifications or Contract Specifications: All of the general, special and technical conditions or provisions, and all addendum or supplements thereto consisting of written requirements for materials, equipment, systems, standards and performance of the work.

Site: The area upon or in which the CONTRACTOR'S operations are carried on, and such other areas adjacent thereto as may be designated as such by the OWNER.

Subcontractors: Any persons, firm or corporation, other than employees of the CONTRACTOR, who or which contracts with the CONTRACTOR to furnish, or who actually furnishes, labor and/or materials and equipment at or about the site.

Sureties: The corporate bodies which are bound by such bonds as are required with and for the CONTRACTOR. The sureties engaged to be responsible for the entire and satisfactory fulfillment of the Contract and for any and all requirements as set out in the specifications, Contract or plans.

The Work: All work including the furnishing of all labor, materials, tools, equipment, required submittals and incidentals to be performed by the CONTRACTOR under the terms of the Contract.

Directed, Required, Approved and Words of Like Import: Whenever they apply to the Work or its performance, the words "directed," "required," "permitted," "ordered," "designated," "established," "prescribed" and words of like import used in the Contract, specifications or upon the drawings shall imply the direction, requirement, permission, order, designation or prescription of the OWNER; and "approved," "acceptable," "satisfactory" and words of like import shall mean approved by, acceptable to or satisfactory to the OWNER.

Equal: Materials, articles or methods which are of equal or higher quality than those specified or shown on the drawings and as further defined in the "or equal" clause. Substitution of Materials shall be determined by the Engineer at his or her discretion, and approved by the Owner.

Working Time, Completion Time or Contract Time: The time set forth in the Contract for the performance and completion of the Work contracted for. The time may be expressed as calendar days, working days or a specific date.

Calendar Day or Days: Any successive days of the week or month, no days being excepted.

Working Day: A working day is defined as a calendar day not including Saturdays, Sundays or those legal holidays as specified in the list prepared by the OWNER for contract purposes. Nothing in this definition shall be construed as prohibiting the CONTRACTOR from working on Saturdays if he so desires, however permission of the OWNER shall be necessary if the CONTRACTOR chooses to work on Saturday. Work on Sundays shall not be permitted without the written permission of the OWNER. If Saturday or Sunday work is permitted, working time shall be charged on the same basis as week days. Where the working time is expressed as calendar days or a specific date, the concept of working days shall no longer be relevant to the contract.

CONTRACT DOCUMENTS

- 1.2 The parties agree that the Contract Documents shall consist of the following documents in addition to any other documents referenced or incorporated herein:
- A. This written Construction Agreement, including any changes or modifications;
 - B. All addenda including the following listed and numbered addenda:
Addendum No. 1 dated _____ Received _____
Addendum No. 2 dated _____ Received _____
 - C. Advertisement for Bids, Instructions to Bidder, the Invitation to Bid and Bid Form;
 - D. The Special/Supplemental Conditions;
 - E. The Specifications and the Project Drawings (if any);
 - F. The Construction Details shown on plans;
 - G. The Standard Specifications and Standard Drawings from the Public Works Construction Standards-North Central Texas Council of Governments, 2004 edition and all subsequent addendums;
 - H. The Performance Bond in the sum of ONE HUNDRED PERCENT (100%) of the total Contract Price;
 - I. The Payment Bond in the sum of ONE HUNDRED PERCENT (100%) of the total Contract Price; and,

1.2.1 PRIORITY OF THE CONTRACT DOCUMENTS

These Contract Documents (A through I above) form the Construction Agreement and are a part of this Construction Agreement as if fully set forth herein. In the event of an inconsistency in any of the provisions of the Contract Documents, the inconsistency shall be resolved by giving precedence to the Contract Documents in the order in which they are listed above.

1.2.2 THE CONTRACT

The Contract Documents form the Contract. The Contract represents the entire integrated agreement between the OWNER and the

CONTRACTOR and supercedes all prior negotiations, and representations by either party.

1.3 CORRELATION AND INTENT OF DOCUMENTS

The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intent of the documents, unless otherwise specifically provided, is to produce complete and finished work, which the CONTRACTOR undertakes to do in full compliance with the Contract Documents. It is not intended to mention every item of work in the specifications which can be adequately shown on the drawings nor to show on the drawings all items of work described or required by the specifications. All materials or labor for work shown on the drawings or reasonably inferable therefrom as being necessary to produce a finished job shall be provided by the CONTRACTOR whether or not same is expressly covered in the specifications. No verbal conversation, understanding or agreement with any officer or employee or agent of the OWNER, either before or after the execution of the Contract, shall affect or modify any of the terms, conditions or obligations contained in the Contract Documents.

1.3.1 CONTRACT DRAWINGS AND SPECIFICATIONS

The OWNER shall furnish the CONTRACTOR one copy of the Contract Drawings and any supplemental drawings and specifications reasonably necessary for the proper execution of the work. At least one copy of all drawings and specifications shall be accessible at all times to the OWNER at the job site.

1.3.2 SUPPLEMENTAL DRAWINGS AND SPECIFICATIONS

In order to carry out the intent of the Contract Documents and to assist the CONTRACTOR in performing its work, the OWNER, after the execution of the Contract, may, by supplemental drawings, specifications or otherwise, furnish additional information or instructions as may be necessary for construction purposes.

All such supplemental drawings, specifications or instructions are intended to be consistent with the Contract Documents and reasonably inferable therefrom. Therefore, no extra costs shall be allowed by the OWNER on a claim that particular supplemental drawings, specifications or instructions differ from the requirements of the Contract Documents, incurring extra costs, unless the CONTRACTOR has first brought the matter, in writing, to the OWNER'S attention for adjustment before proceeding with the work covered by such.

If the OWNER decides that there is no departure from the requirements of the Contract Documents, the CONTRACTOR shall then proceed with the

work as shown, specified or directed. If the OWNER shall decide that Extra Work is involved, he shall so modify the supplemental drawings, specifications or instructions to eliminate the Extra Work, or cause a written Change Order to be issued in accordance with the Contract Documents.

1.3.3 ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS

The CONTRACTOR shall not take advantage of any apparent errors, omissions or discrepancies in the drawings or specifications; and the Engineer shall be permitted to make such corrections or interpretations as may be necessary for the fulfillment of the intent of the Contract Documents. In case of any errors, omissions or discrepancies in the drawings or specifications, the CONTRACTOR shall promptly submit the matter to the OWNER or OWNER'S Representative in writing who, in turn, shall promptly make a determination and issue the necessary instructions in writing. Any adjustment by the CONTRACTOR without this determination and instructions shall be at the CONTRACTOR'S own risk and expense. The Work is to be made complete as intended by the Contract Documents.

1.3.4 EXISTING STRUCTURES

The plans show the general locations of some known surface and subsurface structures. The locations of many gas mains, water mains, conduits, sewers, other utilities, etc., however, are unknown, and the OWNER assumes no responsibility for failure to show any or all of these structures on the plans or to show them in their exact locations. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for Extra Work or for increasing the pay quantities in any manner whatsoever. The CONTRACTOR shall be solely responsible for locating all gas mains, water mains, conduits, sewers, other utilities etc., so as to perform the Work without damaging the same.

II. THE WORK

2.1 SCOPE OF WORK

Contractor shall provide all labor, supervision, materials, and equipment necessary to perform all work required by the Contract Documents in connection with **IFB 2021-198, Construction, Exterior Repairs to Second Floor Walkway & First Floor Soffit, 900E. Park Blvd., Plano.**

2.2 CHANGE OR MODIFICATION OF CONTRACT

2.2.1 ALTERATION OF PLANS AND SPECIFICATIONS

The OWNER reserves the right to make such changes in the plans and specifications and in the character of the work as may be necessary or desirable to insure completion in the most satisfactory manner, provided such changes do not materially alter the original plans and specifications or change the general nature of the Work as a whole. Such changes shall not be considered as waiving or invalidating any condition or provision of the Contract or bonds. Such changes shall be issued by the Engineer.

2.2.2 INCREASED OR DECREASED QUANTITIES OF WORK

The OWNER reserves the right and may from time to time, by written order, and without notice to any surety, make changes in the quantity or time of performance of the Work, as may be considered necessary or desirable and such changes shall not be considered as waiving or invalidating any conditions or provisions of the Contract or bonds. The CONTRACTOR shall perform all the Contract Work in strict compliance with the Contract Documents, and shall not make any changes to the Work without prior written authorization from the OWNER, in the form of a written Change Order. If such changes increase or decrease either the cost or the time necessary for the performance of the Work, then the parties will mutually agree upon an equitable adjustment to the price or time to perform the Work pursuant to the terms of the Contract.

2.2.3 EXTRA WORK/CHANGE ORDERS

When any work is necessary to the proper completion of the Project and for which no prices are provided for in the Bid or Proposal and Contract, the CONTRACTOR shall do such work, but only when and as ordered in writing by the OWNER. The OWNER may order changes in the Work without invalidating Contract. Payment for Extra Work shall be made as provided herein. Contractor agrees that overhead and profit for Extra Work shall not exceed 10% of the total cost of the Extra Work. The Contractor shall not be entitled to any additional funds for any work or Extra Work performed on the Project, unless a Change Order is issued and signed by the Owner. The CONTRACTOR shall perform the work as altered, whether increased or decreased, and no allowances shall be made for anticipated profits. Nothing in this section shall give rise to any claims for any delay or acceleration damages, and the CONTRACTORS sole remedy for any delays in the Project shall remain an equitable extension of time as provided for in the Contract Documents. CONTRACTOR acknowledges and agrees to waive all rights or claims for compensation for any additional or other work not specifically authorized by the OWNER.

2.3 DISPUTED WORK AND CLAIMS FOR ADDITIONAL COMPENSATION

If the CONTRACTOR is of the opinion that (a) the work necessary or required to accomplish the result intended by this Contract, or (b) any work ordered to be done as Contract Work by the OWNER is Extra Work and not Contract Work, or (c) any determination or order of the OWNER violates the terms and provisions of this Contract, the CONTRACTOR shall promptly, either before proceeding with such work or complying with such order or determination, notify the OWNER in writing of his contentions with respect thereto and request a final determination thereof.

Such determination of the OWNER shall be given in writing to the CONTRACTOR. If the OWNER determines that the work in question is Extra Work and not Contract Work, or that the order complained of requires performance by the CONTRACTOR beyond that required by the Contract or violates the terms and provisions of the Contract, thereupon the OWNER shall cause either (a) the issuance of a written Change Order covering the Extra Work as provided herein, or (b) the determination or order complained of to be rescinded or so modified so as to not require performance beyond that required by the terms and provisions of the Contract.

If the OWNER determines that the work in question is Contract Work and not Extra Work, or that the determination or order complained of does not require performance by the CONTRACTOR beyond that required by the Contract or violate the terms and provisions of the Contract, he shall direct the CONTRACTOR to proceed, and the CONTRACTOR must promptly comply. In order to reserve his right to claim compensation for such work resulting from such compliance, however, the CONTRACTOR must, within 20 calendar days after receiving the OWNER'S determination and direction, notify the OWNER in writing that the work is being performed, or that the determination and direction is being complied with, under protest.

If the CONTRACTOR fails to so appeal to the OWNER for a determination or, having so appealed, should the CONTRACTOR thus fail to notify the OWNER in writing of his protest, the CONTRACTOR shall be deemed to have waived any claim for extra compensation or damages therefore. No oral appeals or oral protests, no matter to whom made, shall be deemed even substantial compliance with the provisions of this item.

In addition to the foregoing requirements, the CONTRACTOR shall, upon notice from the OWNER, produce for examination for a minimum period of three (3) years following final payment or termination of contract and audit at the CONTRACTOR'S office, by the representatives of the OWNER, all his books and records showing all of his acts and transactions in connection with contractual performance as well as relating to or arising by reason of the matter in dispute. At such examination a duly authorized representative of the CONTRACTOR may be present.

Unless the aforesaid requirements and conditions are complied with by the CONTRACTOR, the OWNER shall be released from all claims arising under, relating to or by reason of disputed work or Extra Work. It is further stipulated and agreed that no conduct on the part of the OWNER or any agent or employee of the OWNER shall ever be construed as a waiver of the requirements of this section, when such requirements constitute an absolute condition precedent to any approval of any claim for extra compensation, notwithstanding any other provisions of the Contract Documents; and in any action against the OWNER to recover any sum in excess of the contract amount, the CONTRACTOR must allege and prove strict compliance with the provisions of this section. The CONTRACTOR ASSUMES THE RISK OF NONPAYMENT, for failing to comply with any of the requirements of this section.

III. CONTRACTORS RESPONSIBILITIES

3.1 CONTRACTOR'S REPRESENTATIONS, WARRANTIES AND ASSURANCES.

In consideration of, and to induce the award of this contract to him, the CONTRACTOR represents and warrants: (a) That he is financially solvent, and sufficiently experienced and competent to perform the work; (b) That the facts stated in the proposal and the information given by him pursuant to the bidding documents are true and correct in all respects; (c) That he has read, understood and complied with all the requirements set forth in the bidding documents; (d) That he is familiar with and understands all laws and regulations applicable to the work; and (e) unless otherwise specifically provided for in the Contract Documents, the CONTRACTOR shall do all the Work and shall furnish all the tools, equipment, machinery, materials, labor and appliances, except as herein otherwise specified, necessary or proper for performing and completing the work required by this Contract, in the manner and within the time herein prescribed.

By executing the contract, the CONTRACTOR represents that he has visited the site of Work, has fully familiarized himself with the local and on-site conditions under which the work is to be performed and has correlated his observation with the requirements of the Contract Documents. In addition, the CONTRACTOR represents that he has satisfied himself as to subsurface conditions at the site of the Work. Information, data and representations contained in the Contract Documents pertaining to the conditions at the site, including subsurface conditions, are for information only and are not warranted or represented in any manner to accurately show the conditions at the site of the Work. The CONTRACTOR agrees that he shall make no claims for damages, additional compensation or extension of time against the OWNER because of encountering actual conditions in the course of the Work which vary or differ from conditions or information contained in the Contract Documents. All risks of differing subsurface conditions shall be borne solely by the CONTRACTOR.

The CONTRACTOR shall carefully study and compare the Contract Documents and shall at once report to the OWNER any error, inconsistency or omission he may discover. The CONTRACTOR shall perform no portion of the Work at any time without Contract Documents or, where required, approved shop drawings, product data or samples for such portion of the work.

3.1.1 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Shop drawings are drawings, diagrams, schedules and other data specially prepared for the work by the CONTRACTOR or any subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

B. Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the CONTRACTOR to illustrate a material, product or system for some portion of the work.

C. Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the work shall be judged.

D. the CONTRACTOR shall provide, review, approve and submit to the Engineer with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the OWNER or any separate contractor, all shop drawings, product data and samples required by the Contract Documents. The Work will be performed in accordance with submittals approved by the Engineer. The CONTRACTOR shall not be relieved responsibility for deviations from the requirements of the Contract Documents by errors or omissions by the OWNER or Engineer in approving Shop Drawings, Product Data, samples or any other submittals.

E. By approving and submitting shop drawings, product data and samples, the CONTRACTOR represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or shall do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

F. As the Engineer's review is only for general conformance with the requirements of the Contract Documents, the CONTRACTOR shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Engineer's approval of shop drawings, product data or samples unless the CONTRACTOR has specifically informed the Engineer in writing of such deviation at the time of submission and the Engineer have given written approval to the specific deviation. The

CONTRACTOR shall not be relieved from responsibility for errors or omissions in the shop drawings, product data or samples by the Engineer's approval thereof. The CONTRACTOR shall direct specific attention, in writing or on resubmitted shop drawings, product data or samples, to revisions other than those requested by the Engineer on previous submittals.

G. the CONTRACTOR shall be responsible for delays caused by rejection of the submittal of inadequate or incorrect shop drawings, product data or samples. The CONTRACTOR shall be responsible for seeing that any "approved" copies of shop drawings bearing the approval of the Engineer are allowed on the job site. The CONTRACTOR shall be responsible for providing all copies of approved shop drawings necessary for the construction operations.

H. the CONTRACTOR shall keep adequate records of submittal and approvals so that an accurate up-to-date record file is maintained at the job site at all times.

I. No portion of the work requiring submission of a shop drawing, product data or sample shall be commenced until the submittal has been approved by the Engineer. All such portions of the work shall be in accordance with approved submittals.

3.1.2 SURETY BONDS

With the execution and delivery of the contract, the CONTRACTOR shall furnish and file with the OWNER in the amounts herein required, the surety bonds specified hereunder. Without exception, the OWNER'S bond forms, attached hereto as Section 00610 and 00611 must be used, and exclusive venue for any lawsuit in connection with such bonds shall be specified as the county in which the OWNER'S principal office is located. Such surety bonds shall be in accordance with Texas Law, including but not limited to, the provisions of Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code. These bonds shall automatically be increased by the amount of any change order or supplemental agreement which increases the contract price with or without notice to the surety, but in no event shall a change which reduces the contract amount reduce the penal amount of such bonds.

A. Performance Bond. A good and sufficient bond in an amount not less than 100 percent (100%) of the total amount of the Contract Price guaranteeing the full and faithful execution of the Work and performance of the Contract in accordance with the plans, specifications and Contract Documents, including any extensions thereof, for the protection of the OWNER. This bond shall provide for the repair and/or replacement of all

defects due to faulty materials and workmanship that appear within a period of one year from the date of completion and acceptance of the improvement by the OWNER or such lesser or greater period as may be designated in the Contract Documents.

B. Payment Bond. A good and sufficient bond in an amount not less than 100 percent (100%) of the total amount of the Contract Price guaranteeing the full and proper protection of all payment bond beneficiaries and claimants supplying labor and material in the prosecution of the work provided for in said Contract and for the use of each claimant.

C. Maintenance Bond. A good and sufficient bond in an amount not less than ten percent (10%) of the total amount of the Contract Price guaranteeing the project against defects.

D. Sureties. No sureties shall be accepted by the OWNER who are now in default or delinquent on any bonds or who are interested in any litigation against the OWNER. All bonds shall be made on forms furnished by the OWNER and shall be executed by not less than one corporate surety authorized to do business in the State of Texas and acceptable to the OWNER. The sureties shall be listed in the most current Federal Register Treasury List. Each bond shall be executed by the CONTRACTOR and surety. Each surety shall designate an agent resident in the OWNER'S jurisdictional area acceptable to the OWNER to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship. The OWNER reserves the right to reject any and all sureties.

E. Additional or Substitute Bonds. If at any time the OWNER is or becomes dissatisfied with any surety, then upon the performance or payment bond, the CONTRACTOR shall, within five days after notice from the OWNER to do so, substitute an acceptable bond (or bonds), or provide an additional bond, in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such bonds shall be paid by the CONTRACTOR without recourse to the OWNER. No further payments under the contract shall be deemed due or payable until the substitute or additional bonds shall have been furnished and accepted by the OWNER.

3.1.3 PERMITS AND FEES

The CONTRACTOR shall secure and pay for all building permits and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are normally and legally required for the construction of similar projects in the State of Texas. The CONTRACTOR will give all notices required by laws,

ordinances, rules, regulations and lawful orders of authorized public authorities required for the proper and legal performance of the Work.

3.14 CONTRACT DOCUMENTS AT SITE

The CONTRACTOR shall keep and maintain at the Project site one record copy of the Contract Documents, including but not limited to, the Drawings, Specifications, addenda, Change Orders, submittals, Product Data, Samples and other modifications, in good order and marked to show the current construction of the Project. These documents shall be available to the OWNER or Engineer to review at any time and shall be submitted to the OWNER upon completion of the Project, along with a complete set of as built drawings.

3.2 CONTRACTOR'S RESPONSIBILITIES

3.2.1 PERFORMANCE OF THE WORK

In addition to those matters elsewhere expressly made the responsibility of the CONTRACTOR, the CONTRACTOR shall have the full and direct responsibility for the performance and completion of the Work under this Contract and for any act or neglect of the CONTRACTOR, his agents, employees or subcontractors. He shall bear all losses, if any, resulting on account of the amount and character of the Work, or because the conditions under which the work must be done are different from what were estimated or anticipated by him, or because of weather, floods, elements or other causes.

3.2.2 MEANS AND METHODS OF CONSTRUCTION

Unless otherwise expressly provided in the contract drawings, specifications or bulletins, the means and methods of construction shall be such as the CONTRACTOR may choose; subject, however, to the OWNER'S right to prohibit means and methods proposed by the CONTRACTOR which in the OWNER'S judgment:

- A. shall constitute a hazard to the Work, or to persons or property, or shall violate express requirements of applicable laws or ordinances; or
- B. shall cause unnecessary or unreasonable inconvenience to the public; or
- C. shall not produce finished work in accordance with the requirements of the Contract Documents; or
- D. shall not assure the Work to be completed within the time allowed by the contract.

The OWNER'S approval of the CONTRACTOR'S means or methods of construction, or the OWNER'S failure to exercise his right to prohibit such means or methods, shall not relieve the CONTRACTOR of his responsibility for the Work or of his obligation to accomplish the result intended by the Contract Documents; nor shall the exercise or non-exercise of such rights to prohibit create a cause of action for damages or provide a basis for any claim by the CONTRACTOR against the OWNER. The CONTRACTOR shall be solely responsible for, the construction means and methods, techniques, sequences, procedures, and for the safety precautions and programs in connection with the Work or the Project.

If the Contract Documents specify any means, methods, techniques, sequences or procedures, the CONTRACTOR shall evaluate said specifications and determine that they are safe for the proper prosecution of the Work. The CONTRACTOR shall be solely responsible for the job site safety of such means, methods, techniques, sequences or procedures. If the CONTRACTOR determines the the specified means, methods, techniques, sequences or procedures may not be safe, the CONTRACTOR shall immediately notify the OWNER and Engineer and shall not proceed without further instructions.

3.2.3 CONSTRUCTION SCHEDULE

The CONTRACTOR, immediately after being awarded the contract, shall prepare and submit for the OWNER, and Engineer's information an estimated progress schedule for the work. The progress schedule shall be related to the entire Project to the extent required by the Contract Documents and shall provide for expeditious and reasonable execution of the work, not to exceed the time limits for completion provided in the Contract Documents. The progress schedule shall be updated as the Work proceeds or the schedule changes and immediately upon request by the OWNER. The CONTRACTOR shall also prepare a schedule of submittals that allows for a reasonable time for the OWNER or Engineer to review the submittals so as not to delay the Project.

3.2.4 TIME OF PERFORMANCE OF THE WORK

The CONTRACTOR shall begin the work to be performed under this Contract not later than 10 days from the date specified in the purchase or work order and shall conduct the work in such a manner and with sufficient equipment, material and labor as is necessary to insure its completion within the working time. It is the intent of this specification to provide a continuous construction operation without delay except as occasioned by unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, and it shall be the

CONTRACTOR's responsibility to execute the work in the most expeditious manner.

Work shall be done only during the regular and commonly accepted and prescribed working hours. No work shall be done on nights, Sundays or regular holidays unless permission is given by the OWNER

Time is of the Essence for the performance of the Work by the CONTRACTOR. CONTRACTOR agrees that the time allotted for the performance of the Work is reasonable.

3.2.5 PERFORMANCE OF EXTRA OR DISPUTED WORK

While the CONTRACTOR or his subcontractor is performing Extra Work in accordance with the OWNER'S written order, the cost of which is to be determined on a time and material basis, or is performing disputed work or complying with a determination or order under protest, the CONTRACTOR shall, on the Monday following the performance of the work, furnish the OWNER'S representative at the site with three copies of verified statements showing:

A. the name, address and telephone number of each workman employed on such Extra Work or engaged in complying with such determination or order, the character of Extra Work each is doing and the wages paid to him, including the rate and amount of payroll taxes, contributions for insurance, and federal social security; and

B. the nature, cost and quantity of any materials, plant equipment or construction equipment furnished or used in connection with the performance of such Extra Work or in complying with such determination or order, and from whom purchased or rented, along with copies of invoices for such materials, plant equipment or construction equipment.

The CONTRACTOR and his subcontractors, when required by the OWNER, must also produce for inspection for a minimum period of three (3) years following final payment or termination of contract, produce for examination and audit by designated OWNER representatives, any and all of his books, vouchers, records, daily job diaries and reports, canceled checks, etc. showing the nature and quantity of labor, materials and equipment actually used in the performance of the Extra Work; the amounts expended therefore; and the costs incurred for insurance premiums and other items of expense directly chargeable to such Extra Work. The CONTRACTOR must permit the OWNER'S representatives to make extracts therefrom or copies thereof as may be desired.

Failure of the CONTRACTOR to comply strictly with the requirements of this section shall constitute a waiver of any claim for extra compensation on account of the performance of such Extra Work.

3.3 QUALITY OF WORK

3.3.1 INSPECTION AND TESTS

The CONTRACTOR shall furnish the OWNER with every reasonable accommodation and opportunity to ascertain whether or not the work performed is in accordance with the requirements and intent of the plans and specifications. Any work done or materials used without suitable inspection by the OWNER may be ordered removed and replaced at the CONTRACTOR'S expense. The CONTRACTOR shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the OWNER in his administration of the contract, or by inspections, tests or approvals required or performed by persons other than the CONTRACTOR.

Unless otherwise provided, the CONTRACTOR shall make arrangements for all tests, inspections and approvals with an independent testing laboratory or entity required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction over the Work or items to be tested, inspected or approved. If additional testing or inspection is required they shall be performed at the CONTRACTOR'S expense.

3.3.2 REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

All work which has been rejected or condemned shall be repaired, or if it cannot be repaired satisfactorily, it shall be removed and replaced at the CONTRACTOR'S expense. Defective materials shall be immediately removed from the site of the work. Work done without line and grade having been given, work done beyond the lines or not in conformity with the grades shown on the plans or as given, save as herein provided, work done without written authority and prior agreement in writing as to process, shall be done at the CONTRACTOR'S risk and shall be considered unauthorized and at the option of the OWNER may be ordered removed at the CONTRACTOR'S expense.

Upon failure of the CONTRACTOR to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized or condemned work or materials immediately after receiving notice from the OWNER, the OWNER shall, after giving written notice to the CONTRACTOR, have the authority to cause defective work to be remedied or removed and replaced, or to cause unauthorized work to be removed and to deduct the

cost thereof from any monies due or to become due the CONTRACTOR. Alternatively, the OWNER may, at its option, declare the CONTRACTOR in default.

3.3.3 WORKING AREA; COORDINATION WITH OTHER CONTRACTORS; FINAL CLEANUP

The CONTRACTOR shall confine his equipment, storage of materials and construction operations to the area shown on the contract drawings or stated in the specifications, prescribed by ordinance, laws, or permits or as may be directed by the OWNER, and shall not unreasonably encumber the site or public right-of-way with his construction equipment, plant or materials.

Such area shall not be deemed for the exclusive use of the CONTRACTOR. Other contractors of the OWNER may enter upon and use such portions of the area and for such items as determined by the OWNER are necessary for all purposes required by their contracts. The CONTRACTOR shall give to such other contractors all reasonable facilities and assistance to the end that the work on this and other contracts shall not be unduly or unreasonably delayed. Any additional areas desired by the CONTRACTOR for his use shall be provided by him at his own cost and expense.

The CONTRACTOR is responsible for cutting, fitting or patching any parts of the Work where such work is necessary to make the Work complete, for parts to fit together, or for any damage to the Work prior to Final Acceptance.

The CONTRACTOR shall keep the Project and the surrounding area clean and free from the accumulation of waste materials or trash. Upon completion of the work and before final acceptance and final payment shall be made, the CONTRACTOR shall completely clean and remove from the site of the work surplus and discarded materials, temporary structures and debris of every kind. He shall leave the site of the work in a neat and orderly condition equal to that which originally existed, or as called for in the Contract Documents. Surplus and waste materials removed from the site of the work shall be disposed of at locations satisfactory to the OWNER, and at the CONTRACTOR'S sole cost.

3.4 LEGAL RESPONSIBILITIES

3.4.1. PATENTS AND COPYRIGHTS

The CONTRACTOR shall pay all royalties and license fees and shall provide, by suitable legal agreement with the patentee or owner, for the use of any design, device, material or process covered by letters, patent or any copyright. The CONTRACTOR shall indemnify, defend, hold and save the OWNER and its officers, employees and agents harmless from all liability and claims for infringement of any patent or copyright.

In the event that any claims, suit or action at law or in equity of any kind whatsoever is brought against the OWNER, or its officers, employees or agents involving any such patents, copyrights or license rights, then the OWNER shall have the right to and may retain from any money due or to become due to the CONTRACTOR such sum deemed necessary by the OWNER for its protection until such claim or suit shall have been settled and satisfactory evidence to that effect shall have been furnished the OWNER.

3.4.2 INDEMNIFICATION

To the fullest extent permitted by law, the CONTRACTOR and his sureties shall indemnify, defend and hold harmless the OWNER and all of its, past, present and future, officers, agents and employees from all suits, cause of action, claims, liabilities, losses, fines, penalties, liens, demands, obligations, actions, proceedings, of any kind, character, name and description brought or arising, on account of any injuries or damages received or sustained by any person, destruction or damage to any property on account of, in whole or part, the operations of the CONTRACTOR, his agents, employees or subcontractors; or on account of any negligent act or fault of the CONTRACTOR, his agents, employees or subcontractors in the execution of said Contract; failing to comply with any law, ordinance, regulation, rule or order of any governmental or regulatory body including those dealing with health, safety, welfare or the environment; on account of the failure of the CONTRACTOR to provide the necessary barricades, warning lights or signs; and shall be required to pay any judgment, with cost, which may be obtained against the OWNER growing out of such injury or damage. In no event shall OWNER be liable to CONTRACTOR for indirect or consequential damages or loss of income or profit irrespective of the cause, fault or reason for same. CONTRACTOR'S duty to indemnify herein shall not be limited by any limitation on the type or amount of damages payable by or for CONTRACTOR or any Subcontractor under workman's compensation acts, disability benefit acts or any other employee benefit acts.

In addition, the CONTRACTOR likewise covenants and agrees to, and does hereby, indemnify and hold harmless the OWNER from and against any and all injuries, loss or damages to property of the OWNER during the performance of any of the terms and conditions of this Contract, arising

out of or in connection with or resulting from, in whole or in part, any and all alleged acts or omissions of officers, agents, servants, employees, contractors, subcontractors, licenses or invitees of the CONTRACTOR.

The rights and responsibilities provided in this indemnification provision shall survive the termination or completion of this Contract.

3.5 SUPERVISION AND CONSTRUCTION PROCEDURES

3.5.1. SUPERVISION BY CONTRACTOR

The status of the CONTRACTOR is that of an independent CONTRACTOR under Texas law and the work under this Contract shall be under the direct charge and superintendence of the CONTRACTOR. Except where the CONTRACTOR is an individual and gives his personal superintendence to the work, the CONTRACTOR shall provide a competent superintendent or general foreman on the work site at all times during progress with full authority to act for the CONTRACTOR. The CONTRACTOR shall also provide an adequate staff for the coordination and expediting of the Work.

The superintendent and staff shall be satisfactory to the OWNER. The superintendent or general foreman shall not be changed during this Contract except with the written consent of the OWNER or unless the superintendent or general foreman proves unsatisfactory to the CONTRACTOR and ceases to be in his employ.

If the superintendent should be or become unsatisfactory to the OWNER, he shall be replaced by the CONTRACTOR upon written direction of the OWNER, and in such event, the CONTRACTOR shall not be entitled to file a claim for any additional working time or money from the OWNER.

3.5.2 EMPLOYEES

The CONTRACTOR shall employ only competent, efficient workmen and shall not use on the work any unfit person or one not skilled in the work assigned to him and shall at all times maintain good order among its employees. Whenever the OWNER shall inform the CONTRACTOR in writing that, in his opinion, any employee is unfit, unskilled, disobedient, or is disrupting the orderly progress of the work, such employee shall be removed from the work and shall not again be employed on it. Under urgent circumstances, the OWNER may orally require immediate removal of an employee for cause, to be followed by written confirmation.

The CONTRACTOR shall supervise and direct all the work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences, procedures and safety procedures and for coordinating all portions of the Work under the Contract. The CONTRACTOR shall be responsible to the OWNER for the acts and omissions of his employees, subcontractors and their agents, employees and subcontractors performing any of the work under a contract with the CONTRACTOR.

3.5.3 LABOR AND MATERIALS

Unless otherwise provided in the Contract Documents, the CONTRACTOR shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation and other facilities and services necessary for the proper execution and completion of the work, whether temporary or permanent and whether or not incorporated or to be incorporated into the work.

The CONTRACTOR shall at all times enforce strict discipline and good order among his employees and shall not employ on the work site any unfit person or anyone not skilled in the task assigned to him.

The rate of progress shall be such that the whole work shall be performed and the premises cleaned up in accordance with the Contract within the working time established in the Contract, unless an extension of time is made in the manner hereinafter specified.

3.5.4 WAGE SCALE

In accordance with The Texas Government Code, Title 10, Chapter 2258, Prevailing Wage Rates, the general prevailing wage rate has been determined for this locality for the craft or type of workman needed to execute work of a similar character of the project listed herein. The Contractor shall pay the prevailing wage rate in this locality to all his/her employees and subcontractors performing work on this project, and in no event shall the Contractor pay less than the rate shown in the following schedule.

"General Decision Number: TX20220239 02/25/2022

Superseded General Decision Number: TX20210239

State: Texas

Construction Type: Building

County: Collin County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658.

Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022	Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$15.00 per hour or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 29, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	01/21/2022
2	02/18/2022
3	02/25/2022

ASBE0021-011 08/01/2017

Rates Fringes

ASBESTOS WORKER/HEAT & FROST
INSULATOR (Duct, Pipe and
Mechanical System Insulation)...\$ 25.87 7.23

BOIL0074-003 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 29.47	24.10

CARP1421-002 10/01/2021

	Rates	Fringes
MILLWRIGHT.....	\$ 29.58	11.27

ELEV0021-006 01/01/2022

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 45.54	36.885+a+b

FOOTNOTES:

A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked.

B. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

ENGI0178-005 06/01/2020

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane.....	\$ 32.85	13.10
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above.....	\$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under.....	\$ 32.35	13.10

IRON0263-005 06/01/2020

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND STRUCTURAL).....	\$ 25.14	7.43

PLUM0100-005 05/01/2021

	Rates	Fringes
HVAC MECHANIC (HVAC Unit Installation Only).....	\$ 33.88	13.07
PIPEFITTER (Excludes HVAC Pipe Installation).....	\$ 33.88	13.07

* SUTX2014-015 07/21/2014

	Rates	Fringes
BRICKLAYER.....	\$ 21.06	0.00
CARPENTER, Excludes Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 15.78	0.00
CAULKER.....	\$ 15.16	0.00
CEMENT MASON/CONCRETE FINISHER... DRYWALL HANGER AND METAL STUD INSTALLER.....	\$ 13.04 ** \$ 13.00 **	0.00 0.00
ELECTRICIAN (Alarm Installation Only).....	\$ 20.93	3.86
ELECTRICIAN (Communication Technician Only).....	\$ 15.35	1.39
ELECTRICIAN (Low Voltage Wiring Only).....	\$ 17.04	1.39
ELECTRICIAN, Excludes Low Voltage Wiring and Installation of Alarms/Sound and Communication Systems.....	\$ 20.01	2.69
FORM WORKER.....	\$ 11.89 **	0.00
GLAZIER.....	\$ 16.46	3.94
HIGHWAY/PARKING LOT STRIPING:		

Operator (Striping Machine).....	\$ 10.04 **	2.31
INSTALLER - SIDING (METAL/ALUMINUM/VINYL).....	\$ 14.74 **	0.00
INSTALLER - SIGN.....	\$ 15.50	0.00
INSULATOR - BATT.....	\$ 13.00 **	0.00
IRONWORKER, REINFORCING.....	\$ 12.29 **	0.00
LABORER: Common or General.....	\$ 10.52 **	0.00
LABORER: Mason Tender - Brick...	\$ 10.54 **	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 10.93 **	0.00
LABORER: Pipelayer.....	\$ 13.00 **	0.35
LABORER: Plaster Tender.....	\$ 12.22 **	0.00
LABORER: Roof Tearoff.....	\$ 11.28 **	0.00
LABORER: Landscape and Irrigation.....	\$ 10.55 **	0.00
LATHER.....	\$ 16.00	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 12.83 **	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 13.93 **	0.00
OPERATOR: Bulldozer.....	\$ 18.29	1.31
OPERATOR: Drill.....	\$ 15.69	0.50
OPERATOR: Forklift.....	\$ 13.21 **	0.81
OPERATOR: Grader/Blade.....	\$ 13.03 **	0.00
OPERATOR: Loader.....	\$ 13.46 **	0.85
OPERATOR: Mechanic.....	\$ 17.52	3.33

OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 18.44	0.00
OPERATOR: Roller.....	\$ 15.04	0.00
PAINTER (Brush, Roller and Spray), Excludes Drywall Finishing/Taping.....	\$ 13.35 **	5.10
PAINTER: Drywall Finishing/Taping Only.....	\$ 14.24 **	3.83
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 20.45	4.00
PLASTERER.....	\$ 16.58	0.00
PLUMBER, Excludes HVAC Pipe Installation.....	\$ 22.46	4.06
ROOFER.....	\$ 17.19	0.00
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 21.13	4.79
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 24.88	5.97
SPRINKLER FITTER (Fire Sprinklers).....	\$ 37.50	0.00
TILE FINISHER.....	\$ 11.22 **	0.00
TILE SETTER.....	\$ 14.25 **	0.00
TRUCK DRIVER: 1/Single Axle Truck.....	\$ 16.00	0.81
TRUCK DRIVER: Dump Truck.....	\$ 12.39 **	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	\$ 12.50 **	0.00

TRUCK DRIVER: Water Truck.....\$ 12.00 ** 4.11

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were

prevailing for that classification in the survey. Example:

PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers.

0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter

* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION"

Except for work on legal holidays, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) the number of hours worked per day, except for overtime hours, times (b) the above respective rate per hour.

For legal holidays, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) the number of hours worked on the legal holiday.

For overtime work, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) the number of hours worked on overtime.

Under the provisions of Texas Government Code, Title 10, Chapter 2258, Prevailing Wage Rates, the contractor or subcontractor of the contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded, sixty dollars (\$60.00) for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the contract.

If the construction project involves the expenditure of Federal funds in excess of \$2,000, the minimum wages to be paid various classes of laborers and mechanics will be based upon the wages that will be determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on the project of a character similar to the Contract Work.

3.5.5 Contractors doing business with OWNER agree to comply with Federal Executive Order 13465 E-Verify. It is OWNER’S intention and duty to comply and support the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verification and non-discrimination. According to the INA, contractors/employers may hire only persons who may legally work in the United States. Subsequently, contractors and subcontractors doing business with OWNER must confirm their enrollment in the E-Verify system which verifies employment eligibility through completion and checking of I-9 forms. OWNER reserves the right to audit contractors process to verify enrollment compliance.

3.5.6 COMPLIANCE WITH LAWS

The CONTRACTOR shall fully comply with all local, state and federal laws, including all codes, ordinances and regulations applicable to this Contract and the Work to be done thereunder, which exist or which may be enacted later by governmental bodies having jurisdiction or authority for such enactment.

All work required under this Contract is intended to comply with all requirements of law, regulation, permit or license. If the CONTRACTOR finds that there is a variance, he shall immediately report this to the OWNER for resolution.

3.5.6.1 EQUAL EMPLOYMENT OPPORTUNITY

The CONTRACTOR shall comply with all local, state and federal employment and discrimination laws and shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin or any other class protected by law.

3.5.7 RAILWAY CROSSINGS

Where the Work encroaches upon any right-of-way of any railway, the OWNER shall secure the necessary easement for the work. Where railway tracks are to be crossed, the CONTRACTOR shall observe all the regulations and instructions of the railway company as to methods of doing the work or precautions for safety of property and the public. All negotiations with the railway company, except for right-of-way, shall be made by the CONTRACTOR. The railway company shall be notified by the CONTRACTOR not less than five days prior to commencing the work. The CONTRACTOR shall not be paid separate compensation for such railway crossing but shall receive only the compensation as set out in the proposal.

3.5.8 OTHER CONTRACTORS; OBLIGATION TO COOPERATE

The OWNER reserves the right to perform construction on the Project with its own forces or may award other contracts for additional work on this Project, and the CONTRACTOR shall fully cooperate with such other contractors and shall coordinate and fit his work to be done hereunder to such additional work as may be contracted by the OWNER. The CONTRACTOR shall not commit or permit any act which shall interfere with the performance of work by any other contractor.

Upon receiving written notice from the CONTRACTOR that the OWNER or another contractor is failing to coordinate his work with the Work under this Contract as directed by the OWNER, the OWNER shall promptly investigate the charge and take such necessary action as the situation may require. However, the OWNER shall not be liable to the CONTRACTOR for damages suffered by the CONTRACTOR due to the fault or negligence of another contractor or through failure of another contractor to carry out the directions of the OWNER. Should any interference occur between contractors, the Engineer may furnish the CONTRACTOR with written instructions designating priority of effort, whereupon the CONTRACTOR shall immediately comply with such direction. In such event, the CONTRACTOR shall be entitled to an extension of working

time only for unavoidable delays verified by the Engineer; however, no increase in the Contract Price shall be due the CONTRACTOR.

3.5.9 SUBCONTRACTS

The CONTRACTOR shall not make any subcontract for performing any portion of the Work included in the contract without written notice to the OWNER. This contract having been made pursuant to the bid submitted by the CONTRACTOR and in reliance with the CONTRACTOR'S personal qualifications and responsibility, the OWNER reserves the right to withhold approval of any subcontractor which the OWNER may deem would not be in the OWNER'S best interest.

The CONTRACTOR shall, as soon as practicable after signing the Contract, submit a separate written notice to the OWNER identifying each proposed subcontractor. Upon request of the OWNER, the CONTRACTOR shall promptly furnish additional information tending to establish that any proposed subcontractor has the necessary facilities, skill, integrity, past experience and financial resources to perform the work in accordance with the terms and conditions of this Contract.

If the OWNER determines that any proposed subcontractor is unacceptable, he shall so notify the CONTRACTOR, who may thereupon submit another proposed subcontractor unless the CONTRACTOR decides to do the work himself. Disapproval by the OWNER of any proposed subcontractor shall not provide a basis for any claim by the CONTRACTOR.

If an approved subcontractor fails to properly perform the work undertaken, he shall be removed from the job upon request of the OWNER, following notification to the CONTRACTOR in writing of the request for removal and the reasons therefore.

Each subcontract entered into shall provide that the provisions of this Contract shall apply to such subcontractor and his officers and employees in all respects as if he and they were employees of the CONTRACTOR. The OWNER'S decision not to disapprove of any subcontract shall not relieve the CONTRACTOR of any of his responsibilities, duties and liabilities hereunder. The CONTRACTOR shall be solely responsible for the acts, omissions, negligence or defaults of his subcontractors and of such subcontractor's officers, agents and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the CONTRACTOR to the extent of his subcontract.

The CONTRACTOR agrees to bind each subcontractor and each subcontractor agrees to be bound by the terms of the Contract Documents

insofar as applicable to his work. The CONTRACTOR and each subcontractor jointly and severally agree that nothing in the Contract Documents or otherwise shall create or be deemed to create any rights in favor of a subcontractor against the OWNER; nor shall be deemed or construed to impose upon the OWNER any obligation, liability or duty to a subcontractor; or to create any contractual relation whatsoever between a subcontractor and the OWNER.

The provisions contained herein shall likewise apply to any sub-subcontracts.

3.6 PROTECTION OF WORK AND OF PERSONS AND PROPERTY

3.6.1 PROTECTION OF WORK

During performance and up to date of final acceptance, the CONTRACTOR shall be under the absolute obligation to protect the finished work against any damage, loss or injury. In the event of such damage, loss or injury, the CONTRACTOR shall promptly replace or repair such work, whichever the OWNER shall determine to be preferable. The obligation to deliver finished work in strict accordance with the Contract prior to final acceptance shall be absolute and shall not be affected by the OWNER'S approval of or failure to prohibit means and methods of construction used by the CONTRACTOR. All risk of loss or damage to the work shall be borne solely by the CONTRACTOR until final completion and acceptance of all work by the OWNER, as evidenced by the OWNER'S issuance of a certificate of acceptance.

3.6.2 PROTECTION OF PERSONS AND PROPERTY

The CONTRACTOR shall have the responsibility to provide and maintain all warning devices and take all precautionary measures required by law or otherwise to protect persons and property while said persons or property are approaching, leaving or within the work site or any area adjacent to said work site. No separate compensation shall be paid to the CONTRACTOR for the installation or maintenance of any warning devices, barricades, lights, signs or any other precautionary measures required by law or otherwise for the protection of persons or property.

The CONTRACTOR shall assume all duties owed by the OWNER to the general public in connection with the general public's immediate approach to and travel through the work site and the area adjacent to said work site.

Where the work is carried on in or adjacent to any street, alley, sidewalk, public right-of-way or public place, the CONTRACTOR shall at his own

cost and expense provide such flagmen and watchmen and furnish, erect and maintain such warning devices, barricades, lights, signs and other precautionary measures for the protection of persons or property as may be prudent or necessary, or as are required by law. The CONTRACTOR'S responsibility for providing and maintaining flagmen, watchmen, warning devices, barricades, signs and lights and other precautionary measures shall not cease until the project shall have been completed and accepted by the OWNER, and shall cease when the certificate of acceptance is issued by the OWNER pursuant to the Contract Documents.

If the OWNER discovers that the CONTRACTOR has failed to comply with the applicable federal and state law (by failing to furnish the necessary flagmen, warning devices, barricades, lights, signs or other precautionary measures for the protection of persons or property), the OWNER may order the CONTRACTOR to take such additional precautionary measures as required by law to be taken to protect persons and property.

In addition, the CONTRACTOR shall be held responsible for all damages to the work and other public or private property due to the failure of warning devices, barricades, signs, lights or other precautionary measures in protecting said property; and whenever evidence is found of such damage, the OWNER may order the damaged portion immediately removed and replaced by and at the cost and expense of the CONTRACTOR.

3.6.3 SAFETY; TRENCH SAFETY; UNDERGROUND UTILITY SAFETY; PUBLIC CONVENIENCE AND SAFETY;

The CONTRACTOR shall be responsible for complying with state laws and federal regulations relating to safety, trench safety, and underground utility safety, including those which may be enacted during the performance under this Contract. The CONTRACTOR shall comply with the provisions of the The Standard Specifications and Standard Drawings from the Public Works Construction Standards-North Central Texas Council of Governments, 2004 edition and all subsequent addendums and the Instructions to Bidders regarding trench safety, public convenience and safety, and sanitary provisions. The CONTRACTOR shall be solely responsible for, the construction means and methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work and the Project.

3.7 MATERIALS AND WORKMANSHIP; WARRANTIES AND GUARANTEES

Unless otherwise expressly provided in the contract drawings or specifications, the work shall be performed in accordance with the best modern practice with

materials and workmanship of the highest quality and suitable for their purpose. The OWNER shall judge and determine the CONTRACTOR'S compliance with these requirements.

3.7.1 MATERIALS AND EQUIPMENT

The CONTRACTOR shall be free to secure the approved materials, equipment and articles from sources of his own selection. However, if the OWNER finds that the work shall be delayed or adversely affected in any way because a selected source of supply cannot furnish a uniform product in sufficient quantity and at the time required and a suitable source does exist, or the product is not suitable for the Work, the OWNER shall have the right to require the original source of supply changed by the CONTRACTOR. The CONTRACTOR shall have no claim for extra cost or damage because of this requirement.

The CONTRACTOR warrants to the OWNER that all materials and equipment furnished under this contract shall be new unless otherwise specified in the Contract Documents and that same shall be of good quality and workmanship, free from faults and defects and in conformance with the Contract Documents. All materials and equipment not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective and shall be promptly repaired or replaced by the CONTRACTOR at the CONTRACTOR's sole cost upon demand of the OWNER. If required by the OWNER, the CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.7.1.1 "OR EQUAL" CLAUSE

A. Whenever a material or article required is specified or shown on the plans, by using the name of a proprietary product or of a particular manufacturer or vendor, any material or article which the Engineer determines shall perform adequately the duties imposed by the general design or which the Engineer deems to be of similar appearance (in cases where appearance is of importance) shall be considered equal and satisfactory, provided the material or article so proposed is of equal substance and function. Authorization for any substitution of materials or articles must be obtained by the CONTRACTOR from the Engineer before proceeding with such substitution.

B. Should an authorized substitution require redesign of a portion of the work or alterations to the plans or specifications in order for the materials or articles which are to be substituted to properly fit or in other ways to be

satisfactory, the Engineer shall accomplish such redesigns and alterations. The CONTRACTOR shall bear all reasonable costs associated with redesign and alteration efforts performed by the Engineer.

3.7.2 WORKMANSHIP

The CONTRACTOR shall promptly correct or replace all work rejected by the OWNER as defective or as failing to conform to the Contract Documents whether observed before or after substantial completion and whether or not fabricated, installed or completed. The CONTRACTOR shall bear all costs of correcting such rejected work, including costs incurred for additional services made necessary thereby.

3.8 WARRANTIES

3.8.1 SPECIAL WARRANTY

If within one year after final acceptance of the work by the OWNER, as evidenced by the final certificate of acceptance or within such longer or shorter period of time as may be prescribed by law or by the terms of any other applicable special warranty on designated equipment or portions of work as required by the Contract Documents, any of the work is found to be defective or not in accordance with the Contract Documents, the CONTRACTOR shall correct it promptly after receipt of a written notice from the OWNER to do so. This obligation shall survive termination or completion of the Contract. The OWNER shall give such notice promptly after discovery of the condition.

The CONTRACTOR shall remove from the site all portions of the work which are defective or nonconforming and which have not been corrected unless removal is waived in writing by the OWNER.

3.8.2 SUBCONTRACTORS' AND MANUFACTURERS' WARRANTIES

All subcontractors', manufacturers' and suppliers' warranties and guarantees, express or implied, respecting any part of the work and any materials used therein, shall be obtained and enforced by the CONTRACTOR for the benefit of the OWNER without the necessity of separate transfer or assignment thereof.

3.8.3 CORRECTED WORK WARRANTY

Any work repaired or replaced, pursuant to this section, shall be subject to the provisions of this section to the same extent as work originally performed.

3.8.4 RIGHTS AND REMEDIES

The rights and remedies of the OWNER provided in this section are in addition to, and do not limit, any rights or remedies afforded to the OWNER by law or any other provision of the Contract Documents, or in any way limit the OWNER'S right to recovery of damage due to default under the Contract. No action or inaction by the OWNER shall constitute a waiver of a right or duty afforded it under the Contract.

IV. INSURANCE

4.1 CONTRACTOR'S INSURANCE

Before commencing work, the CONTRACTOR shall be required to furnish the Collin County Purchasing Agent with certified copies of all insurance certificate(s) required by Texas Law, and the coverages required herein, indicating the coverage is to remain in force throughout the term of this Contract. CONTRACTOR shall also be required to furnish the Collin County Purchasing Agent with certified copies of subcontractor's insurance certificates required by the Texas Department of Insurance, Division of Workers' Compensation, section 406.096(b), and coverages required herein in section 4.2. Without limiting any of the other obligations or liabilities of the CONTRACTOR, during the term of the Contract the CONTRACTOR and each subcontractor at their own expense shall purchase and maintain the herein stipulated minimum insurance with companies duly approved to do business in the State of Texas and satisfactory to the OWNER. Certificates required of each policy for the CONTRACTOR and each subcontractor shall be delivered to the OWNER before any work is started, along with a written statement from the issuing company stating that said policy shall not be canceled, nonrenewed or materially changed without 30 days advance written notice being given to the OWNER.

In addition to any coverage required by Texas Law, the CONTRACTOR shall provide the following coverages at not less than the specified amounts:

- 4.2 Workers Compensation insurance required by Texas Law at statutory limits, including employer's liability coverage at \$1,000,000. In addition to these, the CONTRACTOR and each subcontractor must comply with all the requirements of the Texas Department of Insurance, Division of Workers' Compensation, section 406.096(b); (Note: If you have questions concerning these requirements, you are instructed to contact the DWC.)

By signing this contract or providing or causing to be provided a certificate of coverage, the CONTRACTOR is representing to the OWNER that all employees of the CONTRACTOR and its subcontractors who will provide services on the Project will be covered by workers compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the

commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the CONTRACTOR to administrative penalties, criminal penalties, civil penalties, or other civil actions.

The CONTRACTOR'S failure to comply with any of these provisions is a breach of Contract by the Contractor which entitles the OWNER to declare the Contract void if the CONTRACTOR does not remedy the breach within ten (10) days after receipt of notice of breach from the OWNER.

- 4.3 Broad form commercial general liability insurance, including independent contractor's liability, completed operations and contractual liability, written on an occurrence form, covering, but not limited to, the liability assumed under the indemnification provisions of this contract, fully insuring CONTRACTOR'S liability for injury to or death of OWNER'S employees and third parties, extended to include personal injury liability coverage with damage to property, with minimum limits as set forth below:
- General Aggregate \$2,000,000
 - Products — Components/Operations Aggregate \$2,000,000
 - Personal and Advertising Injury \$ 1,000,000
 - Each Occurrence \$ 1,000,000

4.3.1 The policy shall include coverage extended to apply to completed operations, asbestos hazards (if this project involves work with asbestos) and XCU (explosion, collapse and underground) hazards. The completed operations coverage must be maintained for a minimum of one year after final completion and acceptance of the work, with evidence of same filed with OWNER.

- 4.4 Comprehensive automobile and truck liability insurance, covering owned, hired and non-owned vehicles, with a combined bodily injury and property damage minimum limit of \$1,000,000 per occurrence; or separate limits of \$1,000,000 for bodily injury (per person), \$1,000,000 for bodily injury (per accident) and \$1,000,000 for property damage. Such insurance shall include coverage for loading and unloading hazards.

4.5 OWNER'S PROTECTIVE LIABILITY INSURANCE

CONTRACTOR shall obtain, pay for and maintain at all times during the prosecution of the work under this contract an OWNER'S protective liability insurance policy naming the OWNER as insured for property damage and bodily injury, which may arise in the prosecution of the Work or CONTRACTOR'S operations under this Contract. Coverage shall be on an "occurrence" basis, and the policy shall be issued by the same insurance company that carries the CONTRACTOR'S liability insurance with a combined bodily injury and property damage minimum limit of \$1,000,000 per occurrence and \$1,000,000 aggregate.

4.6 “UMBRELLA” LIABILITY INSURANCE

CONTRACTOR shall obtain, pay for and maintain umbrella liability insurance during the contract term, insuring CONTRACTOR for an amount of not less than \$1,000,000 per occurrence combined limit for bodily injury and property damage that follows from and applies in excess of the primary liability coverages required hereinabove. The policy shall provide “drop down” coverage where underlying primary insurance coverage limits are insufficient or exhausted. OWNER shall be named as an additional insured.

4.7 RAILROAD PROTECTIVE INSURANCE

When required in the Special Provisions, CONTRACTOR shall obtain, maintain and present evidence of railroad protective insurance (RPI). The policy shall be in the name of the railroad company having jurisdiction over the right-of-way involved. The minimum limit of coverage shall meet the specifications provided by the railroad company. The OWNER shall specify the amount of RPI necessary.

4.8 POLICY ENDORSEMENTS AND SPECIAL CONDITIONS

All policies to be furnished by CONTRACTOR shall include the following conditions by endorsement to the policy:

- A. each policy shall name the OWNER as an additional insured as to all applicable coverage;
- B. each policy shall require that 30 days prior to the cancellation, nonrenewal or any material change in coverage, a notice thereof shall be given to OWNER by certified mail;
- C. the term “OWNER” shall include all past, present or future, authorities, boards, bureaus, commissions, divisions, departments and offices of the OWNER and individual members, elected official, officers, employees and agents thereof in their official capacities and/or while acting on behalf of the OWNER;
- D. the policy phrase “other insurance” shall not apply to the OWNER where the OWNER is an additional insured on the policy;
- E. all provisions of the contract concerning liability, duty and standard of care together with the indemnification provision, shall be underwritten by contractual liability coverage sufficient to include such obligations within applicable policies;
- F. each policy shall contain a waiver of subrogation in favor of OWNER, and its, past, present and future, officials, employees, and volunteers; and,
- G. each certificate of insurance shall reference the Project and Contract number, contain all the endorsement required herein, and require a notice to the OWNER of cancellation.

Insurance furnished by the CONTRACTOR shall be in accordance with the following requirements:

- A. any policy submitted shall not be subject to limitations, conditions or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by the CONTRACTOR. The OWNER'S decision thereon shall be final;
- B. all policies are to be written through companies duly licensed to transact that class of insurance in the State of Texas with a financial ratings of A-VII or better as assigned by BEST Rating Company or equivalent; and
- C. All liability policies required herein shall be written with an "occurrence" basis coverage trigger.

CONTRACTOR agrees to the following:

- A. CONTRACTOR hereby waives subrogation rights for loss or damage to the extent same are covered by insurance. Insurers shall have no right of recovery or subrogation against the OWNER, it being the intention that the insurance policies shall protect all parties to the Contract and be primary coverage for all losses covered by the policies;
- B. Companies issuing the insurance policies and CONTRACTOR shall have no recourse against the OWNER for payment of any premiums or assessments for any deductibles, as all such premiums and deductibles are the sole responsibility and risk of the CONTRACTOR;
- C. Approval, disapproval or failure to act by the OWNER regarding any insurance supplied by the CONTRACTOR (or any subcontractors) shall not relieve the CONTRACTOR of full responsibility or liability for damages and accidents as set forth in the Contract Documents. Neither shall the bankruptcy, insolvency or denial of liability by the insurance company exonerate the CONTRACTOR from liability; and
- D. No special payments shall be made for any insurance that the CONTRACTOR and subcontractors are required to carry; all are included in the Contract Price and the Contract unit prices. Any of such insurance policies required under this section may be written in combination with any of the others, where legally permitted, but none of the specified limits may be lowered thereby.

V. OWNERS RIGHTS AND RESPONSIBILITIES

MONTHLY ESTIMATE, PARTIAL PAYMENTS AND FINAL PAYMENTS

- 5.1 Progress and final payments shall be paid to the Contractor based upon the progress of the Project as indicated by the approved Applications for Payment, certificates of acceptance, or Certificates for Payment, that include an approved Schedule of Values that will be submitted by the CONTRACTOR to the OWNER prior to the commencement of the Work and in accordance with the following:

5.2 MONTHLY ESTIMATES

The CONTRACTOR shall deliver to the OWNER an itemized Application for Payment that shall include the work completed, materials stored at the Project site but not incorporated into the work, materials ready to be installed and stored at another agreed location, and the percentage of Work completed, through the 20th day of each month, on an Application for Payment with a schedule of values previously submitted by the Contractor and approved by the Owner. Prior to release of funds in connection with any Application for Payment, the Owner may request, and the Contractor must provide, properly executed statements of full or partial releases of claims acceptable to Owner in form and content, for all persons or entities supplying labor or materials to the Project.

5.2.1 The Application for Payment is a representation by the CONTRACTOR to the OWNER that the construction has progressed to the point indicated, the quality of the Work covered by the application is in accordance with the Contract Documents, and the Contractor is entitled to payment in the amount requested.

5.2.2 INSPECTION AND PARTIAL PAYMENTS

Whenever the CONTRACTOR shall submit an Application for Payment to the OWNER for work performed by the CONTRACTOR, the CONTRACTOR shall notify the Engineer that the improvement is ready for inspection. The Engineer shall then make such inspection, and will have the authority to reject work that does not conform to the Contract Documents. If the work is satisfactory and in accordance with the specifications and Contract Documents, the Engineer shall issue a Certificate for Payment.

5.2.3 Within thirty (30) days of the Owner's receipt of a properly submitted and correct Application for Payment, and the issuance of a Certificate for Payment, the Owner shall make payment to the Contractor, in the amount approved by the Owner less 5% retainage. Such payment shall be adjusted for work that is incomplete or not in accordance with the Contract Documents or that is the subject of a separate contract, or subcontract or supplier claim or lien against the Contractor or the payment bonds for the project.

5.2.4 No partial or final payment or the entire use or occupancy of the Project by the OWNER shall be considered acceptance of work that does not strictly comply with the Contract Documents or release the CONTRACTOR of any of his responsibilities under the Contract.

5.2.5 PAYMENT FOR LABOR AND MATERIAL; NO LIENS

The CONTRACTOR for himself or any of his subcontractors shall pay all indebtedness which may become due to any person, firm or corporation having furnished labor, material or both in the performance of this Contract. It shall be the responsibility of each person, firm or corporation claiming to have furnished labor, materials or both, in connection with this Contract, to protect his or its interest in the manner prescribed by applicable laws of the State of Texas, provided, however, that as this Contract provides for a public works project, no lien of any kind shall ever exist or be placed against the Work or any portion thereof, or any public funds or retainage held by the OWNER; and any subcontractor shall look solely to the CONTRACTOR and the payment bond surety, and not the OWNER, for payment of any outstanding amounts due for labor, materials or any other indebtedness in connection with the Work. However, the OWNER may, at any time prior to making final payment, require the CONTRACTOR to furnish a Consent of Surety to any payment due the CONTRACTOR for completed work and may, at the discretion of the OWNER or the request of the Surety, make the check jointly payable to the CONTRACTOR and the Surety. The Owner shall have no obligation under this Agreement to pay or to be responsible in any way for payment to any Engineer, another design professional, contractor, subcontractor or supplier performing portions of the Work, pursuant to a contract with the Contractor.

5.2.6 PAYMENT WITHHELD

In addition to express provisions elsewhere contained in the contract, the OWNER may withhold from any payment otherwise due the CONTRACTOR such amount as determined necessary to protect the OWNER'S interest, or, if it so elects, may withhold or retain all or a portion of any progress payment or refund payment on account of:

- A. unsatisfactory progress of the Work not caused by conditions beyond the CONTRACTOR'S control,
- B. defective work not corrected,
- C. CONTRACTOR'S failure to carry out instructions or orders of the OWNER or his representative,
- D. a reasonable doubt that the Contract can be completed for the balance then unpaid,
- E. work or execution thereof not in accordance with the Contract Documents,
- F. claim filed by or against the CONTRACTOR or reasonable evidence indicating probable filing of claims,
- G. failure of the CONTRACTOR to make payments to subcontractor or for material or labor,
- H. damage to another contractor,
- I. unsafe working conditions allowed to persist by the CONTRACTOR,

J. failure of the CONTRACTOR to provide work schedules as required by the OWNER,

K. use of subcontractors without the OWNER'S approval or,

L. failure of the CONTRACTOR to keep current as-built record drawings at the job site or to turn same over in completed form to the OWNER.

When the above grounds are removed, payment shall be made for amounts withheld because of them, and OWNER shall never be liable for interest on any delayed or late payment.

5.2.7 PAYMENT FOR EXTRA WORK

The Extra Work done by the CONTRACTOR as authorized and approved by the Engineer shall be paid for in the manner hereinafter described, and the compensation thus provided shall be accepted by the CONTRACTOR as payment in full for all labor, materials, tools, equipment and incidentals and all superintendents' and timekeepers' services, all insurance, bond and all other overhead expense incurred in the performance of the Extra Work.

Payment for Extra Work shall be made by one of the following methods:

A. Method "A" — by unit prices agreed on in writing by the OWNER and CONTRACTOR before said Extra Work is commenced, subject to all other conditions of the contract.

B. Method "B" — by lump sum price agreed on in writing by the OWNER and the CONTRACTOR before said Extra Work is commenced, subject to all other conditions of the contract.

5.2.8 SUBSTANTIAL COMPLETION

The Project will be considered substantially complete when the OWNER can utilize the Project for its intended purpose and the Work is in conformance with the Contract Documents.

5.3 APPLICATION FOR FINAL PAYMENT.

Upon full performance of all the Contract Work and the full performance of all the provisions of the Contract, the CONTRACTOR shall submit a final application for payment to the OWNER, the CONTRACTOR shall notify the Engineer that the improvement is ready for inspection. All warranties and guaranties required of the CONTRACTOR by the Contract Documents shall be assembled and delivered by the CONTRACTOR to the OWNER as Part of the final Application for Payment. The Contractor will assign to the Owner all manufacturer's warranties relating to materials and labor used in the work and will perform the Work in such a manner as to preserve all such manufacturer's

warranties. The CONTRACTOR will deliver a certificate evidencing that insurance and bonds required by the Contract Documents will remain in full force and effect pursuant to the requirements of the Contract. The final Certificate for Payment will not be issued until all such warranties and guaranties have been received and accepted by the Owner, and a Certificate of Acceptance is issued by the Engineer.

5.3.1 FINAL INSPECTION AND ACCEPTANCE

Whenever the improvements provided for by the Contract shall have been completely performed on the part of the CONTRACTOR, the CONTRACTOR shall notify the OWNER, and Engineer that the improvement is ready for final inspection. The Engineer shall then make such final inspection, and if the work is satisfactory and in accordance with the specifications and Contract Documents, the CONTRACTOR shall be issued a certificate of acceptance.

5.3.2 FINAL PAYMENT

Whenever the improvements provided for by the Contract shall have been completely performed on the part of the CONTRACTOR, as evidenced in the certificate of acceptance, and all required submissions provided to the OWNER, a final estimate showing the value of the work shall be prepared by the Engineer as soon as the necessary measurements and computations can be made. All prior estimates upon which payments have been made are subject or necessary corrections or revisions in the final payment. The amount of this final estimate, less any sums that have been previously paid, or deducted under the provisions of the Contract, shall be paid the CONTRACTOR within 30 days after the final acceptance, provided that the CONTRACTOR has furnished to the OWNER a consent of surety and an affidavit or other satisfactory evidence that all indebtedness connected with the Work and all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished for and used in the performance of the work have been paid or otherwise satisfied, or that the person or persons to whom the same may respectively be due have consented to such final payment.

The acceptance by the CONTRACTOR of the final payment as aforesaid shall operate as and shall be a release to the OWNER from all claims or liabilities under the Contract, including all subcontractor claims, for anything done or furnished or relating to the Work under the Contract or for any act or neglect of said OWNER relating to or connected with the Contract.

All warranties and guarantees shall commence from the date of the certificate of acceptance. No interest shall be due the CONTRACTOR on any partial or final payment or on the retainage.

5.3 MODIFICATIONS TO CONTRACT WORK OR TIME OF PERFORMANCE

5.3.1 OWNER'S RIGHT TO TEMPORARILY SUSPEND WORK

5.3.2 REASONS FOR SUSPENSION

The OWNER shall have the right by written order to temporarily suspend the work, in whole or in part, whenever, in the judgment of the OWNER, such temporary suspension is required:

- A. in the interest of the OWNER generally,
- B. due to government or judicial controls or orders which make performance of this contract temporarily impossible or illegal,
- C. to coordinate the work of separate contractors at the job site,
- D. to expedite the completion of a separate contract even though the completion of this particular Contract may be thereby delayed,
- E. because of weather conditions unsuitable for performance of the Work, or
- F. because the CONTRACTOR is proceeding contrary to contract provisions or has failed to correct conditions considered unsafe for workmen.

The written order of the OWNER to the CONTRACTOR shall state the reasons for suspending the work and the anticipated periods for such suspension. Upon receipt of the OWNER'S written order, the CONTRACTOR shall suspend the work covered by the order and shall take such means and precautions as may be necessary to properly protect the finished and partially finished work, the unused materials and uninstalled equipment, including the providing of suitable drainage about the work and erection of temporary structures where necessary. The CONTRACTOR shall not suspend the Work without written direction from the OWNER and shall proceed with the work promptly when notified by the OWNER to resume operations.

5.3.3 NO ADDITIONAL COMPENSATION

No additional compensation shall be paid to the CONTRACTOR for a temporary suspension of the Work by the OWNER or otherwise where same is caused by the fault of the CONTRACTOR. Where such temporary suspension is not due to the fault of the CONTRACTOR, he shall be entitled to:

A. an equitable extension of working time for the completion of the work, not to exceed the delay caused by such temporary suspension, as determined by the OWNER; and

B. the actual and necessary costs of properly protecting the finished and partially finished work, unused materials and uninstalled equipment during the period of the ordered suspension as determined by the OWNER as being beyond the Contract requirements, such costs, if any, to be determined pursuant to the terms of the Contract; and

C. where the CONTRACTOR elects to move equipment from the job site and then return it to the site when the work is ordered resumed, the actual and necessary costs of these moves, in an amount determined by the OWNER pursuant to the terms of the Contract.

5.3.4 USE OF COMPLETED PORTIONS OF WORK

The OWNER may, after written notice to the CONTRACTOR, and without incurring any liability for increased compensation to the CONTRACTOR, take over and use any completed portion of the Work prior to the final completion and acceptance of the entire work included in the Contract, and notwithstanding that the time allowed for final completion has not expired. The OWNER and CONTRACTOR agree that occupancy of portions of the Work by the OWNER shall not in any way evidence the substantial completion of the entire work or signify the OWNER's acceptance of the Work.

The CONTRACTOR shall not object to, nor interfere in any way with, such occupancy or use after receipt of the OWNER'S written notice. Immediately prior to such occupancy and use, the OWNER shall inspect such portion of the Work to be taken over and shall furnish the CONTRACTOR a written statement of the work, if any, still to be done on such part. The CONTRACTOR shall promptly thereafter complete such unfinished work to permit occupancy and use on the date specified in the OWNER'S written order, unless the OWNER shall permit specific items of work to be finished after the occupancy and use by the OWNER.

In the event the CONTRACTOR is unreasonably delayed by the OWNER exercising its rights under this section, the CONTRACTOR may submit a request for an extension of time; CONTRACTOR'S sole remedy for an unreasonable delay shall be an extension of time and shall not be entitled to any additional compensation.

5.4 COMMENCEMENT; TIME OF COMPLETION; DELAYS; EXTENSION OF TIME; LIQUIDATED DAMAGES

5.4.1 COMMENCEMENT; TIME OF COMPLETION

Contractor shall commence work within ten (10) consecutive calendar days after receiving from County a notice to proceed. Contractor agrees and covenants that the number of consecutive calendar days allowed to complete all work following a notice to proceed shall be as follows:

5.4.2. LIQUIDATED DAMAGES FOR FAILURE TO COMPLETE ON TIME

Time is of the essence in the progress and completion of this Contract. For each calendar day that any Work shall remain uncompleted after the time specified in the proposal and the Contract, or the increased time granted by the OWNER, or as equitably increased by additional work or materials ordered after the Contract is signed, the sum per day given in the following schedule, unless otherwise specified in the special provisions, shall be deducted from the monies due the CONTRACTOR:

One Hundred and 00/100 Dollars (\$100)

The sum of money thus deducted for such delay, failure or noncompletion is not to be considered as a penalty, but shall be deemed, taken and treated as reasonable liquidated damages, per calendar day that the CONTRACTOR shall be in default after the time stipulated in the Contract for completing the Work. The said amounts are fixed and agreed upon by and between OWNER and CONTRACTOR because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER in such event would sustain; and said amounts are agreed to be the amount of damages which the OWNER would sustain and which shall be retained from the monies due, or that may become due, the CONTRACTOR under this Contract; and if said monies be insufficient to cover the amount owing, then the CONTRACTOR or his surety shall pay any additional amounts due.

5.4.3 EXTENTIONS OF TIME

The CONTRACTOR shall be entitled to an extension of working time under this Contract only when claim for such extension is submitted to the OWNER in writing by the CONTRACTOR within seven days from and after the time when any alleged cause of delay shall occur, and then only

when such time is approved by the OWNER. In adjusting the Contract working time for the completion of the Project, unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including, acts of God or the public enemy, acts of the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, or delays of subcontractors due to such causes beyond their control shall be taken into consideration.

If the satisfactory execution and completion of the Contract should require work and materials in greater amounts or quantities than those set forth in the Contract, requiring more time for completion than the anticipated time, then the contract working time shall be equitably increased, but not more than in the same proportion as the cost of the additional work bears to the cost of the original work contracted for. No allowances shall be made for delays or suspension of the performance of the Work due to the fault of the CONTRACTOR.

No adjustment to working time shall be made if, concurrently with the equitable cause for delay, there existed a cause for delay due to the fault or negligence of the CONTRACTOR, his agents, employees or subcontractors; and no adjustment shall be made to the Contract Price and the CONTRACTOR shall not be entitled to claim or receive any additional compensation as a result of or arising out of any delay resulting in adjustment to the working time hereunder, including delays caused by the acts or negligence of the OWNER. Notwithstanding any other provision of the Contract Documents, all claims for extension of working time must be submitted in accordance with the provisions of this Contract, and no act of the OWNER shall be deemed a waiver or entitlement of such extension.

5.5 TERMINATION FOR CONVENIENCE OF THE OWNER

5.5.1 NOTICE OF TERMINATION

The performance of the Work under this Contract may be terminated by the OWNER in whole or from time to time in part, in accordance with this section, whenever the OWNER shall determine that such termination is in the best interest of the OWNER. Any such termination shall be effected by mailing a notice of termination to the CONTRACTOR specifying the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. Receipt of the notice shall be deemed conclusively presumed and established when the letter is placed in the United States Mail by the OWNER. Further, it shall be deemed conclusively presumed and established that such termination is made with just cause as therein stated; and no proof in any claim, demand or suit shall be required of the OWNER regarding such discretionary action.

5.5.2 CONTRACTOR ACTION

After receipt of a notice of termination, and except as otherwise directed by the OWNER or Engineer, the CONTRACTOR shall:

- A. stop work under the Contract on the date and to the extent specified in the notice of termination;
- B. place no further orders or subcontracts for materials, services or facilities except as may be necessary for completion of such portion the Work under the Contract as is not terminated;
- C. terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the notice of termination;
- D. transfer title to the OWNER and deliver in the manner, at the times, and to the extent, if any, directed by the OWNER or Engineer:
 - 1. the fabricated or unfabricated parts, work in process, completed work, supplies and other material produced as a part of, or acquired in connection with the performance of, the work terminated by the notice of termination; and
 - 2. the completed or partially completed plans, drawings, information and other property which, if the Contract had been completed, would have been required to be furnished to the OWNER.
- E. complete performance of such part of the work as shall not have been terminated by the notice of termination; and
- F. take such action as may be necessary, or as the Engineer may direct, for the protection and preservation of the property related to its Contract which is in the possession of the CONTRACTOR and in which the OWNER has or may acquire an interest.

At a time not later than 30 days after the termination date specified in the notice of termination, the CONTRACTOR may submit to the OWNER a list, certified as to the quantity and quality, of any or all items of termination inventory not previously disposed of, exclusive of items the disposition of which has been directed or authorized by the Engineer. Not later than 15 days thereafter, the OWNER shall accept title to such items and remove them or enter into a storage agreement covering the same, provided that the list submitted shall be subject to verification by the Engineer upon removal of the items, or, if the items are stored, within 45 days from the date of submission of the list, and provided that any necessary adjustments to correct the list as submitted shall be made prior to final settlement.

5.5.3 TERMINATION CLAIM

Within 60 days after notice of termination, the CONTRACTOR shall submit his termination claim to the Engineer and the OWNER in the form and with the certification prescribed herein. Unless one or more extensions in writing are granted by the OWNER upon request of the CONTRACTOR, made in writing within such 60-day period or authorized extension thereof, any and all such claims shall be conclusively deemed waived. The termination claim shall (1) list all Contract Work which the CONTRACTOR has completed but for which the CONTRACTOR asserts it has not been paid, including any retainage; (2) list of all fabricated or unfabricated parts, work in process, completed work, supplies and other material produced as a part of, or acquired in connection with the performance of the Contract and the itemized cost for each such fabricated or unfabricated part, work in process, completed work, supplies and other material; (3) list all costs and expenses saved as a result of the termination of the Contract. The termination claim must include a copy of all invoices for fabricated or unfabricated parts, supplies and other material produced as a part of, or acquired in connection with the performance of the Contract for which the CONTRACTOR seeks compensation; all invoices for any subcontractors providing services related to the Contract; and (3) evidence of payment of all material suppliers and subcontractors, together with CONTRACTOR's certification that all such-material suppliers and subcontractors have been fully paid together with executed lien releases from each such material supplier and subcontractor. The termination claim may not include any request for payment of Extra Work for which a Change Order has not been issued or for which the CONTRACTOR has not fully and timely complied with the provisions of section 2.3 of this Contract.

5.5.4 AMOUNTS

The CONTRACTOR and OWNER may agree upon the whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of the total or partial termination of work pursuant hereto, provided that such agreed amount or amounts shall never exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract Price of work not terminated. The contract shall be amended accordingly, and the CONTRACTOR shall be paid the agreed amount. No amount shall be due for lost or anticipated profits. Nothing prescribing the amount to be paid to the CONTRACTOR in the event of failure of the CONTRACTOR and the OWNER to agree upon the whole amount to be paid to the CONTRACTOR by reason of the termination of work pursuant to this section, shall be deemed to limit, restrict or otherwise determine or affect the amount or amounts which may be agreed upon to be paid to the CONTRACTOR pursuant to this paragraph.

5.5.5 FAILURE TO AGREE

In the event of the failure of the CONTRACTOR and the OWNER to agree, as provided herein, upon the whole amount to be paid to the CONTRACTOR by reason of the termination of work pursuant to this section, the OWNER shall determine, on the basis of information available to it, the amount, if any, due to the CONTRACTOR by reason of the termination and shall pay to the CONTRACTOR the amounts determined. No amount shall be due for lost or anticipated profits.

5.5.6 DEDUCTIONS

In arriving at the amount due the CONTRACTOR under this section, there shall be deducted (a) all unliquidated advance or other payments on account theretofore made to the CONTRACTOR, applicable to the terminated portion of this contract; (b) any claim which the OWNER may have against the CONTRACTOR in connection with this Contract; and (c) the agreed price for or the proceeds of sale of any materials, supplies or other things kept by the CONTRACTOR or sold, pursuant to the provisions of this clause, and not otherwise recovered by or credited to the OWNER.

5.5.7 ADJUSTMENT

If the termination hereunder be partial prior to the settlement of the terminated portion of this Contract, the CONTRACTOR may file with the Owner a request in writing for an equitable adjustment of the price or prices specified in the Contract relating to the continued portion of the Contract (the portion not terminated by the notice of termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices; nothing contained herein, however, shall limit the right of the OWNER and the CONTRACTOR to agree upon the amount or amounts to be paid to the CONTRACTOR for the completion of the continued portion of the Contract when said contract does not contain an established contract price for such continued portion.

5.5.8 NO LIMITATION OF RIGHTS

Nothing contained in this section shall limit or alter the rights which the OWNER may have for termination of this Contract under any other provision of this Contract or any other right which OWNER may have for default or breach of contract by CONTRACTOR.

5.6 CONTRACTOR DEFAULT: OWNER'S RIGHT TO SUSPEND WORK AND ANNUL CONTRACT

The Work or any portion of the Work under contract shall be suspended immediately on written order of the OWNER declaring the CONTRACTOR to be in default. A copy of such notice shall be served on the CONTRACTOR'S surety. The contract may be annulled by the OWNER for any good cause or causes, among others of which special reference is made to the following:

A. failure of the CONTRACTOR to start the work within 10 days from date specified in the written work order issued by the OWNER to begin the work;

B. evidence that the progress of the work being made by the CONTRACTOR is insufficient to complete the work within the specified working time;

C. failure of the CONTRACTOR to provide sufficient and proper equipment, materials or construction forces for properly executing the Work;

D. evidence that the CONTRACTOR has abandoned the Work or discontinuance of the performance of the Work or any part thereof and failure to resume performance within a reasonable time after notice to do so;

E. evidence that the CONTRACTOR has become insolvent or bankrupt, or otherwise financially unable to carry on the Work;

F. deliberate failure on the part of the CONTRACTOR to observe any requirements of the specifications or to comply with any orders given by the Engineer as provided for in the specifications;

G. failure of the CONTRACTOR to promptly make good any defects in materials or workmanship, or any defects of any nature, the correction of which has been directed in writing by the OWNER;

H. evidence of collusion for the purpose of illegally procuring a contract or perpetrating fraud on the OWNER in the construction of work under contract;

I. repeated violations of safe working procedures;

J. the filing by the CONTRACTOR of litigation against the OWNER prior to final completion of the Work. When the Work is suspended for any of the causes itemized above, or for any other cause or causes, the CONTRACTOR shall discontinue the Work or such part thereof as the OWNER shall designate, whereupon the surety may either at its option assume the Contract or that portion thereof which the OWNER has ordered the CONTRACTOR to discontinue and perform the same or, with the written consent of the OWNER, sublet the same, provided, however, that the surety shall exercise its option within two weeks after the written notice to discontinue the work has been served upon the CONTRACTOR and upon the surety or its authorized agents. The surety in such event shall assume the CONTRACTOR'S place in all respects and shall be paid by the OWNER for all work performed by it in accordance with the terms of the Contract, but in no event shall such payments exceed the contract amount, regardless of the cost to the surety to complete the Work.

In the event that the surety assumes the CONTRACTOR'S place, duties and responsibilities in the Contract, all monies remaining due the CONTRACTOR at the time of his default shall thereupon become due and payable to the surety as the work progresses, subject to all terms of the Contract. In case the surety does not, within the hereinabove specified time, exercise its obligation to assume the Contract or that portion thereof which the OWNER has ordered the CONTRACTOR to discontinue, then the OWNER shall have the power to complete by contract or otherwise, as it may determine, the Work herein described or such part thereof as it may deem necessary; and the CONTRACTOR hereto agrees that the OWNER shall have the right to take possession of or use any or all of the materials, plans, tools, equipment, supplies and property of every kind provided by the CONTRACTOR for the purpose of the Work and to procure other tools, equipment and materials for the completion of the same and to charge to the account of the CONTRACTOR the expense of said contract for labor, materials, tools, equipment and expenses incident thereto. The expense so charged shall be deducted by the OWNER out of such monies as may be due or may at any time thereafter become due the CONTRACTOR under and by virtue of the Contract or any part thereof.

The OWNER shall not be required to obtain the lowest bid for the work of completing the Contract, but the expenses to be deducted shall be the actual cost of such work. In case such expense is less than the sum which would have been payable under the contract if the same had been completed by the CONTRACTOR, then in such case the OWNER may pay the CONTRACTOR the difference in the cost, provided that the CONTRACTOR shall not be entitled to any claim for damages or for loss of anticipated profits.

In case such expense shall exceed the amount which would have been payable under the Contract if the same had been completed by the CONTRACTOR, the CONTRACTOR and his surety shall pay the amount of the excess to the OWNER on notice from the OWNER for excess due including any costs incurred by the OWNER, such as inspection, legal fees and liquidated damages. When any particular part of the Work is being carried out by the OWNER by contract or otherwise under the provisions of this section, the CONTRACTOR shall continue the remainder of the Work in conformity with the terms of the contract and in such manner as not to hinder or interfere with the performance of workmen employed as above provided by the OWNER or surety.

5.7 SUSPENSION BY COURT ORDER AGAINST THE OWNER

The CONTRACTOR shall suspend such part or parts of the Work pursuant to a court order issued against the OWNER and shall not be entitled to additional compensation by virtue of such court order; neither shall the CONTRACTOR be liable to the OWNER in the event the Work is suspended by such court order, unless such suspension is due to the fault or negligence of the CONTRACTOR. A

delay of the CONTRACTOR due to a court order against the OWNER, or due to the OWNER'S failure to secure right-of-way at the time required or because of a conflict of a utility with the Work, shall not be cause for additional compensation for damages sustained by the CONTRACTOR, but may be a cause for extension of contract working time only. The CONTRACTOR'S sole remedy for any suspensions of the Work is an equitable extension of time to perform the Work.

5.8 NO WAIVER OF RIGHTS OR ESTOPPEL

The OWNER, or any officer or agent thereof, shall not be precluded at any time, either before or after final completion and acceptance of the Work and final payment therefore from:

A. showing the true and correct amount, classifications, quality and character of the Work done and materials furnished by the CONTRACTOR or any other person under this Contract, or from showing at any time that any determination, return, decision, approval, order, letter, payment or certification is untrue and incorrect or improperly made in any particular, or that the Work or the materials or any parts thereof do not in fact conform to the contract requirements; and (b) demanding the recovery from the CONTRACTOR of any overpayments made to him, or such damages as the OWNER may sustain by reason of the CONTRACTOR'S failure to perform each and every part of this Contract in strict accordance with its terms; or both.

VI. AUTHORITY OF THE ENGINEER

6.1 All work shall be performed in a good and workmanlike manner and to the satisfaction of the Engineer. The Engineer shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rate of progress of the work, sequence of the construction, interpretation of the plans and specifications, acceptable fulfillment of the Contract, compensation, mutual rights between contractors under these specifications and suspension of the Work. He shall determine the amount and quality of work performed and materials furnished, and his decisions and estimates shall be final. His estimate in such event shall be a condition precedent to the right of the CONTRACTOR to receive money due him under the Contract.

6.2 OWNER'S REPRESENTATIVES

Where the Contract Documents indicate that determinations, directions or approvals shall be made by the OWNER or "Owner's representatives," this shall mean the OWNER acting directly, or through duly authorized persons acting within the limit of authority delegated to them. Any determination, direction or approval of such authorized representatives shall be subject to review by the OWNER. For purposes of administering the schedule or the payment provisions

of this Contract the Engineer may act as the Owner's representative for purposes of approving payments, changes, scheduling, or acceptance of the Work, at the OWNER'S discretion.

6.3 INSPECTIONS OF WORK PROGRESS

The Engineer shall visit the site at during construction of the Project as necessary as the Owner's Representative to verify that the Work is being performed in compliance with the Contract Documents and shall be given total access to the Project by the CONTRACTOR. Site visits or inspections by the Engineer shall in no way relieve the CONTRACTOR of any of its responsibilities or duties pursuant to the Contract Documents. The Engineer will neither have control over, nor be responsible for, the construction means and methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work or the Project. The CONTRACTOR shall be solely responsible for, the construction means and methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work or the Project.

6.4 CONSTRUCTION STAKES

Engineer will provide the Contractor with primary horizontal and vertical control to consist of one construction baseline and two benchmarks.

The Contractor shall take all necessary precautions to preserve any and/or all markings and staking. Payment for costs of restaking shall be the responsibility of the Contractor.

6.5 APPROVAL OF SUBMITTALS

The Engineer shall review and approve or take other appropriate action the CONTRACTOR's submittals such as Shop Drawings, Product Data and Samples, for the purpose of checking for conformance with the Contract Documents. The Engineers review of the submittals shall not relieve the CONTRACTOR of any of its obligations to perform the Work in strict compliance with the Contract Documents. The Engineer's review shall not be considered approval of safety precautions, means and methods, techniques, sequences or procedures that are the responsibility of the CONTRACTOR.

VII. CLAIMS OR DISPUTES

7.1 CLAIMS AGAINST OWNER AND ACTION THEREON.

No claim against the OWNER under the Contract or for breach of the Contract or additional compensation for extra or disputed work shall be made or asserted against the OWNER under the Contract or in any court action, unless the CONTRACTOR shall have strictly complied with all requirements relating to the

giving of notice and information with respect to such claim as required by the Contract.

7.2 CLAIM AGAINST OFFICERS, EMPLOYEES OR AGENT OF THE OWNER.

No claim whatsoever shall be made by the CONTRACTOR against any, past, present or future, officer, employee or agent of the OWNER for or on account of, anything done or omitted to be done in connection with this Contract.

VIII. MISCELLANEOUS PROVISIONS

8.1 FINANCIAL INTEREST IN ANY CONTRACT BY OWNER'S OFFICERS, EMPLOYEES OR AGENTS

No officer, employee or agent of the OWNER shall have a financial interest, direct or indirect, in any contract with the OWNER or be financially interested, directly or indirectly, in the sale to the OWNER of any land, materials, supplies or services, except on behalf of the OWNER as an officer or employee. Any willful violation of this article shall constitute malfeasance in office, and any officer or employee guilty thereof shall thereby forfeit his office or position. Any violation of this article with the knowledge, expressed or implied, of the persons, partnership, company, firm, association or corporation contracting with the OWNER shall render the contract involved voidable by the OWNER.

8.2 SERVICE OF NOTICES

The OWNER and the CONTRACTOR shall each designate addresses where all notices, directions or other communication may be delivered or to which they may be mailed.

Notices to the surety or sureties on contract bonds shall be directed or delivered to the home office, or to the agent or agents who executed the bonds on behalf of the surety or sureties, or to their designated agent for delivery of notices.

Actual delivery of any such notice, direction or communication to the aforesaid places or depositing it in a postpaid wrapper addressed thereto in any post office regularly maintained by the United States Postal Service shall be conclusively deemed to be sufficient service thereof upon the above persons as of the date of such delivery or deposit.

The designated addresses may be changed at any time by an instrument in writing executed by the party changing the addresses and delivered to the other party.

Nothing herein contained shall, however, be deemed to preclude or tender inoperative the service of any notice, direction or communication upon the above parties personally or, if the CONTRACTOR be a corporation, upon any officer or director thereof.

8.3 UNLAWFUL PROVISIONS DEEMED STRICKEN

In the event a term, condition, or provision of this Agreement is determined to be void, unenforceable, or unlawful by a court of competent jurisdiction, then that term, condition, or provision shall be deleted and the remainder of the Agreement shall remain in full force and effect.

8.4 ALL LEGAL PROVISIONS INCLUDED

It is the intent and agreement of the parties to this contract that all legal provisions of law required to be inserted herein shall be and are inserted herein. If through mistake or oversight, however, any such provision is not herein inserted, or is not inserted in proper form, then upon application of either party, the contract shall be amended so as to strictly comply with the law and without prejudice to the rights of either party hereunder.

8.5 ASSIGNMENTS

The CONTRACTOR shall not assign, transfer, convey or otherwise dispose of this contract, or his right to execute it, or his right, title or interest in it or any part thereof without the previous written consent of the surety company and the written approval of the OWNER.

The CONTRACTOR shall not assign, either legally or equitably, by power of attorney or otherwise, any of the monies due or to become due under this Contract or its claim thereto without the prior written consent of the surety company and the written approval of the OWNER.

The approval of the OWNER of a particular assignment, transfer or conveyance shall not dispense with such approval to any further or other assignments.

The approval by the OWNER of any assignment, transfer or conveyance shall not operate to release the CONTRACTOR or surety hereunder from any of the Contract and bond obligations, and the CONTRACTOR shall be and remain fully responsible and liable for the defaults, negligent acts and omissions of his assignees, their agents and employees, as if they were his own.

8.6 STATE AND LOCAL SALES AND USE TAXES

The OWNER qualifies for exemption from the state and local sales and use taxes, pursuant to the provisions of Section 151.309 of the Texas Limited Sales, Excise and Use Tax Act. Therefore, the CONTRACTOR shall not pay such taxes which would otherwise be payable in connection with the performance of this Contract.

The CONTRACTOR shall issue an exemption certificate in lieu of the tax on the purchase, rental or lease of:

- A. all materials, supplies, equipment and other tangible personal property incorporated into the real property being improved; and
- B. all materials, supplies, equipment and other tangible personal property used or consumed by the CONTRACTOR in performing the Contract with the OWNER. Materials and supplies “used in the performance of a contract” include only those materials actually incorporated into the property being improved and those supplies directly used to incorporate such materials into the property being improved. Overhead supplies and supplies used indirectly or only incidental to the performance of the Contract with the OWNER are not included in the exemption.

Under “reasons said purchaser is claiming this exemption” in the exemption certificate, the CONTRACTOR must name the OWNER and the project for which the equipment, material and supplies are being purchased, leased or rented.

8.7 VENUE AND GOVERNING LAW

The parties agree that the laws of the State of Texas shall govern the interpretation, validity, performance and enforcement of this Construction Agreement, and that the exclusive venue for any legal proceeding involving this Construction Agreement shall be in Collin County, Texas.

8.8 NO WAIVER OF LEGAL RIGHTS

Inspection by the Engineer or OWNER; any order, measurement, quantity or certificate by the Engineer; any order by the OWNER for payment of money; any payment for or acceptance of any work; or any extension of time or any possession taken by the OWNER shall not operate as a waiver of any provisions of the contract or any power therein reserved to the OWNER of any rights or damages therein provided. Any waiver of any breach of contract shall not be held to be a waiver of any other or subsequent breach. The OWNER reserves the right to correct any error that may be discovered in any estimate that may have been paid and to adjust the same to meet the requirements of the Contract Documents. The OWNER reserves the right to recover by process of law sums as may be sufficient to correct any error or make good any deficiency in the Work resulting from such error, dishonesty or collusion by the CONTRACTOR or his agents, discovered in the Work after the final payment has been made.

Neither final acceptance of the Work, nor final payment shall relieve the CONTRACTOR of responsibility for faulty materials or workmanship, and the CONTRACTOR shall promptly remedy any defects due thereto and pay for any damage to other work resulting therefrom. Likewise, neither final acceptance nor final payment, nor partial or entire use or occupancy of the work by the OWNER shall constitute acceptance of work not done in accordance with the Contract Documents or relieve CONTRACTOR of liability with respect to any expressed

or implied warranties or responsibility for faulty materials or workmanship, whether same be patently or latently defective.

8.9 OBLIGATION TO PERFORM FUNCTIONS

Any failure or neglect on the part of OWNER or Engineer or inspectors to enforce provisions herein dealing with supervision, control, inspection, testing or acceptance and approval of the work shall never operate to relieve CONTRACTOR from full compliance with the Contract Documents nor render OWNER liable to CONTRACTOR for money damages, extensions of time or increased compensation of any kind.

8.10 SUCCESSORS AND ASSIGNS

Subject to the limitations upon assignment and transfer herein contained, this contract shall be binding upon and inure to the benefit of the parties hereto, their respective successors and assigns.

8.11 HEADINGS

The title and headings contained in the Contract Documents and the subject organization are used only to facilitate reference, and in no way define or limit the scope of intent of any of the provisions of this Contract.

8.12 ENTIRE AGREEMENT; AMENDMENTS; BINDING EFFECT

This Construction Agreement, including the Contract Documents and all the documents incorporated therein represents the entire and integrated agreement between the OWNER, Collin County, and the CONTRACTOR, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Construction Agreement may be amended only by written instrument signed by both, the OWNER, Collin County, and the CONTRACTOR. CONTRACTOR acknowledges that no representations have been made to it, upon which it is relying in entering into this Contract, which are not expressly set forth in the Contract Documents.

8.13 INTERPRETATION

Although this Agreement is drafted by the OWNER, Collin County, should any part be in dispute, the parties agree that this Construction Agreement shall not be construed more favorable for either party. No rule of construction requiring that ambiguities in this Contract shall be construed more favorably for either party shall apply.

8.14 EXPENSES FOR ENFORCEMENT

In the event either Party hereto is required to employ an attorney to enforce the provisions of this Agreement or is required to commence legal proceedings to enforce the provisions hereof, the prevailing Party shall be entitled to recover from the other, reasonable attorney's fees and court costs incurred in connection with such enforcement, including collection.

8.15 FORCE MAJEURE

No party shall be liable or responsible to the other party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement, when and to the extent such failure or delay is caused by or results from acts beyond the affected party's reasonable control, including, without limitation: acts of God; flood, fire or explosion; war, invasion, riot or other civil unrest; actions, embargoes or blockades in effect on or after the date of this Agreement; or national or regional emergency (each of the foregoing, a "Force Majeure Event"). A party whose performance is affected by a Force Majeure Event shall give notice to the other party, stating the period of time the occurrence is expected to continue and shall use diligent efforts to end the failure or delay and minimize the effects of such Force Majeure Event.

IN WITNESS WHEREOF, the parties have executed this Construction Agreement upon the year and date indicated beneath their signatures hereto.

CONTRACTOR:

By: _____

Date: _____

ATTEST:

Secretary

COLLIN COUNTY, TEXAS:

By: _____
Michelle Charnoski, NIGP-CPP, CPPB, Purchasing Agent

Date: _____

Collin County Commissioners Court Order No.

ATTEST:

Secretary

ACKNOWLEDGMENTS

STATE OF TEXAS §

COUNTY OF _____ §

BEFORE ME, _____ on this day personally appeared _____
_____, of _____, a _____ corporation,
known to me (or proved to me on the oath of) _____ or
through _____ (description of identity card or other document) to be the
person whose name is subscribed to the foregoing instrument and acknowledged to me
that he/she executed the same as the act and deed of the corporation, for the purposes and
consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the ___ day of _____, 20__

Notary Public, State of Texas

Printed Name

My Commission expires on the ___ day of _____, _____.

STATE OF TEXAS §

COUNTY OF COLLIN §

BEFORE ME, _____ on this day personally appeared _____
_____, Purchasing Agent of COLLIN COUNTY, TEXAS, a political
subdivision of the State of Texas, known to me (or proved to me on the oath of) _____
_____ or through _____ (description of identity card or other
document) to be the person whose name is subscribed to the foregoing instrument and
acknowledged to me that he/she executed the same as the act and deed of COLLIN
COUNTY, TEXAS, for the purposes and consideration therein expressed and in the
capacity therein stated.

GIVEN under my hand and seal of office this the _____ day of _____
_____, 20__

Notary Public, State of Texas

Printed Name

My Commission expires on the ___ day of _____, _____.

SECTION 005425 - W-9 FORM

Form **W-9**
 (Rev. December 2014)
 Department of the Treasury
 Internal Revenue Service

**Request for Taxpayer
 Identification Number and Certification**

**Give Form to the
 requester. Do not
 send to the IRS.**

Print or type See Specific Instructions on page 2.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.	
	2 Business name/disregarded entity name, if different from above	
	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner. <input type="checkbox"/> Other (see instructions) ▶ _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <i>(Applies to accounts maintained outside the U.S.)</i>
	5 Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	6 City, state, and ZIP code	
	7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number																													
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Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here	Signature of U.S. person ▶	Date ▶
------------------	----------------------------	--------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued).
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

006111 PERFORMANCE BOND

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

That _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ of the City of _____ County of _____, and State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety", a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of _____ Dollars (\$ _____) (not less than 100% of the approximate total amount of the Contract as evidenced in the proposal plus 10-percent of the stated penal sum as an additional sum of money representing additional court expenses, attorneys' fees, and liquidated damages arising out of or connected with the below identified Contract) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the _____ day of _____, 202____, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of IFB 2022-198, Construction, Exterior Repairs to Second Floor Walkway and First Floor Soffit, 900 E. Park Blvd., Plano.

CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal fully and faithfully executes the work and performance of the Contract in accordance with the plans specifications, and Contract Documents, including any extensions thereof which may be granted with or without notice to Surety, during the original term thereof, and during the life of any guaranty required under the Contract, and according to the true intent and meaning of said Contract and the plans and specifications hereto annexed, if the Principal shall repair and/or replace all defects due to faulty materials or workmanship that appear within a period of one year from the date of final completion and final acceptance of the work by OWNER; and if the Principal shall fully indemnify and save harmless the OWNER from all costs and damages which OWNER may suffer by reason of failure to so perform herein and shall fully reimburse and repay OWNER all outlay and expense which the OWNER may incur in making good any default or deficiency, then this obligation shall be void; otherwise, to remain in full force and effect; and in case said CONTRACTOR shall fail to do so, it is agreed that the OWNER may do said work and supply such materials and charge the same against said CONTRACTOR and Surety on this obligation. Provided further, that if any legal action be filed on this Bond, venue shall lie in Collin County, Texas.

"PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions Texas Government Code, Chapter 2253, as amended, and Chapter 3503 of the Texas Insurance Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the bond shall automatically be increased by the amount of any Change Order or supplemental agreement which increases the Contract price with or without notice to the Surety, but in no event shall a Change Order or Supplemental Agreement which reduces the Contract price decrease the penal sum of the Bond. And further that no change, extension of time, alteration, or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

Surety agrees that the bond provides for the repairs and/or replacement of all defects due to faulty materials and workmanship that appear within a period of one (1) year from the date of completion and acceptance of the improvement by the OWNER.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____ 202____.

WITNESS

PRINCIPAL

Printed/Typed Name _____
Title: _____
Company: _____

Address: _____

WITNESS

SURETY

Printed/Typed Name _____
Title: _____
Company: _____

Address: _____

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone Number: _____

Note: Date of Bond must NOT be prior to date of contract.

006113 PAYMENT BOND

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

That _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ of the City of _____ County of _____, and State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety", a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of _____ Dollars (\$ _____) (not less than 100% of the approximate total amount of the Contract as evidenced in the proposal) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the _____ day of _____, 202____, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of IFB 2022-198, Construction, Exterior Repairs to Second Floor Walkway and First Floor Soffit, 900 E. Park Blvd., Plano.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that the bond guarantees the full and proper protection of all claimants supplying labor and material in the prosecution of the work provided for in said Contract and for the use of each claimant, and that conversely should the Principal faithfully perform said Contract and in all respects duly and faithfully observe and perform all and singular the covenants, conditions, and agreements in and by said Contract, agreed to by the Principal, and according to the true intent and meaning of said Contract and the claims and specifications hereto annexed, and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modification to Surety being hereby waived, then this obligation shall be void; otherwise, to remain in full force and effect. Provided further, that if any legal action be filed on this Bond, venue shall lie in Collin County, Texas.

"PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions Texas Government Code, Chapter 2253, as amended, and Chapter 3503 of the Texas Insurance Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the bond shall automatically be increased by the amount of any Change Order or supplemental agreement which increases the Contract price with or without notice to the Surety and that no change, extension of time, alteration or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same, shall in anyway affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____ 202____.

WITNESS

PRINCIPAL

Printed/Typed Name _____
Title: _____
Company: _____

Address: _____

WITNESS

SURETY

Printed/Typed Name _____
Title: _____
Company: _____

Address: _____

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone Number: _____

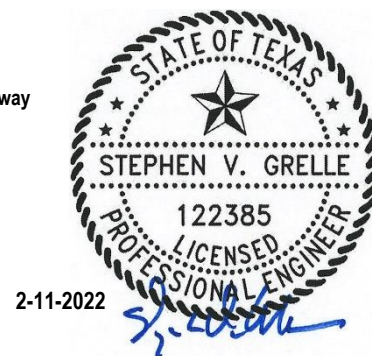
Note: Date of Bond must NOT be prior to date of contract.

SECTION 00 01 10

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Project: Structural & Waterproofing Repairs to Exterior Walkway
Location: 900 E Park Blvd, Plano, TX 75074
Client: Collin County, Texas
Engineer: Wiss, Janney, Elstner Associates, Inc.
6363 N. State Highway 161, Suite 550
Irving, Texas 75038
Texas Registered Engineering Firm F-0093



END OF SECTION

SECTION 01 22 00

UNIT PRICES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for unit price Work.

1.2 DEFINITIONS

- A. Unit price, stated on Bid Form, is price per unit of measurement for materials and services for specific Work activity. Contract Sum may be increased or decreased by Unit Price adjustment, based on difference between estimated bid quantity and actual Work quantity.

1.3 MEASUREMENT PROCEDURES

- A. Measure Work performed on unit price basis and maintain record of location and unit price quantity of each repair installed. Unless stated otherwise by Engineer, document unit price quantities with plan view or elevation drawings, or both, and tables with required data, cross-referenced to drawings. Submit recorded information to Engineer on a regular basis but at least monthly.
- B. Engineer will evaluate accuracy of measurements and approve final quantities. Notify Engineer at least two days before Work will be performed that might make this verification difficult or impossible.
- C. Notify Owner and Engineer at once in writing of unit price work that deviates materially from Unit Price basis for payment and for which adjustment in Unit Price is desired.
 - 1. Measure and quantify all such deviations, and allow Engineer to verify accuracy of measurements, prior to performing Work that might make verification difficult or impossible.
 - 2. Adjustments will be considered only if all repairs have been measured and all deviations, both plus and minus, have been included in determination of average deviation from Unit Price basis for payment.

1.4 PAYMENT PROCEDURES

- A. As part of Project closeout, Contract Sum will be modified by unit price times variation in actual Work quantity from estimated quantity included in Bid Form, based on quantities measured by Contractor and approved by Engineer.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for submitting shop drawings, product data, samples, and other submittals.

1.2 SUBMITTALS

- A. General:
1. Format:
 - a. PDF Submittals: Prepare submittals as a PDF package, incorporating complete information into one PDF file for each product or material. Name each PDF file with submittal number
 - b. Paper submittals: Include a permanent label or mark-up on the submittal or cover sheet, with the following information.
 2. Submittal Identification: Include the following information in each submittal.
 - a. Project name.
 - b. Date.
 - c. Names of Engineer, Contractor, subcontractor, manufacturer, supplier, and firm or entity that prepared submittal, as appropriate.
 - d. Identification information, such as the number and title of the appropriate Specification section, Drawing number and detail references, location(s) where product is to be installed, or other necessary information.
 - e. Label each submittal with the six digit Specification section number followed by a decimal point and then sequential number (e.g., 042000.01). On resubmittals, include alphabetic suffix after another decimal point (e.g., 042000.01.A).
 - f. Provide space approximately 4 inches by 4 inches on or beside the label or title block for the Contractor's approval stamp and the action stamp of the Engineer.
 3. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not use reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements outlined in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions, including notation of those established by field measurement.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Shopwork manufacturing instructions.
 - f. Templates and patterns.
 - g. Schedules.
 - h. Notation of coordination requirements.
 - i. Relationship to adjoining construction clearly indicated.
 - j. Seal and signature of professional Engineer if specified.

2. Paper Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches. Prints shall have white background and dark lettering and line work.
 - a. Submit number of copies required by the Contractor plus two that will be retained by the Engineer. Mark up and retain one returned copy as a Project Record Document.

- C. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. Clearly mark each copy of the submittal to show which products and options are applicable. Delete information which is not applicable. Supplement standard information with project-specific information.
 2. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts, product specifications, schematic drawings, installation instructions, and written recommendations.
 - b. Compliance with referenced standards.
 - c. Testing by recognized testing agency.
 3. Submit the number of copies required by the Contractor plus two that will be retained by the Engineer, or digital file. Mark up and retain one returned copy as a Project Record Document.

- D. Samples: Submit physical samples to illustrate functional and aesthetic characteristics of the product, for review of materials and workmanship, for compatibility with other elements, and for comparison with the actual installed elements.
 1. Samples shall be of sufficient size to show the general visual effect.
 2. Include sets of at least three samples that show the full range of color, pattern, texture, graining, and finish.
 3. Transmit samples that contain multiple, related components, such as accessories, together in one submittal package.
 4. Identification: Attach a label on an unexposed side of each sample that includes the following:
 - a. Generic description of sample.
 - b. Product name, name of manufacturer, and sample source.
 - c. Number and title of appropriate Specification section.
 5. Samples for Initial Selection: Submit three full sets of units or sections of units from the supplier's product line, showing the full range of colors, textures, and patterns available. Engineer will retain two sets and return one set with the options selected.
 6. Samples for Verification: Submit full-size units or samples of the size indicated, prepared from the same material to be used for the Work, cured and finished in the manner specified, and physically identical with material or product proposed for use, and that show the full range of color and texture variations expected.
 - a. Submit the number of samples required by the Contractor plus two that will be retained by the Engineer. Mark up and retain one returned sample as a Project Record Document.
 7. Maintain approved samples at the Site, available for quality-control comparisons during construction. Samples may be used to determine final acceptance of construction associated with the sample.

- E. Delegated Design:

1. Where required by the Contract Documents, in addition to shop drawings, product data, and other required submittals, submit a statement, signed and sealed by responsible design professional, for each product and system specifically assigned to the Contractor to be designed or certified by a design professional.
 - a. Indicate that products and systems comply with performance and design criteria in the Contract Documents.
 - b. Include a list of codes, loads, and other factors used in performing these services, and signed and sealed design calculations where required.

1.3 SUBMITTAL PROCEDURE

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
- B. Coordinate the preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, submittals requiring concurrent review, and related activities that require sequential activity.
 2. Allow sufficient time for submittal and resubmittal review. Failure to provide sufficient time for submittal and resubmittal reviews will not be a basis for extension of the Contract Time.
- C. Review Time:
 1. Allow five business days for the review of each submittal and resubmittal.
 2. Allow additional time if coordination with subsequent submittals is required. The Engineer will advise the Contractor when the submittal being processed must be delayed for coordination.
 3. Time for review shall commence when the Engineer receives the submittal.
- D. Contractor Review:
 1. Review each submittal, coordinate with other Work, and check for compliance with the Contract Documents. Verify field dimensions and conditions. Identify variations from the Contract Documents and product or system limitations that may be detrimental to the successful performance of completed Work. Note corrections.
 2. Before submitting to the Engineer, stamp or electronically mark-up, with a uniform approval stamp, including the reviewer's name; the date of Contractor's approval; and a statement certifying that the submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 3. Submittal Log: Maintain submittal log that lists submitted items per specification section. Record dates submitted, dates returned, and disposition of each item based on Engineer's review. Submit final log showing approved materials at Substantial Completion.
- E. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using AIA Document G810.
 1. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
 2. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
- F. Engineer Action:

1. Engineer will not review submittals that are received from sources other than the Contractor or that do not bear the Contractor's approval stamp, and will return them without action to the Contractor.
 2. Engineer will review each submittal for conformance with the design concept of the Project and compliance with the Contract Documents. Engineer will make marks to indicate corrections or modifications required, and stamp or electronically mark-up with an action stamp. The action stamp will include the reviewer's name, date of review, and required Contractor action. Contractor actions may include making corrections or modifications to the submittal or resubmitting the submittal, or both.
- G. Resubmittals: Make resubmittals in the same form and number of copies as the initial submittal.
1. Note the date and content of previous submittal.
 2. Note the date and content of the revision in the label or title block and clearly indicate the extent of the revision and changes made.
 3. Resubmit until the Engineer indicates that no resubmittal is required.
- H. Distribution: Furnish final copies (paper or digital) to the Site file, record documents file, manufacturers, subcontractors, suppliers, fabricators, installers, public authorities having jurisdiction, and others as necessary for performance of construction activities. Show the distribution on the transmittal forms.
- I. For construction, use only the final submittals with the Engineer's action stamp.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated, and do not relieve the Contractor of responsibility for compliance with requirements of the Contract Documents.
 - 1. Specified tests, inspections, and related actions do not limit the Contractor's other quality assurance and quality control procedures that facilitate compliance with requirements of the Contract Documents.
 - 2. Requirements for the Contractor to provide quality assurance and quality control services required by the Engineer, Owner, or public authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections:
 - 1. See sections in Divisions 2 through 32 for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality Assurance Services: Activities, actions, and procedures performed before and during the execution of the Work to guard against defects and deficiencies and substantiate that the proposed construction will comply with requirements.
- B. Quality Control Services: Tests, inspections, procedures, and related actions during and after the execution of the Work to evaluate that the actual products incorporated into the Work and the completed construction comply with requirements. Services do not include contract enforcement activities performed by the Engineer.

1.3 COMPLIANCE CRITERIA

- A. General: If compliance with two or more standards is specified and standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement or obtain clarification from Engineer.
- B. Minimum Quantity or Quality Level: Quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.
- C. Refer uncertainties to the Engineer for a decision before proceeding.

1.4 SUBMITTALS

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on the performance of the Work.

1.5 QUALITY ASSURANCE

- A. Mockups: Full-size, physical assemblies that are constructed on-site.
1. Mockups are used to verify selections made under sample submittals; to demonstrate proposed range of aesthetic effects and workmanship and, where indicated, qualities of materials and execution; and to review construction, coordination, testing, or operation.
 2. Do not construct mockups until corresponding product data, shop drawings, samples, and other submittals have been approved.
 3. Construct mockups for each form of construction and finish required, in accordance with applicable Specification section or as shown on Drawings, using materials indicated for completed Work.
 - a. Construct mockups at location and of size indicated on Drawings, under same environmental conditions expected during Work.
 - b. Use equipment, materials, and procedures proposed for use on Project.
 4. Provide access to mockups.
 5. Engineer will observe mockup construction. Notify Engineer five business days in advance of dates and times when mockups will be constructed.
 6. Portions of mockup that will be concealed shall be inspected by Engineer prior to concealment and, when approved, photographed for future reference.
 7. If Engineer or Owner determines mockup does not comply with requirements, modify mockup or construct new mockup at no additional cost to Owner until mockup is approved. Remove and replace mockups that are not approved.
 8. Do not order materials; or proceed with fabrication or construction on portions of Work requiring mockups or affected by construction represented by mockups, until mockup has been approved by Engineer and Owner.
 9. Maintain approved mockups during construction in undisturbed condition as standard for judging completed Work.
 10. Demolish and remove mockups when directed by Owner, unless otherwise indicated.
 11. Where a specific payment item has been designated for mockup(s) on the Bid Form, payment for that item will not be released until mockup has been fully approved by Engineer and Owner.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION

3.1 QUALITY CONTROL

- A. Owner Responsibilities: Where quality control services are indicated as the Owner's responsibility, the Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names and contact information of testing agencies engaged and descriptions of types of testing and inspecting they are engaged to perform.

2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to the Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to the Owner, and testing and inspecting requested by the Contractor and not required by the Contract Documents, are the Contractor's responsibility. Unless otherwise indicated, provide quality control services specified and those required by public authorities having jurisdiction, whether specified or not.
1. Where services are indicated as the Contractor's responsibility, engage a qualified testing agency to perform these services.
 - a. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify the testing agency at least twenty-four hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality control services are indicated as the Contractor's responsibility, submit a certified written report, in duplicate, of each quality control service.
 4. Submit additional copies of each written report directly to public authorities having jurisdiction, when they so direct.
 5. Retesting/Re-inspecting: Regardless of whether the original tests or inspections were the Contractor's responsibility, provide quality control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- C. Testing Agency Responsibilities: Cooperate with the Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Determine location from which test samples will be taken and in which in-situ tests are conducted.
 2. Notify the Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
 4. Submit a certified written report of each test, inspection, and similar quality control service.
 5. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
 6. Do not perform any duties of the Contractor.
- D. Coordination: Coordinate the sequence of activities to accommodate the required quality assurance and quality control services with a minimum of delay and to avoid the necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
 2. Notify the testing agency sufficiently in advance of operations to permit assignment of personnel.
- E. Associated Services: Cooperate with the Engineer and testing agencies performing required tests, inspections, and similar quality control services, and provide reasonable auxiliary services as requested. Provide the following:
1. Submittals of concrete mix designs and other materials and products necessary for the testing agency to test and evaluate field work.
 2. Access to the Work.

3. Incidental labor and facilities necessary to facilitate tests and inspections.
 4. Adequate quantities of representative samples of materials that require testing and inspecting. Assist the testing agency in obtaining samples.
 5. Facilities for storage and field curing of test samples.
 6. Security and protection for samples and for testing and inspecting equipment at Site.
- F. Repair and Protection:
1. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - a. Provide materials and comply with installation requirements specified in other sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 2. Protect construction exposed by or for quality control services.
 3. Repair and protection are the Contractor's responsibility, regardless of assignment of responsibility for quality control services.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Requirements for temporary utilities, support facilities, and protection and controls.
- B. Pay for temporary utilities, support facilities, and protection and control measures unless otherwise indicated. Allow other entities to use temporary utilities and facilities without cost, including Owner's Representative, Engineer, subcontractors, testing agencies, and public authorities having jurisdiction.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. Associated General Contractors of America (AGC).
 - a. Manual of Accident Prevention for Construction.
 - 2. National Electrical Contractors Association (NECA).
 - a. 200 - Recommended Practice for Installing and Maintaining Temporary Electric Power at Construction Sites.
 - 3. National Fire Protection Association (NFPA).
 - a. 70 - National Electric Code.
 - b. 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.3 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging and storage areas, and parking areas for construction personnel.
- B. Dust Control Plan: Submit coordination drawing and narrative that describes dust control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
 - 1. Locations of dust control partitions at each phase of Work.
 - 2. Location of proposed air filtration system discharge.
 - 3. Other dust control measures.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION

3.1 GENERAL

- A. Comply with AGC Manual of Accident Prevention for Construction; applicable laws and governmental rules and regulations; and public authorities having jurisdiction.
- B. Conditions of Use:
 - 1. Locate temporary services and facilities where they will serve Project adequately and result in minimum interference with performance of Work. Coordinate locations with Owner's Representative.
 - 2. Provide temporary services and facilities ready for use when needed to avoid delay.
 - 3. Maintain temporary and existing services and facilities clean and neat, in good operating condition, and in condition acceptable to Owner's Representative.
 - 4. Relocate and modify temporary services and facilities as required by progress of Work.
 - 5. Enforce strict discipline in use of temporary services and facilities. To minimize waste and abuse, limit availability of temporary services and facilities to essential and intended uses.
 - 6. Remove temporary services and facilities when no longer needed, but no later than Substantial Completion.
 - a. Personnel remaining after Substantial Completion will be permitted to use permanent facilities under conditions acceptable to Owner's Representative.
 - b. Restore Site to condition existing before Project commencement.
 - c. Materials and facilities that constitute temporary facilities are property of Contractor.
- C. Provide temporary ladders, ramps, runways, stairs, scaffolding, staging, enclosures, hoists, rubbish chutes, and other construction aids as may be required for Work.

3.2 TEMPORARY UTILITIES

- A. General: Install temporary service or connect to existing service.
 - 1. Coordinate with utility company.
 - 2. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
 - 3. Arrange for public authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- B. Water Service: Use of Owner's existing water service will be permitted if obtained from the exterior of the building. Obtaining water from inside the building shall not be permitted unless specifically approved by Owner.
 - 1. Provide connections and extensions of service as required for construction operations.
 - 2. Provide additional water as necessary.
- C. Electric Power Service: Use of Owner's existing electric power service will be permitted if obtained from the exterior of the building. Obtaining electric power from inside the building shall not be permitted unless specifically approved by Owner.
 - 1. Provide connections, extensions of service, and receptacle outlets as required for construction operations.
 - 2. As necessary, provide additional electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations. Do not overload Owner's service.

3. Comply with NECA 200 and NFPA 70.
 4. Maintain temporary service in safe condition and utilize in safe manner.
- D. Lighting: Provide temporary lighting as required.
1. Provide lighting, as necessary, with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 2. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3 TEMPORARY FACILITIES

- A. General: Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
- B. Parking: Construction personnel shall park in areas designated on Drawings or off-site unless other arrangements are made in advance in writing with Owner.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel at location designated by Owner.
1. Provide disposable supplies, including toilet tissue, paper towels, and paper cups. Maintain adequate supply. Provide covered waste containers for disposal of used material.
 2. Service toilets at least twice weekly.
 3. Provide wash facilities supplied with potable water at convenient locations for personnel who handle materials that require clean up. Supply cleaning compounds appropriate for each type of material handled. Dispose of drainage properly.
 - a. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
 4. Comply with public authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 5. Use of Owner's existing toilet facilities will not be permitted.
- D. Sanitary Facilities: Use of Owner's existing toilet facilities will be permitted.
- E. Storage Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of public authorities having jurisdiction.
- G. Use of Existing Stairs and Elevators: Use of Owner's existing stairs and elevators will be permitted, as long as stairs and elevators are cleaned and maintained in condition acceptable to Owner.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs, elevator cars, and entrance doors and frame, and to maintain means of egress.
 2. At Substantial Completion, restore stairs and elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
- H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Construction maintenance and operation shall be in accordance with public authorities having jurisdiction.

2. Locate sufficient distance from exterior walls and protect walls to prevent damage.

I. Temporary Rubbish Chutes:

1. Construct dustproof rubbish chutes on outside of structure, as required.
2. Maintain chutes and remove when no longer needed or when directed by Owner's Representative.
3. Discharge chutes into trucks or suitable containers to avoid re-handling of rubbish. Spray rubbish as required to prevent dust nuisance. Remove rubbish from Site.

3.4 TEMPORARY PROTECTION AND CONTROLS

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
1. Comply with applicable laws, governmental rules and regulations, and public authorities having jurisdiction with regard to noise, dust, pest, and pollution control.
- B. Temporary Fencing:
1. Tree and Plant Protection: Install temporary fencing located as indicated or outside drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
 2. Site Enclosure Fence: Before construction operations begin, provide Site enclosure fence in manner that will prevent people and animals from easily entering Work areas except by entrance gates.
 - a. Provide lockable entrances to prevent unauthorized entrances. Lock entrances during non-working hours. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner's Representative with one set of keys.
- C. Barricades, Warning Signs and Lights, and Traffic Controls: Provide and maintain barricades, warning signs and lights, and traffic controls. Provide traffic control as necessary for construction vehicles entering and leaving Site, and for non-construction vehicles on or near Site. Comply with requirements of public authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- D. Project Identification and Temporary Signs: Provide Project identification and other signs at locations indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
1. Provide temporary directional signs for construction personnel and visitors.
 2. Maintain signs so they are legible at all times.
- E. Covered Walkway: Erect protective covered walkways for passage of individuals at ground level below elevated Work area. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of public authorities having jurisdiction and requirements indicated on Drawings.
1. Construct covered walkways using scaffold or shoring framing.
 2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, vandal-resistant lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
 3. If covered walkway structure is to be used as a work platform, construct platform according scaffolding requirement of public authorities having jurisdiction.

4. Provide netting to catch or contain falling debris at all locations where the public may enter or exit from below the covered walkway.
 5. Maintain appearance of walkway for duration of Work.
- F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide portable, UL-rated fire extinguishers with class and extinguishing agent as required by locations and classes of fire exposures.
 2. Prohibit smoking on Site.
 3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of public authorities having jurisdiction.
 4. Store combustible materials in approved safety containers and enclosures, away from building if possible.
 5. Develop and supervise overall fire-prevention and -protection program for personnel at Site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
- G. Dust and Fume Control: Prevent dust, dirt, fumes, and odors from entering occupied areas.
1. Provide and maintain dustproof partitions to limit dust, dirt, fumes, and noise migration to occupied indoor areas and outdoor areas that the public can access.
 2. Filter supply air or disconnect HVAC systems in or near Work area that service occupied areas.
- H. Noise Control: Perform Work in manner to minimize noise, during hours authorized by Owner's Representative.
1. Abrasive blasting and shot blasting may be performed on weekends only.
 2. Concrete demolition and sawcutting can be performed during normal business hours if minimum 24 hour notice is provided to Owner.
- I. Temporary Construction Protection:
1. Provide and secure temporary weathertight protection for in-progress exterior construction, as needed, including unfinished Work on walls and roofs.
 2. Provide insulation or temporary heating as necessary for curing, drying, and protection of installed construction.
 - a. Select equipment that will not have harmful effect on completed installations or elements being installed.
 - b. Maintain temporary heating on twenty-four hour basis until no longer needed.
 - c. Unless noted otherwise, insulation is considered incidental to construction and will not be paid for separately.
 - d. Unless otherwise specified, temporary heating will not be considered part of Work and will be paid as additional Work item. Notify Owner in advance of need for temporary heating and estimated added cost. Do not proceed with temporary heating until authorized in writing by Owner.
 3. Protect finished surfaces against damage. Minimize traffic on finished walkway surfaces and do not use for material storage.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for selection of products for use in Project, including requests for comparable products and general product delivery, storage, and handling requirements.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into Work, whether purchased for Project or taken from previously purchased stock. Includes "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, which is current as of date of Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

1.3 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with Contract Documents, are undamaged, and, unless otherwise indicated, are new at time of installation.
 - 1. Select products compatible with other products specified or previously selected.
 - 2. Provide products complete with accessories, trim, finish, fasteners, and other items needed for complete installation and indicated use and effect.
 - 3. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 4. Owner reserves right to limit selection to products with warranties in conformance with requirements of Contract Documents.
 - 5. Where products are accompanied by term "as selected," Engineer will make selection.
 - 6. Descriptive, performance, and reference standard requirements in Specifications establish salient characteristics of products.
 - 7. Or Equal: For products specified by name and accompanied by term "or equal," or "or approved equal," or "or approved," comply with Owner's requirements for comparable product requests.
- B. Product Selection Procedures:
 - 1. Products:
 - a. Where Specifications name single manufacturer and product, select named product.

- b. Where Specifications include list of names of both manufacturers and products, select one of products listed that complies with requirements. If “or equal” products are permitted, comply with Owner’s requirements for comparable product requests.
 - c. Where Specifications name product, or refer to product indicated on Drawings, and include list of manufacturers, select specified or indicated product or comparable product by one of other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on product named.
 - d. Where Specifications specify product or method by reference or performance standards only, select product that meets or exceeds standards.
2. Manufacturer/Source:
- a. Where Specifications name single manufacturer or source, select product by named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - b. Where Specifications include list of manufacturers' or source’s names, select product by one of manufacturers or sources listed that complies with requirements. If “or equal” products are permitted, comply with Owner’s requirements for comparable product requests.

1.4 SUBMITTALS

- A. Products List: Within fourteen days after date of Notice to Proceed, submit to Engineer list of products proposed for use, organized by Specification section. Include name and address of manufacturer, trade name of product, model or catalog designation, and intended use.
- 1. Products List does not replace requirement to submit product data, comparable product requests, or substitution requests.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery:
- 1. Schedule delivery to minimize long-term storage at Site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Site in undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
- 1. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 2. Store products that are subject to weather damage under cover in weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 3. Protect stored products from damage and stored liquids from freezing.
 - 4. Store products to allow for inspection and measurement of quantity or counting of units.

5. Store materials in manner that will not endanger Project structure, away from edge of Project structure.
6. Provide secure location and enclosure at Site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.
7. Move stored products that interfere with operations of Owner or other Contractors.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 70 10
EXECUTION OF WORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: General administrative and procedural requirements governing execution of Work, including the following:
 - 1. Examination of existing conditions.
 - 2. Preparation.
 - 3. Removal of existing construction, including salvage and reuse of materials.
 - 4. Cutting and patching.
 - 5. Installation of Work.
 - 6. Protection of installed construction.
 - 7. Correction of Work.
 - 8. Progress cleaning.

- B. Cutting and patching includes the following:
 - 1. Removal and replacement of existing construction necessary to install Work or make several parts fit properly.
 - 2. Removal and replacement of Work
 - a. That is defective;
 - b. That does not conform to requirements of Contract Documents;
 - c. To provide for installation of ill-timed Work;
 - d. To alter Work; or
 - e. To allow observation of concealed Work.
 - 3. Removal of samples of installed Work for testing.

1.2 PAYMENT

- A. Pay for cutting and patching unless requested by Engineer for Work that is not defective, nonconforming, or not .

1.3 REFERENCES

- A. Definitions:
 - 1. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
 - 2. Existing to remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
 - 3. Patching: Fitting and repair work required to restore construction to original condition after installation of other work.
 - 4. Remove: Detach items from existing construction and legally dispose of off-site, unless indicated to be removed and salvaged or removed and reinstalled.
 - 5. Remove and reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

6. Remove and salvage: Detach items from existing construction and deliver to Owner ready for reuse.
- B. Reference Standards: Latest edition as of Specification date.
 1. ASTM International:
 - a. C1036: Standard Specification for Flat Glass.
 2. National Fire Protection Association (NFPA).
 - a. 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.4 SUBMITTALS

- A. Submit, prior to beginning Work, photographic or video documentation of existing conditions, including finish surfaces, which might be misconstrued as damage caused by Work.
- B. Submit identification codes and inventory of materials to be salvaged or reinstalled.
- C. Manufacturers' recommendations for cleaning spillage and over-application of products.
 1. Proposed products and methods for cleaning where no manufacturers' recommendations.

1.5 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 1. Structural Elements: When cutting and patching structural elements, notify Engineer of locations and details of cutting and await directions from Engineer before proceeding. Shore, brace, and support structural element, as necessary, during cutting and patching. Do not cut and patch structural elements in manner that could change their load-carrying capacity or load-deflection ratio.
 2. Other Construction Elements: Do not cut and patch other construction elements or components in manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements might include the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Equipment supports.
 3. Visible Elements: Do not cut and patch exposed construction in a manner that results in visible evidence of cutting and patching or in a manner that would, in Engineer's opinion, reduce building's aesthetic qualities. Remove and replace construction that has been cut and patched in visually unsatisfactory manner.

1.6 PROJECT CONDITIONS

- A. Notify Engineer of discrepancies between Drawings and existing conditions before proceeding with Work.
- B. Assume responsibility for actual condition of existing construction.

1.7 WARRANTY

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

PART 2 PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
 - 1. Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match adjacent surfaces to fullest extent possible.
 - a. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide match acceptable to Engineer for visual and functional performance of in-place materials.
- B. Cleaning: Select cleaning materials, equipment, and methods to avoid scratching, marring, defacing, staining, or discoloring surfaces.
 - 1. Use cleaning materials and methods recommended by manufacturer of surface to be cleaned.
 - 2. Use cleaning materials on surfaces recommended by cleaning-material manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION OF EXISTING CONDITIONS

- A. Survey existing conditions and correlate with requirements indicated to determine extent of removal Work required.
 - 1. Inventory and record condition of items to be removed and salvaged or reinstalled.
- B. Document with photographs or videotape, or both, existing conditions of adjoining construction, including finish surfaces, which might be misconstrued as damage caused by demolition or other Work activities; existing conditions that are important to construction or that deviate substantially from Contract Documents; and significant conditions that will be concealed by Work.
- C. Examination and Acceptance of Conditions: Before proceeding with each component of Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Provide a written description of conditions detrimental to performance of the Work, including substrates and unacceptable installation tolerances, and recommend corrections.
 - 4. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

- D. When unanticipated structural, electrical, or mechanical elements that conflict with intended function or design are encountered, investigate and measure nature and extent of conflict. Promptly submit written report to Engineer.
- E. Survey existing conditions as Work progresses to detect hazards resulting from construction.
- F. Provide access to Work areas and perform localized demolition as necessary for inspection of concealed underlying conditions by Engineer and Owner's Representative.

3.2 UTILITIES AND MECHANICAL AND ELECTRICAL SYSTEMS

- A. Disconnect and seal or cap off indicated utility services and mechanical and electrical systems in Work areas.
- B. Where existing utility services or mechanical or electrical systems are required to be removed, relocated, or abandoned, bypass such services/systems before beginning Work to prevent interruption to occupied areas.

3.3 PREPARATION

- A. Field Measurements: Take field measurements as required to fit Work properly. Recheck measurements before installing each product. Where portions of Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of Contract Documents caused by differing field conditions outside of the control of the Contractor, submit a request for information to Engineer. Include a detailed description of the problem encountered, with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation," or similar form.

3.4 PARTIAL REMOVAL

- A. Demolish and remove existing construction and installations only as necessary and required for proper installation of Work indicated on the Drawings and Specifications.
 - 1. Conduct removals carefully to avoid damaging existing construction and installations that will remain. Protect construction that will remain against damage and soiling. When permitted by Engineer, items may be removed to a suitable, protected storage location during removal Work and cleaned and reinstalled in original locations after removal operations are complete.
 - a. Neatly cut openings and holes plumb, square, and true to dimensions required.
 - b. Cut or drill from exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - c. Use cutting methods least likely to damage construction to remain.
 - d. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces.
 - e. Temporarily cover openings to remain.
 - 2. Provide and maintain shoring, bracing, and structural supports, as required to preserve stability and prevent movement, settlement, or collapse of construction or finishes to

- remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
3. Remedy damage to existing construction and installations caused by Contractor operations.
- B. Items to be Salvaged or Reinstalled.
1. Carefully remove from building, clean, and mark with identifying code.
 2. Store in secure area and protect from damage.
 3. Replace damaged items to be reinstalled with new items to match undamaged originals.
 4. Items to be salvaged.
 - a. Pack or crate, and label contents of containers.
 - b. Store in secure area until delivery to Owner.
 - c. Transport to Owner's on-site storage area.
 - d. Protect from damage during transport and storage.

3.5 CUTTING AND PATCHING

- A. General: Cut in-place construction to provide for installation of other components or performance of other construction and proceed with patching after construction operations requiring cutting are complete, as required to restore surfaces to their original condition.
1. Employ skilled workers to perform cutting and patching.
 2. Proceed with cutting and patching at earliest feasible time and complete without delay.
 3. Provide temporary support of work to be cut.
 4. Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
 5. Coordinate cutting and patching with use of and free passage to adjoining occupied areas.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using cutting machine, such as abrasive saw or diamond-core drill.
 4. Provide substrate suitable for installation of Work and patching.
 5. Notify Engineer and Owner's Representative immediately of damage to concealed elements, such as electrical conduits.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections.
1. Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in manner that will minimize evidence of patching and refinishing. Provide even surface of uniform finish, color, texture, and appearance.

3. Where patching occurs in painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over patch, and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Patch exterior building enclosure components in manner that restores enclosure to weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 INSTALLATION OF WORK

- A. General: Locate Work and components of Work accurately, in correct alignment and elevation. Make vertical work plumb and make horizontal work level.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to parties involved templates for work specified to be factory prepared and field installed. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where the size and type of attachments are not indicated, verify size and type required for load conditions.
 1. Allow for building movement, including thermal expansion and contraction.
 2. Coordinate the installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous. Provide adequate ventilation during use of volatile or noxious materials.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

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

3.8 CORRECTION OF WORK

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

3.9 PROGRESS CLEANING

- A. General: Clean Site and Work areas daily, including common areas. Enforce requirements strictly. Separate materials per disposal requirements and dispose of legally.
 - 1. Provide containers for waste materials, debris, and rubbish.
 - 2. Do not hold waste materials, debris, or rubbish more than seven days during normal weather or three days if temperature is expected to rise above 80 degrees Fahrenheit.
 - 3. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 4. Collect hazardous and unsanitary waste materials and debris in separate containers from other waste. Use containers intended for holding waste materials of type to be stored and mark containers appropriately. Remove from Site daily and dispose of legally.
 - 5. Do not bury or burn waste materials, debris, or rubbish on-site. Do not discharge or wash waste materials, debris, or rubbish down sewers or into waterways.
- B. Site: Maintain Site and surrounding areas free of waste materials, debris, and rubbish from construction operations and personnel.
- C. Work Areas: Clean areas where Work is in progress to level of cleanliness necessary for proper execution of Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of Work, broom-clean or vacuum entire work area or dampen area, as appropriate.
- D. Installed Work: Keep installed Work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at the time of Substantial Completion.

- G. Handle waste materials, debris, and rubbish in a controlled manner with as few handlings as possible. Do not throw from heights.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Supply and placement of cast-in-place concrete, including formwork, concrete materials, mix design, batching procedures, placement procedures, finishes, and curing.
- B. Related Sections:
 - 1. Section 07 18 00 - Traffic Coatings.
- C. Payment: Lump sum.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. American Concrete Institute (ACI):
 - a. 117: Specification for Tolerances for Concrete Construction and Materials and Commentary.
 - b. 301: Specifications for Structural Concrete.
 - c. 305R: Guide to Hot Weather Concreting.
 - d. 306R: Guide to Cold Weather Concreting.
 - 2. ASTM International:
 - a. C31/C31M: Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - b. C33/C33M: Standard Specification for Concrete Aggregates.
 - c. C39/C39M: Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - d. C42/C42M: Standard Test Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - e. C94/C94M: Standard Specification for Ready-Mixed Concrete.
 - f. C143/C143M: Standard Test Method for Slump of Hydraulic-Cement Concrete.
 - g. C150/C150M: Standard Specification for Portland Cement.
 - h. C171: Standard Specification for Sheet Materials for Curing Concrete.
 - i. C172: Standard Practice for Sampling Freshly Mixed Concrete.
 - j. C231/C231M: Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - k. C260/C260M: Standard Specification for Air-Entraining Admixtures for Concrete.
 - l. C309: Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 - m. C494/C494M: Standard Specification for Chemical Admixtures for Concrete.
 - n. C618: Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - o. C856: Standard Practice for Petrographic Examination of Hardened Concrete.
 - p. C1064/C1064M: Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.

- q. C1152/C1152M: Standard Test Method for Acid-Soluble Chloride in Mortar and Concrete.
- r. C1218/C1218M: Standard Test Method for Water-Soluble Chloride in Mortar and Cement.
- s. C1260: Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method).
- t. C1524: Standard Test Method for Water-Extractable Chloride in Aggregate (Soxhlet Method).

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
 - 1. With Owner's Representative.
 - 2. With other trades:
 - a. To ensure that work done by other trades is complete and ready for concrete Work.
 - b. To avoid or minimize work on, or in immediate vicinity of, concrete Work in progress.
 - c. To ensure that subsequent work will not adversely affect installed concrete.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's literature and technical data, including VOC contents, for admixtures, curing compounds, and other products.
 - 1. Include Safety Data Sheets (SDS) for information only.
- B. Curing: submit written description of curing method. If curing compound is to be used, submit written confirmation from traffic coating manufacturer that curing compound will not adversely affect bond of traffic coating.
- C. Design Mixes: For each concrete mixture, include:
 - 1. Proportions of materials.
 - 2. Mill tests and certification for cement, fly ash, and slag cement. Certification for silica fume.
 - 3. Sieve analysis for fine and coarse aggregate.
 - 4. Test results for deleterious substances in aggregates and potential aggregate reactivity.
 - 5. Slump during laboratory tests.
 - 6. Air content during laboratory tests.
 - 7. Three-, seven-, and 28-day laboratory compression test results. Minimum three cylinders at each test age.
 - 8. Indicate:
 - a. Amount of mix water to be withheld for later addition at Site.
 - b. Range of high-range, water-reducing admixture dosage that may be added at Site without adversely affecting hardened concrete.
- D. Field Quality Control: Batch tickets for ready-mix concrete.
- E. Joint Layout: Proposed construction and control joint layout required to construct structure, subject to review by Engineer.
- F. Contractor Qualifications: Evidence that Contractor's *existing company* has minimum five years of continuous experience in similar concrete work; list of at least five representative, successfully-completed projects of similar scope and size, including:
 - 1. Project name.

2. Owner's name.
3. Owner's Representative name, address, and telephone number.
4. Description of work.
5. Types of concrete work.
6. Project supervisor.
7. Total cost of concrete work and total cost of project.
8. Completion date.

1.5 QUALITY ASSURANCE

- A. Contractor Qualifications: Experienced firm that has successfully completed concrete work similar in material, design, and extent to that indicated for the Project. Must have successful construction with specified materials in local area in use for a minimum of five years.
- B. Ready-Mix Supplier Qualifications: ASTM C94/C94M; Certification of Production Facilities and Delivery Vehicles by National Ready Mixed Concrete Association.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. If concrete is to be site-batched:
 1. Deliver, store, and handle materials according to manufacturer's recommendations and in such manner as to prevent damage to materials or structure.
 2. Deliver materials to Site in original bags and containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing.
 3. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
 4. Store materials in original, undamaged bags or containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Manufacturer's standard packaging and covering is not considered adequate weather protection.
 - a. Store bags containing cement on pallets.
 - b. Store fine and coarse aggregates away from normal drainage paths and cover with canvas or plastic if necessary to keep dry.
 - c. Protect materials from dirt, dust, and other contaminants.
 5. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
 6. Conspicuously mark damaged or opened bags or containers or bags or containers with contaminated materials, and remove from Site as soon as possible.

1.7 PROJECT CONDITIONS

- A. Comply with Owner's limitations and restrictions for Site use and accessibility.
- B. Handle materials in strict accordance with safety requirements required by material manufacturers; Safety Data Sheets (SDS); and local, state, and federal rules and regulations. Maintain Safety Data Sheets (SDS) with materials in storage area and available for ready reference on Site.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of same brand from same manufacturer's plant, each aggregate from one source, and admixtures through one source from single manufacturer.
- B. Portland Cement: ASTM C150/C150M, Type I or II. Use only one brand and type of cement for Project.
- C. Aggregates: ASTM C33/C33M; from single source with documented record of at least ten years of satisfactory service using similar aggregates and cementitious materials in similar applications and service conditions.
 - 1. Coarse Aggregates: 3/4 inch nominal maximum aggregate size.
 - 2. Alkali Reactivity: Coarse and fine aggregates shall have expansion indicative of innocuous behavior; that is, less than 0.10 percent expansion after 16 days; when tested according to ASTM C1260, or mitigating measures shall be included in concrete mix.
 - a. Provide ASTM C1260 test results for aggregates proposed for use, performed within last year.
 - b. If reported expansion is 0.10% or more at 16 days after casting, use mitigation measures shown to render innocuous results when tested according to ASTM C1260 or provide coarse and fine aggregates from a remote source, with expansion indicative of innocuous behavior when tested according to ASTM C1260. ASTM C1293 procedure may be substituted for ASTM C1260.
- D. Water: Potable.

2.2 ADMIXTURES:

- A. General: Admixtures certified by manufacturer to contain no more than 0.1 percent chloride ions and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
 - 1. Air-Entraining Admixture: ASTM C260/C260M.
 - 2. Water-Reducing Admixture: ASTM C494/C494M, Type A.
 - 3. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
 - 4. Water-Reducing and Accelerating Admixture: ASTM C494/C494M, Type E.
 - 5. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D.

2.3 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C171, white burlap-polyethylene sheet.
- B. Water: Potable.
- C. Membrane-Forming Curing Compound: ASTM C309, Type 1. Silicate materials shall not be used.

2.4 CONCRETE MIXES

- A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mixes or field-test data, according to ACI 301.

1. Use qualified independent testing agency for preparing and reporting proposed mix designs for laboratory trial mix basis.
- B. Proportion normal-weight concrete mix as follows:
1. 7-day Compressive Strength: 3,000 pounds per square inch.
 2. 28-day Compressive Strength: 4,000 pounds per square inch.
 3. Maximum Water-Cementitious Materials Ratio, by weight: 0.40.
 4. Slump: 3 to 5 inches.
 - a. With High-Range, Water-Reducing Admixture:
 - 1) 3- to 5-inch slump prior to adding admixture.
 - 2) 7 inches maximum slump after admixture is added.
 5. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having air content of 3 to 5 percent, unless otherwise indicated.
 6. Admixtures: Use admixtures according to manufacturer's written instructions.
 - a. Use water-reducing admixture. Alternately use high-range, water-reducing admixture (superplasticizer), as required, for placement and workability.
 - b. Use retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 7. No chlorides shall be intentionally introduced into concrete mix.
 - a. In hardened concrete, limit acid-soluble chloride ion content to 0.10 percent by weight of cement when tested according to ASTM C1152/C1152M, or water-soluble chloride ion content to 0.08 percent by weight of cement when tested according to ASTM C1218/C1218M.
 - b. If hardened concrete exceeds chloride ion limits above, limit water-extractable chloride ion content to 0.08 percent by weight of cement when tested according to ASTM C1524.
 - c. Provide test results necessary to demonstrate concrete and aggregates do not exceed chloride ion limits, unless waived by Engineer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements and other conditions affecting the installation or performance of the concrete Work.
1. Ensure that work done by other trades is complete and ready for concrete Work.
 2. Verify that areas and conditions under which concrete Work is to be performed permit proper and timely completion of Work.
 3. Notify Engineer in writing of conditions which may adversely affect the installation or performance of the concrete Work and recommend corrections.
 4. Do not proceed with concrete Work until adverse conditions have been corrected and reviewed by Engineer.
 5. Commencing concrete Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Take precautions to ensure the safety of people, including building users, passers-by, and workmen, and animals, and protection of property, including adjacent building elements, landscaping, and motor vehicles.

- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- C. Protect paving and sidewalks, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.
- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during the Work.
- F. Assume responsibility for injury to persons or damage to property due to the Work, and remedy at no cost to Owner.

3.3 JOINTS

- A. Construction Joints: not permitted between placements of new concrete on metal deck without prior approval in writing by Engineer.

3.4 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94/C94M, and furnish batch ticket information.
 - 1. Deliver concrete to Site and discharge within 90 minutes or before 300 revolutions of mixer drum, whichever comes first, after introduction of mix water. When air temperature is between 85 and 90 degrees F, reduce mixing and delivery time to 75 minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to 60 minutes. Concrete that exceeds the specified time limits shall be rejected. Do not deliver concrete when air temperature is above 95 degrees F.
 - 2. Do not add water-reducing or high-range, water-reducing admixture indiscriminately to increase slump.
 - 3. Introduce high-range, water-reducing admixture at the Site with additional mixing per the manufacturer's recommendations.
 - 4. Reject concrete that arrives at the Site with a slump exceeding the maximum specified slump.
- B. Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M.
 - 1. Develop batching and mixing operations so that quality control is assured.
 - 2. Designate one or two individuals to batch and mix concrete. Fully instruct these individuals on batching and mixing procedures. No other persons shall batch or mix concrete without prior notification to Engineer.
 - 3. Maintain accurate mix proportions. Batch materials by weight on the basis of whole bags of cement. Maintain a calibrated scale at the Site during concrete placement operations. Batching by volume is permitted if the weight-volume relationship for each material is verified on a daily basis, and aggregate moisture content is measured at least once daily and aggregate volume is adjusted for bulking.
 - 4. Incorporate admixtures into the mix in the manner recommended by the manufacturer and approved by Engineer. Measure with accuracy of +/-3 percent. Add each admixture separately.
 - 5. Combine and mix ingredients to uniform consistency.
 - 6. Mix concrete materials in an appropriate drum-type batch machine mixer.

- a. For a mixer capacity of 1 cubic yard or smaller, mix at least 1 1/2 minutes, but not more than five minutes after ingredients are in mixer.
- b. For a mixer capacity larger than 1 cubic yard, increase mixing time by 15 seconds for each additional cubic yard.
- c. Provide a sufficient number of mixers, including reserve mixers, so that concrete placement operations will proceed uninterrupted and each area is completely cast before concrete achieves initial set.

3.5 CONCRETE PLACEMENT

- A. Remove laitance and other surface contaminants from concrete surfaces by sandblast or wire-brush cleaning.
- B. Allow Engineer at least 24 hours to observe forms, screed rails or guides, concrete surfaces, reinforcement, and embedments.
- C. Before placing concrete, verify the following:
 1. Installation of formwork, reinforcement, and embedded items is complete.
 2. Concrete surfaces and forms are clean of frost, ice, mud, debris, and water.
 3. Reinforcement is securely tied in place and thoroughly cleaned of ice and other coatings that may reduce or destroy bond with concrete.
 4. Required inspections have been performed.
 5. Equipment for mixing and transporting concrete is clean.
 6. Vibrators are operational.
- D. Before sampling for testing and placing concrete, water may be added at Site, up to the amount allowed in the design mix.
 1. Do not add water after adding high-range, water-reducing admixture.
- E. Convey concrete from the mixer to the place of deposit in a manner such that no segregation or loss of materials occurs.
- F. Deposit concrete:
 1. Place concrete as near as possible to its final position to avoid segregation due to re-handling or flowing.
 2. Do not allow concrete to fall a vertical distance greater than 4 feet from the point of discharge to the point of deposit.
 3. Do not allow concrete to disturb or displace reinforcement, floor drains, or other embedments.
 4. Place concrete at a rate so that the concrete is plastic and flows readily into corners of forms and into spaces around reinforcing bars.
 5. Place concrete continuously until the member or section is completed, with no cold joints.
 6. Dispose of concrete that has partially set prior to placement or that has been contaminated by foreign material.
- G. Consolidate concrete with mechanical vibrating equipment, so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 1. Use internal vibrators with minimum speed of 7,000 vibrations per minute and that are sufficiently narrow to fit into spaces between reinforcing bars, formwork, and existing concrete. Have extra vibrators at the Site in case a vibrator does not work.
 2. Do not use vibrators to transport concrete.

3. Insert and withdraw vibrators vertically at uniformly spaced locations no farther apart than the visible effectiveness of the vibrator, to rapidly penetrate layer being placed and at least 6 inches into preceding layer. Do not insert vibrators into lower concrete layers that have begun to lose plasticity.
 4. At each insertion, limit the duration of the vibration to the time necessary to consolidate the concrete without causing mix constituents to segregate.
 5. For slabs:
 - a. Strike-off the surface and consolidate the concrete with a vibrating screed, to the correct elevation.
 - b. Slope surfaces uniformly to drains where required.
 - c. Before excess bleed water appears on the surface, use a bull float, darby, or modified highway straightedge to form a uniform, planar, open-textured surface. Do not further disturb the surface before starting finishing operations.
- H. Cold-Weather Placement: Protect concrete from physical damage or reduced strength due to frost, freezing, or low temperatures. Comply with ACI 306R and as follows.
1. When the air temperature has fallen or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F and not more than 80 degrees F at the point of placement. Mix water and aggregates together before adding cement. Do not add cement if the temperature of the water/aggregate mixture exceeds 70 degrees F.
 2. Do not use frozen materials or materials containing ice or snow.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix design.
- I. Hot-Weather Placement: Protect concrete Work from physical damage or reduced strength due to rapid evaporation or overheating of concrete. Refer to Fig. B1 in ACI 305R for hot-weather conditions that may adversely affect concrete placement, finishing, and curing. Do not allow the temperature of the concrete at the time of placement to exceed 90 degrees F. When hot-weather conditions exist, use one or more of the following procedures:
1. Place concrete at night or early in morning.
 2. Cool ingredients before mixing to maintain the concrete temperature below 90 degrees F at the time of placement. Chilled mixing water or chopped ice may be used to control the temperature; include the water equivalent of the ice in the mixing water quantity. Use liquid nitrogen to cool the concrete at Contractor's option.
 3. Cover steel reinforcement with water-soaked burlap so the steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
 4. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep the subgrade moisture uniform without standing water, soft spots, or dry areas.
 5. Provide windbreaks or sunshades, or both.

3.6 FINISHING SLABS

- A. After the concrete has slightly stiffened, finish surfaces by float and broom. Do not wet concrete surfaces or add cement.
- B. Float Finish:
1. Consolidate the surface with a power-driven float, or by hand floating if the area is small or inaccessible to a power-driven float, to create a uniform, smooth, granular texture.
 2. Troweling machines with float blades or pans slipped over trowel blades may be used; trowel machines with normal trowel blades or combination blades shall not be used.

3. If possible, restraighnten the surface with a modified highway straightedge to cut down high spots and fill low spots.
 4. Hand finish to remove mortar buildup.
- C. Float and Broom Finish: After applying the float finish, slightly roughen the surface with a medium-broom finish.
- D. Finish the surface so that 90 percent of the measured gaps between the concrete surface and an unleveled, freestanding, 10-foot-long straightedge, resting on two high spots and placed anywhere on the surface, do not exceed 1/4 inch, measured in accordance with ACI 117.
- E. Hot-Weather Conditions: Fog the surface with water if hot, dry, or windy conditions cause moisture loss approaching 0.2 pounds per square foot per hour before or during finishing operations.

3.7 CONCRETE CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Maintain concrete above 55 degrees F and in moist condition for at least seven days after placing.
- B. Unformed Top Surfaces: Begin curing immediately after finishing concrete. Use moisture-retaining cover.
1. Place cover in widest practicable width, with sides and ends lapped at least 12 inches.
 2. Seal sides and ends of cover by holding down with soil, concrete pieces, or some other weight, or by using waterproof tape or adhesive.
 3. Immediately repair holes or tears in cover during curing period using cover material and waterproof tape.
 4. Re-wet concrete surface at least twice daily as necessary.
 5. As an alternative to wet curing, two applications of a curing compound may be used if approved by traffic coating manufacturer and submitted in advance to Engineer.
- C. Protect concrete from falling below 55 degrees F with insulating blankets or heated enclosures vented to the outside.

3.8 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair defective areas designated by Engineer. Remove and replace concrete that cannot be repaired to Engineer's satisfaction.
- B. Surface defects on exposed surfaces include:
1. Voids, such as spalls, air bubbles, honeycomb, rock pockets, and form-tie holes, more than 1/2 inch in any dimension in solid concrete but not less than 1 inch deep.
 2. Cracking and cracks in excess of 0.01 inch wide, or that penetrate to reinforcement or completely through section.
 3. Fins and other projections exceeding 1/2 inch.
 4. High or low spots that create areas of standing water that are at least 1/2 inch deep and at least 9 square feet in area.
- C. Repair defects on concealed surfaces that affect concrete's durability and structural performance as determined by Engineer.

- D. As soon as possible, cut out spalls, air bubbles, honeycombs, rock pockets, and voids. Make edges of cuts perpendicular to concrete surface. Clean voids and fill with patching mortar according to the manufacturer's recommendations. Use polymer- or silica fume-modified, cementitious, non-sag mortar that is specifically intended for this application. Use one of the following or approved equal:
 - 1. MasterEmaco N 400 manufactured by Master Builders Solutions.
 - 2. SikaTop 123 Plus manufactured by Sika Corporation.
- E. After concrete has gained sufficient strength to be unaffected by grinding, grind off fins, other projections, and high areas.
- F. Repair materials and installation not specified above may be used if approved by Engineer.

3.9 FIELD QUALITY CONTROL

- A. Submit batch tickets for ready-mix concrete.
- B. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to sample materials and perform tests during concrete placement.
- C. Provide:
 - 1. Access to Work.
 - 2. Materials for sampling.
 - 3. Site facilities for sampling, testing, and storage of materials.
 - 4. Incidental labor.
- D. Testing Services: Sampling and testing of composite samples of fresh concrete shall be performed according to the following requirements:
 - 1. Testing Frequency: Obtain one composite sample of each concrete mix for each day's pour.
 - 2. Take samples from transport vehicle or mixer during discharge according to ASTM C172. Take samples at other locations if directed by Engineer.
 - 3. Slump: ASTM C143/C143M; one test for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change. If high-range, water-reducing admixture is used, perform one test prior to adding admixture.
 - 4. Air Content: ASTM C231/C231M; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
 - 5. Concrete Temperature: ASTM C1064/C1064M; one test for each composite sample; and one test hourly when air temperature is 40 degrees F and below or 80 degrees F and above.
 - 6. Compression Test Specimens: ASTM C31/C31M.
 - a. Cast four standard cylinder specimens for each composite sample, immediately after sample is taken. Store specimens at the Site for at least 16 hours at a temperature of 60 to 80 degrees F. Provide a temperature-controlled box or other enclosure if necessary. After at least 16 hours, but not more than 30 hours, transport the specimens to the laboratory and air cure at 73 degrees F, 50 percent relative humidity.
 - b. If requested by Engineer, take four additional cylinder specimens and field cure in the vicinity of the area that they represent and in the same manner as that portion of the structure.
 - 7. Compressive-Strength Tests: ASTM C39/C39M.
 - a. Test one set of two specimens at seven days and one set of two specimens at 28 days.
 - b. Compressive-strength test shall be the average compressive strength from a set of two specimens obtained from the same composite sample and tested at the age indicated.

8. Test results shall be reported in writing to Owner, Engineer, concrete supplier, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain:
 - a. Name of concrete testing and inspecting agency.
 - b. Project identification name.
 - c. Date of concrete placement.
 - d. Specific location of concrete batch in Work.
 - e. Concrete mix number, design compressive strength at 28 days, design slump range, and design air content range.
 - f. Specimen number, cylinder size, dates of compression tests, compressive breaking strengths and types of break for seven- and 28-day tests, and measured slump, air content, and air and concrete temperatures.
 - g. Statement that indicates whether test results are in conformance with Specifications.
9. Concrete strength is satisfactory if the average of every three consecutive 28-day compressive-strength tests equals or exceeds the specified 28-day compressive strength and no test value is more than 500 pounds per square inch less than the specified 28-day strength.
10. If any seven-day compressive-strength test result is less than 75 percent of the specified 28-day compressive strength, submit revised mix design data for concrete that will conform to Specifications.
11. When the compressive strength of field-cured specimens is less than 85 percent of the companion laboratory-cured cylinders, evaluate operations and provide corrective procedures for protecting and curing the in-place concrete. Pay the cost of sampling and testing non-conforming field-cured specimens. Owner will pay the cost of sampling and testing conforming field-cured specimens.
12. Non-Conforming Concrete:
 - a. If tests indicate that concrete is not in conformance with the Specification, remove and replace non-conforming concrete and underlying metal deck or perform for additional testing, acceptable to Engineer, to verify conformance with the Specification, at no cost to Owner.
 - b. Procure core samples in accordance with ASTM C42/C42M.
 - c. If tests indicate that the slump, air entrainment, or other requirements have not been met, examine core samples petrographically, according to ASTM C856, to evaluate hardened concrete characteristics.
 - d. If compressive-strength tests do not meet the acceptance requirements, procure three core samples from each portion of the structure represented by the unsatisfactory tests, and test in compression. The strength of concrete in the area represented by core tests is satisfactory if the average of three compressive strength tests equals or exceeds 85 percent of the specified 28-day compressive strength and no compressive-strength test value is less than 75 percent of the specified 28-day compressive strength. If strength acceptance criteria are not met, remove and replace non-conforming concrete areas at no cost to Owner.
 - e. Perform additional inspection and testing, at no cost to the Owner, to determine the compliance of replaced or additional work with the specified requirements.

3.10 CLEANING

- A. After completing the concrete Work:
 1. Clean soiling from adjacent surfaces. Exercise care to avoid scratching or damage to surfaces.
 2. Repair surfaces stained, marred, or otherwise damaged during concrete Work.
 3. Clean up debris and surplus materials and remove from Site.

END OF SECTION

SECTION 04 01 21

BRICK MASONRY REPAIR AND REPLACEMENT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Brick masonry replacement along sides of second floor walkway.
- B. Products Installed But Not Supplied Under This Section:
 - 1. Masonry mortar and grout: Section 04 05 01.
- C. Related Sections:
 - 1. Section 04 05 01 - Masonry Mortar and Grout
 - 2. Section 07 25 00 - Weather-Resistive Barrier and Flexible Flashing
 - 3. Section 07 62 00 - Sheet Metal Flashing and Trim
 - 4. Section 07 92 00 - Joint Sealants

1.2 REFERENCES

- A. Definitions:
 - 1. Existing mortar: Mortar currently in joint, including original setting mortar and pointing mortar, and subsequent repair mortar.
 - 2. Half-moon: Concave configuration of mortar resulting from removal of mortar by grinding only middle portion of joint.
 - 3. Rake out mortar joint: Removal of hardened mortar from joint.
 - 4. Repointing: Process of raking out mortar joint to specified depth and placing fresh mortar; also called tuck-pointing.
 - 5. Thumbprint hard: Mortar that has reached initial set. Time required to achieve initial set varies based on masonry characteristics, weather conditions, and mortar composition.
 - 6. Low-pressure water spray: 100 to 400 pounds per square inch; 4 to 6 gallons per minute.
 - 7. Very-low-pressure water spray: less than 100 pounds per square inch.
- B. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International:
 - a. C62: Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale).
 - b. C67: Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
 - c. C216: Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale).
 - d. C1314: Standard Test Method for Compressive Strength of Masonry Prisms.
 - e. C1405: Standard Specification for Glazed Brick (Single Fired, Brick Units).
 - f. D1056: Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
 - g. D4060: Standard Test Method for Abrasion Resistance of Organic Coatings by the Tabor Abraser.
 - h. F593: Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
 - 2. International Building Code (IBC).

3. The Masonry Society (TMS)/American Concrete Institute (ACI)/Structural Engineering Institute of American Society of Civil Engineers (ASCE):
 - a. TMS 602/ACI 530.1/ASCE 6: Specification for Masonry Structures.

1.3 SEQUENCING

- A. Order materials at earliest possible date, to avoid delaying completion of Work.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's product description and technical data:
 1. Brick masonry units: Include description of allowable cleaning products.
 2. Veneer anchors.
 3. Weep vents.
 4. Expansion joint filler.
 5. Cleaning solution: Include written instructions for evaluating and preparing substrate; technical data including solution components and VOC content of components; and application instructions.
- B. Samples: Submit samples upon request.
- C. Material Certificates: Statement of material properties indicating compliance with requirements, including statement that no coatings have been applied to units during manufacture. Provide for each type and size of unit.
- D. Test Reports:
 1. Brick Masonry Units: Test units from same run of brick that will be used on Project, or on similar brick run, in opinion of Engineer, with tests performed in last year.
 - a. Brick size variation data, confirming that actual range of sizes satisfies specified tolerances.
 - b. Test reports from independent testing laboratory showing the following test results:
 - 1) Compressive strength.
 - 2) 24-hour cold-water absorption.
 - 3) 5-hour boil absorption.
 - 4) Saturation coefficient.
 - 5) Initial rate of absorption.
 - 6) Efflorescence.
 - 7) Freeze-thaw testing, if required to verify conformance with requirements.
- E. Contractor Qualifications: Evidence that Contractor's *existing company* has minimum five years of continuous experience in similar repair work; list of at least five representative, successfully-completed projects of similar scope and size, including:
 1. Project name.
 2. Owner's name.
 3. Owner's Representative name, address, and telephone number.
 4. Description of brick masonry repair work.
 5. Project supervisor.
 6. Total cost of brick masonry repair work and total cost of project.
 7. Completion date.

1.5 QUALITY ASSURANCE

- A. Contractor Qualifications: Experienced firm that has successfully completed repair work similar in material, design, and extent to that indicated for the Project. Must have successful construction with specified materials in local area in use for minimum of five years.
 - 1. Employ foreman with minimum five years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during the Work. Do not change foremen during the course of the Project except for reasons beyond the control of Contractor; inform Engineer in advance of any changes.
 - 2. Employ masons with minimum two years of experience in similar repair work. Fully supervise apprentices with experienced masons.
- B. Mockups: Construct mockups to demonstrate construction procedures, quality of Work, and aesthetic effects.
 - 1. Construct wall repair in at least 1 area approximately 36 inches high by 48 inches wide as directed by Engineer for each type of repair specified.
 - 2. Construct mockups on existing walls, at locations designated by Engineer and in presence of Engineer, under same weather conditions expected during Work. Provide access to mockup locations.
 - 3. Photograph concealed portions of approved mockup before concealing, and retain photographs at Site.
 - 4. If Engineer or Owner's Representative determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
 - 5. Approved mockups shall be maintained in undisturbed condition throughout Project as basis for acceptance of completed Work and may become part of completed Work if undisturbed at time of Substantial Completion.
 - 6. If Owner's Representative and Engineer determine mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
 - 7. Do not order materials or proceed with repair Work until mockups have been approved by Engineer and Owner's Representative.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Site in original containers and packaging with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, directions for storing, and complete manufacturer's written instructions.
- B. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which have been exposed to moisture to their detriment.
- C. Store and handle materials in accordance with manufacturer's written instructions, safety requirements, and all applicable laws and regulations. Remove from Site, and replace at no cost to Owner, any materials that are damaged or otherwise negatively affected by not being stored or handled in accordance with manufacturer's written instructions.
- D. Store materials in original, undamaged containers and packaging in clean, dry, location on raised platforms and protected from weather, within temperature range required by manufacturer. Protect stored materials from direct sunlight and sources of ignition. Manufacturer's standard packaging and covering alone is **not** considered adequate weather protection.
- E. Locate materials in a secure location approved by Owner's Representative

- F. Conspicuously mark damaged or opened containers, containers with contaminated materials, damaged materials, and materials that cannot be used within stated shelf life and remove from Site as soon as possible. Replace discarded materials in a timely manner at no cost to Owner.
- G. Limit stored materials on structures so as to preclude damage to materials and structures.
- H. Maintain copies of all applicable Safety Data Sheets (SDS) with materials in storage area, such that they are available for ready reference on Site.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of Work. Promptly notify Engineer of conditions found to be different than those indicated in the Contract Documents. Engineer will review situation and inform Contractor how to proceed.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Environmental Limitations: Install repairs only when air temperature is between 40 degrees F and 90 degrees F and is forecast to remain so for at least seven days after completion of Work, unless precautions acceptable to Engineer are taken.

1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
 - 1. Notify Engineer of conditions that may interfere with or preclude proper execution of the Work or jeopardize the performance of the Work prior to proceeding with the Work.

PART 2 PRODUCTS

2.1 GENERAL

- A. Source Limitations: Obtain each type of material from one source with resources to provide materials of consistent quality in appearance and physical properties.
- B. For units that will be exposed in completed Work, use units with uniform texture and color, within accepted ranges for these characteristics.
- C. Defective Units: Referenced brick masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding the limits stated in the standards. Do not use units where such defects, including dimensions that vary from specified dimensions by more than the stated tolerances, will be exposed in completed Work or will impair the quality of completed brick masonry.

2.2 BRICK MASONRY UNITS

- A. Face Brick: ASTM C216, Grade SW, Type FBS; ASTM C67; use where brick is exposed, unless otherwise indicated.
 - 1. Unit Compressive Strength: Minimum average compressive strength of 5000 pounds per square inch, based on net area.

2. Initial Rate of Absorption: Less than 25 grams per 30 square inches of surface area per minute. Individual units shall not vary by more than five percent.
3. Efflorescence: Rated “not effloresced.”
4. Match color range, texture, and size of existing adjacent brickwork.
5. Coatings: Units to have post applied coating/stain per owner to match existing.
6. Provide shapes indicated and as follows:
 - a. For ends of sills, corners, and caps, and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs, with exposed surfaces finished.
 - b. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.

2.3 MORTAR

- A. Mortar: Type N; Section 04 05 01.

2.4 JOINT REINFORCEMENT, VENEER ANCHORS, AND REPAIR ANCHORS

- A. Veneer Anchors: Hot-dip galvanized steel; sized for cavity and collar joint conditions. Use one of the following or approved equal:
 1. DW-10HS Veneer Anchor by Hohmann & Barnard Inc.

2.5 AUXILIARY MATERIALS

- A. Weeps: Match height, depth, and thickness of head joints. Use the following or approved equal.
 1. QV - Quadro-Vents by Hohmann & Barnard, Inc.
- B. Drainage Mesh: Use the following or approved equal.
 1. Driwall Rainscreen 020-1 (1/4”) by Keene Building Products
- C. Cleaning Materials:
 1. Cleaning Solutions:
 - a. Use Enviro Klean Safety Klean by Prosoco, Inc.; Mix one part cleaner with three parts water by volume; or approved equal.
 - b. Do not use products containing hydrochloric (muriatic) acid, hydrofluoric acid, or ammonium bifluoride.
 - c. For removing localized ferrous staining: Use oxalic acid or phosphoric acid; mix one part acid with ten parts water by volume. Higher concentrations may be used for local application.
 2. Clean, potable water.
- D. Sealer/Stain:
 1. Clear penetrating water-based sealer:
 - a. Prime-A-Pell H2O Series 633 by Chemprobe, Tnemec Company, Inc.
 2. Penetrating water-based masonry stain:
 - a. Conformal Stain WB Series 617 by Chemprobe, Tnemec Company, Inc.
 - b. Color to match existing stain on building (“Sand” from manufacturer’s standard colors).
- E. Joint Sealants: Reference Section 07 92 00.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements and other conditions affecting installation or performance of repair Work.
 - 1. Ensure that work done by other trades is complete and ready for repair Work.
 - 2. Verify that areas and conditions under which repair Work is to be performed permit proper and timely completion of Work.
 - 3. Notify Engineer in writing of conditions which may adversely affect installation or performance of repair Work and recommend corrections.
 - 4. Do not proceed with repair Work until adverse conditions have been corrected and reviewed by Engineer.
 - 5. Commencing repair Work constitutes acceptance of Work surfaces and conditions.
- B. Remove and discard brick units that are chipped, broken, stained, or otherwise damaged beyond specified tolerances, or that do not match submitted sample.

3.2 PROTECTION

- A. Prevent mortar from staining face of surrounding brick masonry and other surfaces.
 - 1. Cover sills, ledges, and projections to protect from mortar droppings.
 - 2. Keep wall area below Work area wet to discourage mortar from adhering.
 - 3. Immediately remove mortar in contact with exposed brick masonry and other surfaces.
- B. Remove downspouts, signage, fixtures, and other items mounted to existing brick within/adjacent to Work and store. Reinstall when Work is complete.
 - 1. Provide temporary rain drainage during Work to direct water away from building.
- C. Take precautions to ensure safety of people (including building users, passers-by, and workers) and protection of property (including adjacent building elements, landscaping, and motor vehicles).
- D. Erect temporary protective canopies and walls, as necessary, at walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- E. Take precautions to protect against air-borne materials and run-off.
- F. Protect paving, sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- G. Prevent dust, debris, coating overspray/spatter, and other construction materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- H. Limit access to Work areas.
- I. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.
- J. Protect from damage, all elements of completed work and original construction to remain.

3.3 BRICK REMOVAL AND REPLACEMENT

- A. Remove bricks on all sides of second floor walkway as indicated on Drawings.
 - 1. Prior to beginning Work, notify Engineer and Owner's Representative of locations of damaged or deteriorated brick that are not indicated for repair in Contract Documents.
- B. Carefully demolish and remove entire units and mortar from joint to joint, without damaging surrounding brick masonry at main building, in manner that permits replacement with full-size units. Remove and replace sound bricks that are damaged during Work but not intended for removal at no cost to Owner.
- C. Support and protect brick masonry and other construction in and around removal areas.
- D. Notify Engineer of detrimental conditions including voids, cracks, bulges, displacements, and loose units in masonry backup, rotted wood, corroded metal, and other deteriorated conditions within components not scheduled for replacement/repair.
- E. Cover openings and partially completed Work with strong waterproof material at the end of each day, if precipitation is imminent, or when Work is not in progress. Extend waterproof material at least 2 feet beyond edges of opening and secure in place.
- F. Clean brick masonry surrounding removal areas by removing mortar, dust, and loose particles.
- G. Brick Installation:
 - 1. Install brick to match existing bonding and coursing pattern.
 - 2. If cutting is required, use motor-driven saw designed to cut brick masonry with clean, sharp, unchipped edges.
 - 3. Lay replacement brick as plumb and true to line as adjacent surfaces will permit; new brickwork shall be flush with existing.
 - 4. Lay replacement brick with completely filled bed and head, Do not furrow bed joints. Butter ends with sufficient mortar to fill head joints, and shove into place.
 - 5. Maintain joint width to match existing joints.
 - a. When mortar is thumbprint hard, tool exposed mortar joints in repair areas with round jointer slightly larger than width of joint. Tool joints to match adjacent existing joints.
 - 6. Do not pound corners and jambs to fit stretcher units after they are set in position. Where adjustment must be made after brick has been placed, remove and replace mortar.
 - 7. Install mortar at top and ends of repair by packing layers of mortar into joints with tuck pointer's tool.
 - 8. Install veneer anchors 16 inches on center horizontally and vertically unless noted otherwise on the drawings.
 - a. Install anchors 8 inches on center around perimeter of repair.
 - b. Embed anchors in mid-thickness of joint, with 3/4 inches minimum and 1 3/4 inches maximum cover from exterior face of veneer.
 - 9. Construct weeps 24 inches maximum on center, in head joints in first course immediately above flashing. Keep weeps free of mortar droppings.
 - 10. Keep wall cavity (collar joint) free of mortar. Back bevel bed joints down toward cavity to prevent mortar from extruding into cavity when units are placed. As Work progresses, trowel mortar fins against veneer face.
 - 11. If brick placement is stopped while in progress, either at the end of the day or for some other reason, stop horizontal runs by raking back mortar in each course one half unit length; do not terminate in vertical tooth pattern.

- H. Hot- and Cold-Weather Requirements: When ambient air temperature is below 40 degrees F, exceeds 100 degrees F, or exceeds 90 degrees F with wind velocity greater than 8 miles per hour, suspend Work or comply with requirements of TMS 602/ACI 530.1/ASCE 6 and governing codes.

3.4 BRICK SEALER/STAIN

- A. New mortar must be allowed to cure a minimum of 28 days before treatment. Treated surfaces must be sound, dry, and free of cracks, dirt, oils, efflorescence, paint, curing compounds and all other contaminants.
- B. Apply sealer/stain to the face of the new brick masonry per the Manufacturer's written instructions to match the existing brick masonry on the building.
- C. Mix materials well just prior to application using a power mixer to assure color uniformity.
- D. Allow the sealer to cure between 12 and 36 hours before applying the stain.
- E. Apply materials evenly until a uniform color and appearance is achieved.

3.5 EXPANSION JOINTS

- A. At locations shown on Drawings and as specified below, construct expansion joints for full length indicated, through full wythe thickness. Course in expansion joints; do not cut joint after installation of brick.
 - 1. Vertical expansion joints within brick veneer roughly in line with column lines.
 - 2. Vertical expansion joints at all inside and outside corners of brick veneer.
 - 3. Vertical expansion joints at brick veneer terminations.
- B. Install backer rod and sealant in vertical expansion joints as specified in Section 07 92 00. Color of sealant to match brick stain as closely as possible.

3.6 FIELD QUALITY CONTROL

- A. Notify Engineer:
 - 1. Of field conditions that deviate from repair details.
 - 2. At least 24 hours in advance of when lift device or scaffolding will be relocated. Do not relocate lift device or scaffolding until Engineer has observed completed Work at lift device or scaffold location.
- B. Allow Engineer use of lift device or scaffolding to observe progress and quality of Work.

3.7 CLEANING

- A. At the end of each workday:
 - 1. At the end of each workday, broom-clean Site and Work areas and place all items to be discarded in appropriate containers.
- B. Clean repair areas 24 to 48 hours after completion of Work.
 - 1. Cleaning equipment:
 - a. For acidic cleaners, use soft, nylon-bristle brush or roller. For neutral or alkaline cleaners, use soft, natural-bristle brush or roller.
 - b. Pressure rinsing equipment that can provide controlled application of heated water.

- 1) Allowable pressure: 400 to 600 pounds per square inch, or as approved by mockups.
 - 2) Water flow rate: 4 to 8 gallons per minute.
 - 3) Water may be heated to 120 degrees F to assist in cleaning.
 - 4) Use stainless steel nozzle with 15-to-40-degree fan spray.
 - 5) Equipment shall have no ferrous parts.
2. Remove large particles of mortar from exposed brick masonry surfaces with wood paddles or scrapers. Do not use metal scrapers or brushes unless approved by Engineer.
 3. Clean surfaces with Enviro Klean Safety Klean.
 - a. Saturate brick masonry with water and flush off loose mortar and dirt.
 - b. Liberally apply cleaning solution.
 - c. Allow to dwell for three to five minutes. Keep surface moist by misting as necessary during dwell time.
 - d. Reapply cleaning solution and gently scrub surface with soft brush.
 - e. Rinse thoroughly with low-pressure water, from bottom to top of wall. Keep wall below wet and rinsed free of cleaner and residue.
 4. Remove rust stains:
 - a. Prewet surface.
 - b. Liberally apply oxalic or phosphoric acid solution with soft, natural-bristle brush, being careful to completely cover surface of area, including crevices.
 - c. Allow to dwell for 15 minutes. Keep surface moist by misting as necessary during dwell time.
 - d. Immediately prior to rinsing, gently scrub surface with brush.
 - e. Rinse thoroughly to return pH to neutral.
 - f. Test pH of surface to confirm surface has returned to neutral.
 - g. Repeat cleaning sequence as necessary until cleaning standard is achieved.
 - h. Within one hour after first rinse, rinse second time with water at 100 psi pressure or less for at least two minutes to remove cleaner residue.
- C. After completing cleaning Work:
1. Clean spillage and soiling from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected surface. Exercise care to avoid scratching or damage to surfaces.
 2. Sweep and rake adjacent pavement, landscaping, and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt, and stains.
 3. Return building surfaces to condition prior to cleaning Work, including painted and glass surfaces, to satisfaction of Engineer at no additional cost to Owner.
 4. Repair at no cost to Owner all items damaged during the Work.
 5. Remove debris and surplus materials from Site.
 6. Reinstall signage, fixtures, and any other surface mounted items removed during demolition.

3.8 BRICK MASONRY SALVAGE AND WASTE DISPOSAL

- A. Unless otherwise indicated, excess brick units are Owner's property. At completion of masonry repair Work, store units in location approved by Owner's Representative.
- B. Remove scaffolding, equipment, surplus materials, debris, and refuse from Site and dispose of legally.

END OF SECTION

SECTION 04 05 01

MASONRY MORTAR AND GROUT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Supply and preparation of mortar and grout for masonry.
- B. Related Sections:
 - 1. Section 04 01 21 – Brick Masonry Repair and Replacement.

1.2 REFERENCES

- A. Definitions:
 - 1. Original Mortar: Mortar used in existing construction.
 - 2. Repointing: Process of raking out mortar joint to specified depth and placing new mortar. Also called tuckpointing.
- B. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International
 - a. C94/C94M: Standard Specification for Ready-Mixed Concrete.
 - b. C143/C143M: Standard Test Method for Slump of Hydraulic-Cement Concrete.
 - c. C144: Standard Specification for Masonry Mortar.
 - d. C150/C150M: Standard Specification for Portland Cement.
 - e. C207: Standard Specification for Hydrated Lime for Masonry Purposes.
 - f. C270: Standard Specification for Mortar for Unit Masonry.
 - g. C404: Standard Specification for Aggregates for Masonry Grout.
 - h. C476: Standard Specification for Grout for Masonry.
 - 2. The Masonry Society (TMS)/American Concrete Institute (ACI)/Structural Engineering Institute of American Society of Civil Engineers (ASCE).
 - a. TMS 402/ACI 530/ASCE 5: Building Code Requirements for Masonry Structures.

1.3 SUBMITTALS

- A. Product Data: Supplier's literature indicating compliance with specified requirements.
 - 1. Color admixtures: Product name and type, and name of manufacturer
 - 2. Dry, preblended mortar mix: Types and proportions of ingredients.
 - 3. Include Material Safety Data Sheets for information only.
- B. Certificates: Indicating compliance with specified requirements.
 - 1. Portland cement: Product name and type, and name of manufacturer.
 - 2. Hydrated lime: Product name and type, and name of manufacturer.
- C. Test Reports: For aggregates, indicating type, gradation, impurities, and source.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such manner as to prevent damage to materials and structure.

- B. Deliver materials to Site in original packages with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, and lot number.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, and installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
- D. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight.
 - 1. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
- G. Remove and replace materials that cannot be applied within stated shelf life.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Cementitious Materials:
 - 1. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
 - 2. Hydrated Lime: ASTM C207, Type S.
 - 3. Do not use masonry cement.
 - 4. Mortar: ASTM C144: washed aggregate consisting of natural sand or crushed stone.
 - 5. Grout: ASTM C404.
 - 6. Aggregate shall contain no more than 50 parts per million of chloride ions and shall be free of organic contaminants.
- B. Water: Clean and potable; free from deleterious amounts of acids, alkalis, or organic materials.
- C. Admixtures: Do not use admixtures without written approval, unless otherwise specified, including:
 - 1. Calcium chloride or admixtures containing calcium chloride.
 - 2. Air-entraining admixtures or material containing air-entraining admixtures.
 - 3. Antifreeze compounds.

2.2 MORTAR AND GROUT MIXES

- A. Mortar: ASTM C270; proportioned by volume as follows:
 - 1. Portland Cement: 1 part.
 - 2. Hydrated Lime:
 - a. Type N: Over 1/2 to 1 1/4 parts.

3. Aggregate: Not less than 2 1/4 and not more than 3 times sum of volumes of portland cement and hydrated lime.
 4. Water: Maximum amount consistent with optimum workability.
 5. Color: Match color of mortar to existing adjacent mortar joints, unless specified otherwise.
- B. Dry, Preblended Mortar Mix: Preblended mortar mix is not allowed.

PART 3 EXECUTION

3.1 SITE MIXING

- A. Develop batching and mixing operations so that quality control is assured.
- B. Designate 1 or 2 individuals to batch and mix mortar and grout. Fully instruct these individuals on batching and mixing procedures. No other persons shall batch or mix mortar or grout without prior notification to Engineer.
- C. Maintain accurate mix proportions. Batch materials by volume with containers of known volume. Do not measure materials by shovels.
- D. Combine and mix materials in appropriate drum-type batch machine mixer to uniform consistency.
 1. Mix mortar for 3 to 5 minutes after materials are in mixer.
 2. Provide sufficient number of mixers, including reserve mixers, so that mortar and grout placement operations will proceed uninterrupted.

3.2 REPOINTING MORTAR MIXING

- A. Pre-hydrate mortar:
 1. Thoroughly mix ingredients except water.
 2. Continue mixing, adding only enough water to produce damp unworkable mix which will retain its form when pressed into ball.
 3. Maintain mortar in dampened condition for 1 to 1 1/2 hours.
- B. Add sufficient water to bring mortar to proper consistency; that is, somewhat drier than conventional masonry mortars.
- C. Mortar shall be allowed to cure for a minimum of 7 days prior to loading. In order to expedite loading, Contractor may engage a certified testing laboratory to perform compressive strength testing of masonry to ensure sufficient strength to support masonry.

3.3 LIMITATIONS

- A. Mortar, including repointing mortar:
 1. If mortar begins to stiffen, it may be retempered one time only.
 2. Discard mortar not placed within 2 1/2 hours after initial mixing.

3.4 FIELD QUALITY CONTROL

- A. Mortar Testing: ASTM C780: (Optional by Owner)
 1. One set of 9 cubes will be made at random time each week during Work.
 2. Three cubes from each set will be tested in compression at 3, 7, and 28 days.

3. Field test results should approximate or exceed results from pre-construction testing.

END OF SECTION

SECTION 05 02 00
STRUCTURAL STEEL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fabrication and installation of miscellaneous steel elements.
 - 2. Connection to, or alteration of, existing steel elements.
- B. Related Sections:
 - 1. Section 09 97 13 - Steel Coating: Coating of installed steel elements.
- C. Payment:
 - 1. Steel beam repairs (Details 3-4/S3.1 and 7-8/S3.1) and shelf angle repairs (Details 1-4/S3.1): per unit, field measured by Contractor and rounded to the nearest 0.5 linear foot.
 - 2. New bracing installation (Detail 6/S3.1): per unit, each location.
 - 3. All other steel repair, strengthening, or replacement shown on Drawings: lump sum.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. American Institute of Steel Construction (AISC):
 - a. 303: Code of Standard Practice for Steel Buildings and Bridges.
 - b. 360: Specification for Structural Steel Buildings.
 - 2. American Welding Society (AWS):
 - a. D1.1/D1.1M: Structural Welding Code - Steel.
 - 3. ASTM International (ASTM):
 - a. A29/A29M: Standard Specification for Steel Bars, Carbon and Alloy, Hot-Wrought.
 - b. A36/A36M: Standard Specification for Carbon Structural Steel.
 - c. A276: Standard Specification for Stainless Steel Bars and Shapes.
 - d. A307: Standard Specification for Carbon Steel Bolts, Studs and Threaded Rod 60,000 PSI Tensile Strength.
 - e. A992/A992M: Standard Specification for Structural Steel Shapes.
 - 4. Research Council on Structural Connections (RCSC) Specification for Structural Joints Using High-Strength Bolts (RCSC Specification).

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Preconstruction Meeting:
 - 1. Conduct meeting at Project site.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Data and Test Reports:
 - 1. Structural steel elements

- C. Welder Performance Qualification Record (WPQR):
 - 1. Current WPQR (welder certification), qualified in accordance with Clause 4, Qualification, of AWS D1.1/D1.1M, for welders who will perform shop or site welding.
 - 2. WPQR shall be applicable to each WPS that welder will be designated to perform.
- D. Mill Test Reports: Signed by steel manufacturer certifying compliance with appropriate specification; include physical properties and chemical analysis.
- E. Welding Qualification Data:
 - 1. Welding Procedure Specification (WPS) for each weld type, process, parameters (i.e. wire speed, voltage, amperage, etc.), and position, whether prequalified or qualified by testing by AWS D1.1/D1.1M, including the following:
 - a. Certificate of conformance and product information sheet for consumables listed in the WPS.
 - b. Supplemental welding procedures.
 - 2. Procedure Qualification Record (PQR) of satisfactory certification testing for each non-prequalified welding procedure.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualification: Experienced firm that has successfully completed steel fabrication work similar in material, design, and extent to that indicated for Project. Must have successful fabrication with specified materials in local area in use for minimum of five years.
- B. Installer Qualifications: Experienced firm that has successfully completed miscellaneous steel installation work similar in material, design, and extent to that indicated for Project. Must have successful construction with specified materials in local area in use for minimum of five years.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver store, and handle materials to prevent damage to materials or structure.
- B. Store elements off ground and spaced with pallets, dunnage, or other supports and spacers. Store to permit easy access for inspection and identification.
- C. Store fasteners in protected place. Clean and re-lubricate bolts and nuts that become dry or rusty before use per manufacturer's written recommendations.
- D. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid damage or permanent structure deflection.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to installation of steel elements. Notify Engineer of conditions found to be different than those indicated in Contract Documents. Engineer will review situation and inform Contractor and Installer how to proceed
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Handle and install materials in strict accordance with safety requirements required by local, state, and federal rules and regulations.

1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
 - 1. Notify Engineer prior to proceeding with the Work of conditions that may interfere with, preclude proper execution of, or jeopardize the performance of the Work.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

- A. W- and WT-Shapes: ASTM A992/A992M.
- B. Channels, Angles, M-Shapes, and S-Shapes: ASTM A36/A36M.
- C. Plates and Bars: ASTM A36/A36M.
- D. Welding Electrodes: Comply with AWS D1.1 requirements.

2.2 AUXILIARY MATERIALS

- A. High-Strength Bolts: ASTM F3125 Grade A325, Type 1, heavy hex, plain finish.
 - 1. Nuts: ASTM A563, Grade C, heavy hex, plain finish.
 - 2. Washers: ASTM F436, Type 1, plain finish.

2.3 FABRICATION

- A. Fabricate and assemble in shop to greatest extent possible. Comply with requirements of AISC 303, including tolerances.
 - 1. Cut, drill, and punch elements cleanly and accurately.
 - a. Remove burrs.
 - 2. Thermal Cutting:
 - a. Structural Steel: When thermal cutting is necessary, mechanically thermal cut to greatest extent possible. Grind thermally-cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.
 - 3. Grind edges of members to be coated to minimum radius of about 1/32 inch unless otherwise indicated. Members that will be shop coated only do not need to have edges ground.
 - a. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible.
 - b. Weld exposed joints continuously and grind smooth.
- B. Welded Connections, Structural Steel: Comply with AWS D1.1/D1.1M for preheating, required profiles, tolerances, weld appearance, weld quality, and for methods used in correcting welding work.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Installer for compliance with requirements and other conditions affecting installation or performance of miscellaneous steel elements.
 - 1. Verify that areas and conditions under which Work is to be performed permit proper and timely completion of Work.
 - 2. Notify Engineer in writing of conditions which may adversely affect installation or performance of steel elements. Do not proceed with steel installation until adverse conditions have been corrected and reviewed by Engineer. Commencing miscellaneous steel Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Take precautions to ensure safety of people (including building users, passers-by, and workers) and protection of property (including adjacent building elements, landscaping, and motor vehicles).
 - 1. Erect temporary protective canopies and walls, as necessary, at walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- B. Protect paving and sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- C. Prevent dust, debris, coating overspray/spatter, and other construction materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- D. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.
- E. Limit access to Work areas.
- F. Protect from damage, all elements of completed work and original construction to remain.

3.3 INSTALLATION, GENERAL

- A. General:
 - 1. Install miscellaneous steel elements in accordance with requirements of AISC 303.
 - 2. Position steel elements accurately in location, alignment, and elevation indicated; with edges and surfaces level, plumb, true, and free of rack.
 - a. Maintain erection tolerances specified by AISC 303.
 - b. Perform cutting, drilling, and fitting required to install steel elements.
 - 3. Provide temporary support for new and existing elements during removal of existing elements and/or installation of new elements to keep elements secure, plumb, and in alignment. Do not remove temporary supports until the installation is complete.
 - 4. Align and adjust various members forming part of the assembly before permanently fastening.
 - a. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with adjacent elements.
 - b. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

- c. Make allowances for difference between temperature at time of installation and mean temperature when structure is completed and in service.
- B. Welded Connections, Structural Steel: Comply with AWS D1.1/D1.1M for preheating, required profiles, tolerances, weld appearance, weld quality, and for methods used in correcting welding work.
1. Perform welding in accordance with approved WPSs by properly certified welders. Take precautions for fire hazards at adjacent construction.
 2. Where existing members are to be welded, shore existing members in accordance with Drawings. Do not heat existing members more than necessary to achieve a satisfactory weld. Place welding work lead as close as possible to weldment being executed.
- C. Bolted Connections: Install high-strength bolts according to the RCSC Specification for joint conditions indicated on Drawings. Use snug-tight requirements unless noted otherwise.
1. Snug-Tight Joints:
 - a. Faying surfaces and surfaces adjacent to bolt head and nut shall be free of dirt and other foreign material.
 - b. Install snug-tight joints such that connected plies are brought into firm contact by the bolts in the joint and bolts have been sufficiently tightened to prevent removal of nuts without the use of a wrench.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified special inspector to verify and inspect aspects of the steel installation and to inspect welds. Welding inspection and welding inspector qualifications shall be in accordance with AWS D1.1/D1.1M.
1. Provide testing agency with access to places where Work is being installed to perform inspections.
 2. Provide notice to testing agency of installation schedule.
- B. Bolted Connections: Bolted connections will be inspected and tested according to RCSC Specification Section 9 and the requirements of the applicable building code.
1. Prior to the start of Work, verify that fastener components meet the requirements of RCSC Specification Section 2 and connected plies meet the requirements of RCSC Specification Section 3.
 2. Visually verify that connected plies are in firm contact and that washers are used as required in RCSC Specification Section 6.
 3. For snug-tight connections verify that bolts have been tightened sufficiently to prevent turning of the nut without the use of a wrench, per RCSC Specification Section 9.1.
- C. Correct deficiencies in Work that inspection and testing indicate do not comply with Contract Documents.

END OF SECTION

SECTION 05 31 13
STEEL FLOOR DECKING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes the fabrication and installation of steel floor deck where indicated on Drawings.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast in Place Concrete.
 - 2. Section 05 02 00 - Structural Steel.
- C. Payment: Lump sum.

1.2 SUBMITTALS

- A. Product Data: For each type of deck, accessory, and product indicated.
- B. Welding certificates.
- C. Product Certificates: For each type of steel deck.

1.3 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

2.2 NON-COMPOSITE FORM DECK

- A. Manufacturers: Subject to compliance with requirements, provide products manufactured by the following:
 - 1. Nucor Corp.; Vulcraft Group
 - 2. Approved equal.

- B. Noncomposite Form Deck: Fabricate ribbed-steel sheet noncomposite form-deck panels to comply with "SDI Specifications and Commentary for Noncomposite Steel Form Deck," in SDI Publication No. 31, with the minimum section properties indicated, and with the following:
 - 1. Galvanized Steel Sheet: ASTM A653, Structural Steel (SS), Grade 33, G-90 zinc coating; cleaned, and pretreated.
 - 2. Profile Depth: 9/16 inch.
 - 3. Design Uncoated-Steel Thickness: 0.0239 inch.
 - 4. Span Condition: Two or more spans.
 - 5. Type: Vulcraft 0.6CSV24 (vented)

2.3 ACCESSORIES

- A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, self-threading screws.
- C. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.
- D. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- E. Galvanizing Repair Paint: ASTM A780, with dry film containing a minimum of 94 percent zinc dust by weight.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.
- B. Install temporary shoring before placing deck panels if required to meet deflection limitations.
- C. Locate deck bundles to prevent overloading of supporting members.
- D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned before being permanently fastened. Do not stretch or contract side-lap interlocks.
- E. Place deck panels flat and square and fasten to supporting frame or adjacent decking without warp or deflection.
- F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

- G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.

3.3 FLOOR DECK INSTALLATION

- A. Fasten floor-deck panels to steel supporting members as indicated in Drawings
- B. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints lapped or butted, at Contractor's option.
 - 1. Lapped end joints, if selected by Contractor, shall be permitted only if overlapping sheets nest tightly and do not reduce net thickness of concrete slab by more than 1/8 inch.
- C. Pour Stops: Weld steel sheet pour stops to supporting structure according to SDI recommendations unless otherwise indicated.
- D. Floor-Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck

3.4 FIELD QUALITY CONTROL

- A. Remove and replace work that does not comply with specified requirements.

3.5 PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A780 and manufacturer's written instructions.

END OF SECTION

SECTION 07 18 00
TRAFFIC COATINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Surface preparation, supply, and application of traffic coating on second floor walkways.
- B. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete.
 - 2. Section 07 92 00 - Joint Sealants.
- C. Payment: lump sum.
- D. Bid Alternates: in lieu of installing light-to-medium duty system, install heavy-duty system.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International:
 - a. D4258: Standard Practice for Surface Cleaning Concrete for Coatings.
 - b. D4259: Standard Practice for Abrading Concrete.
 - c. D4263: Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - 2. International Concrete Repair Institute (ICRI):
 - a. Technical Guide No. 310.2R - 2013 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
 - 1. With Owner's Representative.
 - 2. With other trades:
 - a. To ensure that work done by other trades is complete and ready for traffic-coating Work.
 - b. To avoid or minimize work on, or in immediate vicinity of, traffic-coating Work in progress.
 - c. To ensure that subsequent work will not adversely affect quality of completed traffic coating.
- B. Pre-application Meeting:
 - 1. Conduct meeting at Site.
 - 2. Time, date, location, and attendee notification to be facilitated by Contractor.
 - 3. Review requirements for traffic coating, including:
 - a. Construction schedule.
 - b. Availability of materials, Applicator's personnel, equipment, and facilities needed to make progress and avoid delays.
 - c. Site use, access, staging, and set-up location limitations.

- d. Approved mockup procedures.
 - e. Impact of forecast weather conditions.
 - f. Surface preparation and substrate condition.
 - g. Application procedures.
 - h. Special details and sheet flashings.
 - i. Minimum curing period.
 - j. Testing and inspection requirements.
4. Contractor's Site superintendent, traffic-coating manufacturer's technical representative, Applicator's foreman, Owner's Representative, and Engineer shall attend.

1.4 SUBMITTALS

- A. Product Data: Traffic-coating manufacturer's literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; and application instructions. Include VOC content of components.
 1. Include traffic-coating manufacturer's color chart.
- B. Samples: For each type of traffic coating required, stepped samples on rigid backing large enough to illustrate build-up of traffic coatings, of same thickness and material indicated for Work.
- C. Applicator Qualifications:
 1. Certification signed by traffic-coating manufacturer, certifying that Applicator complies with manufacturer's requirements to install specified, warranted, traffic coating.
 2. Evidence that Applicator's *existing company* has minimum five years of continuous experience in similar traffic-coating work; list of at least five representative, successfully-completed projects of similar scope and size, including:
 - a. Project name.
 - b. Owner's name.
 - c. Owner's Representative name, address, and telephone number.
 - d. Description of work.
 - e. Traffic-coating materials used.
 - f. Project supervisor.
 - g. Total cost of traffic-coating work and total cost of project.
 - h. Completion date.
- D. Sample Warranties: Copies of traffic-coating manufacturer's warranty and Applicator's warranty, both stating obligations, remedies, limitations, and exclusions. Submitted with bid.
- E. Following completion of the Work:
 1. Traffic-coating manufacturer's warranty inspection reports.
 2. Completed warranty from traffic-coating manufacturer.
 3. Completed warranty from Applicator.
- F. Maintenance Manual: Upon completion of the work required by this Section, submit one Maintenance Manual, identified with project name, location and date; type of coating system applied; and surface to which system was applied, including sketches where necessary. Include recommendations for periodic inspections, care and maintenance. Identify common causes of damage with instructions for temporary patching until permanent repair can be made.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications:
 - 1. Work specified herein shall be performed by, and be the responsibility of, the Contractor approved by the manufacturer of materials used; having necessary equipment and facilities to fulfill requirements of this section.
 - 2. The Contractor shall submit evidence of manufacturer's approval, including listing of five (5) or more installations and a minimum of five (5) years of installation experience where materials and methods herein specified were used.
 - 3. An on-site supervisor shall be provided by the Contractor for the duration of the membrane work. This supervisor shall have had two years documented supervisory experience with the products to be used.

- B. Mockups: Prior to start of Work or purchase of material, apply 40 square feet of traffic coating at location determined by Engineer, to demonstrate surface preparation, joint and crack treatment, thickness, texture (including slip resistance), color, and standard of workmanship.
 - 1. If Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
 - 2. Approved mockup will be standard for judging completed Work.
 - 3. Maintain approved mockups in undisturbed condition during Work as standard for judging completed Work. Mockups, if undamaged at time of Substantial Completion, may be incorporated into Work.
 - 4. Manufacturer's representative should be on-site to observe surface preparation and pre-striping prior to installation of mock-up. Additional visits should be made by manufacturer's representative to observe and accept mock-up.
 - 5. Perform destructive adhesion and dry film thickness testing per the requirements of Par. 3.7 in presence of manufacturer's representative.

1.6 PRODUCT DELIVERY

- A. Deliver material to project in sealed, original packages or containers bearing name and brand of manufacturer, date of manufacturer and lot number. Each container shall have manufacturer's printed label.

- B. Store materials in single place designated by the Owner or the Engineer. Keep storage place neat and clean and correct any damage thereto or to its surroundings. Cleaning rags and waste materials shall be deposited in metal containers having tight covers or removed from the garage each night. Every precaution shall be taken to avoid danger of fire. Provide dry chemical or CO2 fire extinguishers in area. Allow no smoking or open containers of solvents. Store solvents in safety cans.

- C. Store materials according to Manufacturer's recommendations with normal handling to prevent damage to container.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of traffic-coating Work. Notify Engineer of conditions found to be different than those indicated in the Contract Documents. Engineer will review situation and inform Contractor and Applicator how to proceed.

- B. Comply with Owner's limitations and restrictions for Site use and accessibility.

- C. Ensure that drains are operational at the end of each workday or if precipitation is forecast.
- D. Environmental Limitations: Apply traffic coating when existing and forecast weather conditions permit traffic coating to be installed according to traffic-coating manufacturer's written instructions and warranty requirements. Do not apply traffic coating under the following conditions, unless otherwise recommended by traffic-coating manufacturer and approved by Engineer.
 - 1. Apply only when substrate temperature is above 50 degrees F or more than 5 degrees F above dew point, or within range recommended by traffic-coating manufacturer.
 - 2. Apply only when ambient temperature is above 40 degrees F or within range recommended by traffic-coating manufacturer.
 - 3. Do not apply to damp or wet substrate; when relative humidity exceeds 85 percent; in snow, rain, fog, or mist; or when snow, rain, fog, or mist is forecast during application or curing period. Apply only to frost-free substrate.
- E. Handle and install materials in strict accordance with safety requirements required by traffic-coating manufacturer; Safety Data Sheets; and local, state, and federal rules and regulations
- F. Maintain adequate ventilation during preparation and application of traffic-coating materials. Notify Owner's Representative at least one week in advance of Work with materials with noxious vapors. Review application schedule and venting precautions with Owner's Representative prior to beginning application.
- G. Protect adjacent surfaces and materials with covering, masking, and drop cloths as required to keep adjacent surfaces free of coating. Upon completion, remove protection and clean. Surfaces soiled or damaged by special coating shall be cleaned or replaced at no cost to Owner.

1.8 WARRANTY

- A. The Contractor shall provide a single source performance warranty that the membrane system as installed by the Contractor, will not for any reason leak, tear, blister, flake or debond from the concrete substrate for a period of 5 years starting from the date of substantial completion. Any repairs required during the warranty period shall be performed at no additional cost to the Owner.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Obtain materials through one source from single traffic-coating manufacturer. Provide materials not available from traffic-coating manufacturer from sources approved by traffic-coating manufacturer. Provide new materials.
- B. Epoxy Based Primer/Overlay Material:
 - 1. MasterSeal 350, by Master Builders Solutions, or Approved Equal.
- C. Pedestrian Traffic Coating:
 - 1. MasterSeal Traffic 1500, by Master Builders Solutions, or Approved Equal. Color to be Gray.
 - a. Light to medium duty system (Base Bid)
 - 1) Base coat: MasterSeal M200

- 2) Top coat: MasterSeal TC225
- b. Heavy duty system (Alternate No. 1)
 - 1) Base coat: MasterSeal M200
 - 2) Intermediate coat: MasterSeal TC225
 - 3) Top coat: MasterSeal TC225

2.2 RELATED MATERIALS

- A. Primer: MasterSeal P 173, P 222, P220, if required.
- B. Aggregate: MasterSeal 940 and 941
- C. Membrane reinforcement fabric at cracks and joints: MasterSeal 995
- D. Sealants: Reference Section 07 92 00 - Joint Sealants
- E. Cleaning Agents: MasterSeal 990 or xylene.

2.3 EQUIPMENT

- A. Equipment, as required, to remove existing membrane, caulking or sealants.
- B. Compressed air equipment capable of removing dust and dirt from concrete surface.
- C. Necessary equipment to install membrane.

PART 3 EXECUTION

3.1 SURFACE PREPARATION AND INSTALLATION OF EPOXY PRIMER/OVERLAY

- A. Clean and prepare concrete substrate according to primer/overlay manufacturer's written instructions and as follows. Provide clean, dust-free, and dry substrate.
 - 1. Verify that concrete repair patches have cured and aged for minimum time period recommended by primer/overlay manufacturer.
 - 2. Remove all existing sealants within control joints, cracks, etc.
 - 3. Clean concrete surfaces by abrasive blast, according to ASTM D4259, to expose top surface of fine aggregate and provide sound surface, free of laitance, dirt, and other loose or foreign material. Use self-contained, recirculating, blast-cleaning apparatus. Remove remaining loose material and clean surfaces according to ASTM D4258. Produce surface texture equal to CSP 3 from ICRI 310.2.
 - 4. Sandblast vertical and other concrete and steel surfaces where shotblast does not reach.
 - 5. Follow shotblast and sandblast activities by cleaning with a compressed air jet. Concentrate the air jet at cracks, control and construction joints, and repair perimeter interfaces to ensure that shot and sand particles and other contaminants are removed from these crevices.
 - 6. Verify that ready-mix concrete has cured and aged for a minimum of twenty-eight (28) days before applying membrane traffic coating. Proprietary repair materials shall cure the longer of the following: seven (7) days, until the material reaches 75 percent of its 28-day compressive strength, or the period recommended by traffic-coating manufacturer.
 - 7. Verify that substrate is sound and is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D4263.

- B. Slab surfaces that have spalls or scaling in the concrete shall be treated first with an epoxy/sand mixture (1 part epoxy to 3-4 parts sand) per the manufacturer's instructions. Treatment of spalls/scaling up to 1100 square feet shall be included in the base bid. Notify engineer if spalls or scaling exceed 3/4 inch in depth.
- C. Commencement of primer/overlay installation implies Contractor acceptance of substrate area as suitable to accept the materials.
- D. Prior to application of the traffic coating system, drill 1/2" diameter holes or 1" slots (with cutting wheel) at 18 in. on center each way through the metal decking below the concrete.
- E. Install new sealants flush within existing control joints, per Section 07 92 00. Rout or sawcut cracks exceeding 1/16 in. in width and also fill flush with sealant. Width of routed sealant joint shall not exceed 1/2 in. Sealant shall be tested for compatibility with membrane and approved in writing for use by both the sealant and membrane manufacturers. Broadcast sealant joints with light layer of sand where joints will receive epoxy primer/overlay.
- F. Do not apply the primer/overlay until the sealant joints are fully cured. Sealants shall cure a minimum of 48 hours prior to installation of primer/overlay, or per manufacturer's recommendations.
- G. Protect adjacent surfaces with drop cloths or masking as required.
- H. Apply epoxy-based primer/overlay material at the manufacturer's recommended dry film thickness to all concrete substrates to receive traffic coating.
- I. Uniformly broadcast manufacturer's recommended aggregate/sand over the surface at the manufacturer's recommended rate. Incorporate aggregate per manufacturer's recommendations. Excess resin may come to the top, and another application of sand to refusal must be done in these areas.

3.2 TRAFFIC COATING INSTALLATION

- A. Ensure surfaces are sound, clean, and dry prior to installation of coating. Thoroughly clean all surfaces to receive coating materials in strict accordance with manufacturer's instructions and recommendations. If dirt or contaminants collect on intermediate coats, re-clean as required per manufacturer's recommendations prior to applying next coat.
- B. Apply 3/4 in. sealant cant bead around all penetrations through membrane and at the base of vertical surfaces (such as columns or flashings), per manufacturer's instructions.
- C. Materials shall be installed by a manufacturer's approved applicator in strict accordance with the manufacturer's written specifications. All procedures for installation shall comply with recommendations of manufacturer of products being used.
- D. Application of a nonskid, abrasive resistant topping shall be in strict accordance with manufacturer's directions.
- E. The membrane system shall be installed up the face of the steel columns and adjacent metal flashings as indicated on the drawings.
- F. The membrane system shall be terminated at the perimeter of all drains into a routed and sealed termination.

- G. Terminations and all unusual situations shall be detailed per the Manufacturer's recommendations.

3.3 PRIMER AND DETAIL WORK

- A. Apply primer to metal/steel substrates as required by traffic-coating manufacturer.
- B. Apply the manufacturer's recommended dry film thickness of non-flowing type detail coating over all joints, cracks, and perimeter sealant coves in accordance with the manufacturer's recommendations.
- C. Where indicated on the drawings or as recommended by the manufacturer, provide 6 inch wide mesh reinforcing fabric. Install tape into wet membrane over joint and roll with additional layer of membrane.

3.4 BASE COAT

- A. Apply coating material at the manufacturer's recommended dry film thickness, if greater than the minimum specified. Extend coating over all detail coatings and prepared substrates. Use masking tape to obtain straight lines at terminations.
- B. Allow to cure for 6 hours minimum, or per manufacturer's recommendation. At temperatures less than 75 degrees F (24 degrees C) and relative humidity less than 50 percent, extend curing time.
- C. If pinholes, blisters, or bubbles occur in base coat, apply additional base coat material using flat squeegee or other tool approved by traffic-coating manufacturer, to fill holes before proceeding with subsequent coats. Ensure that subsequent coats do not develop additional pinholes, blisters, or bubbles. Contact Engineer and manufacturer's representative and do not proceed with installation until adverse conditions or techniques have been satisfactorily corrected.
- D. Do not seed base coat with aggregate.

3.5 INTERMEDIATE AND FINISH COATS

- A. Apply coating material at the manufacturer's recommended dry film thickness, if greater than the minimum specified, to all areas which have been previously coated.
- B. Apply additional primer onto top of base coat if recommended by manufacturer to ensure bond between coats.
- C. While coating is still fluid, uniformly broadcast manufacturer's recommended aggregate over the surface at the manufacturer's recommended rate. Immediately roll to evenly distribute and completely coat the aggregate. Incorporate aggregate per manufacturer's recommendations. Additional aggregate may have to be added after the first pass.
- D. If required by the manufacturer, apply finish coat(s) over the intermediate coat. Apply additional coats in accordance with the manufacturer's requirements.
- E. Allow coat to cure for 36 hours minimum before permitting traffic on surfaces. At temperatures less than 75 degrees F (24 degrees C) and relative humidity less than 50 percent, extend curing time.

3.6 FIELD QUALITY CONTROL

- A. Pinholing of the membrane will be cause for rejection. Installer shall repair and take the necessary steps to prevent pinholing to occur at no additional expense to the Owner.
- B. Engineer may take a minimum of one sample (one-square inch) of new traffic-coating system for every 4,000 square feet of traffic-coating installed. Dry film thickness will be measured.
 - 1. Dry film thickness is satisfactory if not less than minimum thickness specified by traffic-coating manufacture or this Section, whichever is greater.
 - 2. If dry film thickness is too thin, apply additional material at no cost to Owner, or perform other remedial action recommended by traffic-coating manufacturer or Engineer.
 - 3. Patch sample areas with traffic-coating system.
- C. Adhesion tests shall be performed by the manufacturer's representative for the coating system.
 - 1. Perform pull-off tests per the requirements of ASTM D7234. Perform a minimum of three individual tests at each area to be evaluated. For test to be valid, failure must occur within the membrane or concrete substrate; if failure occurs at the adhesive for the test dolly, perform a second test. Adhesion will be considered adequate if failure occurs at a stress greater than 175 psi if failure occurs in the concrete substrate, or 300 psi if failure occurs in adhesion.
 - 2. The Contractor shall be responsible for patching the areas disrupted by testing.

3.7 CLEANING

- A. Clean stains from adjacent surface with xylene or MasterSeal 990. Damaged, spotted or smeared parts of building and equipment shall be repaired and cleaned by this Contractor.
- B. Work and/or materials damaged beyond repair, in the opinion of the Engineer, shall be replaced by the Contractor.
- C. Remove foreign matter from finished coating surfaces.
- D. Clean up all rubbish, debris, surplus material, tools and equipment and remove from site.

END OF SECTION

SECTION 07 25 00

WEATHER-RESISTIVE BARRIER AND FLEXIBLE FLASHING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Surface preparation, supply, and installation of self-adhered weather-resistive barrier (WRB) and flexible flashing.
- B. Related Sections:
 - 1. Section 04 01 21 - Brick Masonry Repair and Replacement.
 - 2. Section 04 05 01 - Masonry Mortar and Grout.
 - 3. Section 07 62 00 - Sheet Metal Flashing and Trim.
 - 4. Section 07 92 00 - Joint Sealants.
- C. Payment: lump sum.

1.2 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected; that new materials and building interior are kept continuously dry; and that continuous, watertight, new WRB and flashing installation is provided. Coordinate:
 - 1. To ensure that work done by other trades is complete and ready for WRB and flexible flashing Work.
 - 2. To avoid or minimize work on, or in immediate vicinity of, WRB and flexible flashing Work in progress.
 - 3. To ensure that subsequent work will not adversely affect completed WRB and flexible flashing Work.
- B. Pre-installation Meeting:
 - 1. Attend meeting at Site.
 - 2. Review requirements for WRB and flexible flashing Work, including:
 - a. Construction schedule.
 - b. Availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - c. Site use, access, staging, and set-up location limitations.
 - d. Forecast weather conditions.
 - e. Surface preparation and substrate condition and pretreatment.
 - f. Installation procedures.
 - g. Special details and condition of other construction that will affect WRB and flexible flashing Work.
 - h. Testing and inspection requirements.
 - i. Temporary protection and repairs of WRB and flexible flashing Work.
 - j. Government regulations.
 - 3. Contractor's Site superintendent, WRB and flexible flashing manufacturer's technical representative, WRB and flexible flashing Installer, Owner's Representative, and Engineer shall attend.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; and installation instructions. Include VOC content of liquid components.
 - 1. Include temperature ranges for storage and application of materials, and special cold-weather application requirements or limitations.
 - 2. Include Safety Data Sheets (SDS) for information only; safety restrictions are sole responsibility of Contractor.
- B. Shop Drawings: Include sections, details, and attachments to other work; for details and fabrications not shown on Drawings.
 - 1. Termination and tie-in conditions.
 - 2. Substrate joints and cracks.
 - 3. Inside and outside corners.
- C. Installer Qualifications:
 - 1. Certificate signed by WRB and flexible flashing manufacturer, certifying that Installer complies with requirements.
 - 2. Evidence that Installer's *existing company* has minimum 5 years of continuous experience in similar work; list of at least 5 representative, successfully-completed projects of similar scope and size, including:
 - a. Project name.
 - b. Owner's name.
 - c. Owner's Representative name, address, and telephone number.
 - d. Description of work.
 - e. WRB and flexible flashing used.
 - f. Project supervisor.
 - g. Total cost of WRB and flexible flashing work and total cost of project.
 - h. Completion date.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced firm that has successfully completed WRB and flexible flashing work similar in material, design, and extent to that indicated for Project; that is approved, authorized, or licensed by manufacturer to install WRB and flexible flashing; and that is eligible to receive WRB and flexible flashing manufacturer's warranty. Must have successful installations of specified materials in local area in use for minimum of five years.
 - 1. Employ foreman trained by WRB and flexible flashing manufacturer and with minimum five years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during Work. Do not change foremen during course of Project except for reasons beyond control of Installer; inform Engineer in advance of any changes.
- B. Mockups: Prepare surface and apply WRB, flexible flashing, and accessory materials at mockup location indicated by Engineer to demonstrate surface preparation, flashing integration, aesthetic affects, and quality of materials and execution.
 - 1. Notify Owner's Representative and Engineer 7 days in advance of date when mockups will be constructed.
 - 2. If Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
 - 3. Approved mockups may become part of completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such a manner as to prevent damage to materials or structure.
- B. Deliver materials to Site in original containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.
- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, and installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
- D. Store materials in original undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight. Manufacturer's standard packaging and covering is not considered adequate weather protection.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
- G. Remove and replace materials that cannot be applied within stated shelf life.

1.6 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of Work. Notify Engineer of conditions found to be different than those indicated in Contract Documents. Engineer will review situation and inform Contractor and Installer of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Environmental Limitations: Install WRB and flexible flashings when existing and forecast weather conditions permit materials to be installed according to manufacturer's written instructions and warranty requirements.
 - 1. Do not install materials when ambient or substrate temperatures are below 40 degrees F or are expected to fall below 40 degrees F in next 12 hours.
 - 2. Do not proceed with installation during inclement weather except for temporary work necessary to protect building interior and installed materials. Remove temporary work and Work that becomes moisture damaged.
- D. Handle and install materials in strict accordance with safety requirements required by material manufacturer, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference on Site.

1.7 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with Contract Documents. Such conditions may interfere with Work and may consist

of damage or deterioration of substrate or surrounding materials that could jeopardize integrity or performance of Work.

1. Notify Engineer of conditions that may interfere with proper execution of Work or jeopardize performance of Work prior to proceeding with Work.

PART 2 PRODUCTS

2.1 WEATHER-RESISTIVE BARRIER

- A. Self-adhering weather-resistive barrier membrane: Use one of the following or approved equal:
1. Blueskin VP 160 manufactured by Henry®
 2. Vycor® enV-S™ manufactured by GCP Applied Technologies, Inc.
 3. X-Barrier Peel & Stick Barrier manufactured by Hohmann & Barnard, Inc.
 4. CCW-705 manufactured by Carlisle Coatings & Waterproofing Inc.

2.2 FLEXIBLE FLASHINGS

- A. Self-adhering, rubberized-asphalt, flexible flashing: Use one of the following or approved equal:
1. Blueskin SA manufactured by Henry®
 2. Perm-A-Barrier Wall Flashing or Vycor V40 Self-Adhered Flashing manufactured by GCP Applied Technologies, Inc.
 3. TeXtroflash Flashing manufactured by Hohmann & Barnard, Inc.
 4. CCW-705-TWF manufactured by Carlisle Coatings & Waterproofing Inc.

2.3 AUXILIARY MATERIALS

- A. General: Furnish auxiliary materials recommended by WRB and flexible-flashing manufacturers for intended use and compatible with materials.
- B. Primer: Liquid primer recommended for substrate.
- C. Termination Sealant, Mastics, Adhesives, and Tape: As recommended by WRB and flexible flashing Manufacturer.
- D. Sheathing Boards: Thermo-Ply Red AMG Structural Sheathing by Ox Engineered Products, LLC, or approved equal, with the following accessories:
1. Seam Tape: 2-7/8" OX Seam Tape or approved equal
 2. Fasteners: No.8-18 x 1-1/4" phillips modified truss head self-drilling screws.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Installer and manufacturer's representative for compliance with requirements and for other conditions affecting installation or performance of WRB and flexible flashings.
1. Ensure that work done by other trades is complete and ready for WRB and flexible flashing Work.
 2. Verify that areas and conditions under which WRB and flexible flashing Work is to be performed permit proper and timely completion of Work.

3. Do not proceed with application of air barrier membrane when rain is expected within 24 hours.
4. Notify Engineer in writing of conditions which may adversely affect installation or performance of WRB or flexible flashings.
5. Do not proceed with WRB or flexible flashing Work until adverse conditions have been corrected and reviewed by Engineer.
6. Commencing WRB or flexible flashing Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Take precautions to ensure safety of people, including building users, passersby, and workmen; animals; and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- C. Protect paving, sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.
- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 SURFACE PREPARATION AND SHEATHING INSTALLATION

- A. Clean, prepare, and treat substrates according to WRB and flexible-flashing manufacturer's written instructions. Provide clean, sound, dust-free, and dry substrate.
 1. Repair or replace deteriorated sections of substrate.
 2. Fill divots, chips, spalls, and other irregularities in substrate. Fill in or cover gaps, joints, and cracks to provide continuous substrate for WRB and flexible flashing. Remove sharp projections.
 3. Remove grease, oil, and other surface contaminants and foreign materials.
- B. Install new sheathing boards over new cold-formed steel framing.
- C. Ensure that the sheathing boards are sufficiently stabilized with corners and edges fastened with appropriate fasteners in accordance with exterior sheathing manufacturers written instructions. Mechanical fasteners used to secure sheathing boards shall be set flush with sheathing and fastened into solid backing.
- D. Install seam tape over sheathing board joints per sheathing manufacturer's written instructions.

3.4 INSTALLATION OF FLEXIBLE FLASHINGS

- A. Supply and install sheet metal drip flashings.
- B. Prime surfaces where recommended by flexible flashing manufacturer and allow to dry

- C. Apply flexible flashing membrane along shelf angles according to flexible flashing manufacturers written instructions.
 - 1. Press membrane firmly into place, overlap minimum 2 inches at all end and side laps. Promptly roll all laps and membrane to ensure the seal.
 - 2. Applications shall form a continuous flashing membrane and shall extend up a minimum of 8 inches up the back-up wall.
 - 3. At inside and outside corners extend membrane a minimum of 3 inches on either side of the corner detail.
 - 4. Extend membrane to 1/2-inch from drip edge brake or 1-inch from outside edge of brick veneer, whichever is greater. Provide end dam flashing at terminations.
- D. Seal the top edge of the membrane where it meets the substrate using termination sealant. Trowel-apply a feathered edge to seal termination to shed water. Apply bead or towel coat of mastic along laps, cuts, and penetrations.
- E. Exercise care to prevent damage to flexible flashing.
 - 1. Repair or remove and replace flexible flashing that does not comply with requirements. Patch holes in flexible flashing with minimum overlap of 6 inches, in accordance with flexible-flashing manufacturer's instructions.
 - 2. Cover newly-installed flexible flashing immediately to prevent exposure to UV degradation longer than indicated by flexible-flashing manufacturer.

3.5 INSTALLATION OF WRB

- A. Prime surfaces where recommended by flexible flashing manufacturer and allow to dry
- B. Apply WRB membrane to achieve a continuous weather barrier according to WRB manufacturer's written instructions.
 - 1. Precut pieces of weather barrier into easily handled lengths.
 - 2. Apply membrane horizontally, or vertically, beginning at the base of the wall and working up.
 - 3. Remove release linear and position membrane carefully before placing against the surface. Overlap minimum 4 inches onto flexible flashing.
 - 4. Press membrane firmly into place, overlap minimum 2 inches at all end and side laps. Promptly roll all laps and membrane to ensure the seal.
 - 5. Seal around all penetrations with termination sealant.

3.6 FIELD QUALITY CONTROL

- A. At completion of Project, observe installed WRB and flexible flashing for damage or deterioration. If damage or deterioration occurs, neatly cut out and remove damaged or deteriorated WRB or flexible flashing, prepare and prime surfaces, and install new material.

3.7 CLEANING

- A. At end of each workday, clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
- B. After completing WRB and flexible flashing Work:
 - 1. Clean spillage and soiling from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected surface. Exercise care to avoid scratching or damage to surfaces.

2. Repair surfaces stained, marred, or otherwise damaged during Work.
3. Clean up debris and surplus materials and remove from Site.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Supply, fabrication, and installation of sheet metal drip edge and walkway edge flashing.
- B. Related Sections:
 - 1. Section 04 01 22 - Brick Masonry Repair and Replacement.
 - 2. Section 04 05 01 - Masonry Mortar and Grout.
 - 3. Section 07 25 00 - Weather-Resistive Barrier and Flexible Flashing.
 - 4. Section 07 92 00 - Joint Sealants.
- C. Payment: lump sum.

1.2 REFERENCES

- A. Reference Standards: Except as modified by the Drawings and Specifications, the following documents, or applicable portions thereof, govern the work. Latest edition as of Specification date.
 - 1. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) "Architectural Sheet Metal Manual - Seventh Edition."

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
 - 1. With Owner's Representative.
 - 2. With other trades:
 - a. To ensure that work done by other trades is complete and ready for sheet-metal Work.
 - b. To avoid or minimize work on, or in immediate vicinity of, sheet-metal Work in progress.
 - c. To ensure that subsequent work will not adversely affect completed sheet-metal Work.

1.4 SUBMITTALS

- A. Product Data: For each product specified.
 - 1. Include Safety Data Sheets (SDS) for information only; safety restrictions are sole responsibility of Contractor.
- B. Shop Drawings: Show layouts, profiles, shapes, seams, dimensions, and details for fastening, joining, supporting, interface conditions with other materials, and anchoring sheet-metal flashing and trim.
- C. Samples: For each type of sheet-metal flashing and trim. Construct typical lap splice or seam for mechanically-jointed systems, and solder lap or seam for field-solderable systems.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced firm that has successfully completed sheet-metal work similar in material, design, and extent to that indicated for Project. Must have successful installations of specified materials in local area in use for minimum of five years.
 - 1. Employ foreman with minimum five years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during Work. Do not change foremen during the course of the Project except for reasons beyond the control of the Installer; inform Engineer in advance of any changes.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Sheet-Metal Members: Deliver, store, and handle materials in such a manner as to prevent damage to materials or structure.
- B. Sealants, Coatings, and Miscellaneous Materials:
 - 1. Deliver materials to Site in original containers and packaging with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing.
 - 2. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, and installation. Reject and remove from Site new materials which exhibit evidence of moisture during application, or have been exposed to moisture.
 - 3. Store materials in original, undamaged containers in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight. Manufacturer's standard packaging and covering is not considered adequate weather protection.
 - 4. Handle materials to avoid damage.
 - 5. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
 - 6. Remove and replace materials that cannot be applied within stated shelf life.
- C. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of sheet-metal Work. Notify Engineer of conditions found to be different than those indicated in the Contract Documents. Engineer will review situation and inform Contractor and Installer of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Environmental Limitations: Install sheet-metal members when existing and forecast weather conditions permit sealants, coatings, and miscellaneous materials to be installed according to sealant, coating, or miscellaneous material manufacturer's written instructions and warranty requirements.
- D. Handle and install materials in strict accordance with safety requirements required by sheet-metal manufacturer; Safety Data Sheets; and local, state, and federal rules and regulations. Maintain Safety Data Sheets with materials in storage area and available for ready reference on Site.

- E. Installation of new sheet metal shall be coordinated with new WRB and flexible flashing installation defined in Section 07 25 00.

1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
 - 1. Notify Engineer of conditions that may interfere with the proper execution of the Work or jeopardize the performance of the Work prior to proceeding with the Work.

1.9 WARRANTY

- A. Contractor's Warranty:
 - 1. Written warranty, signed by Contractor, including:
 - a. Replace sheet-metal Work that does not comply with requirements; that has corroded surface, coating that fails cohesively or adhesively, or other surface defects or imperfections; or that deteriorates in a manner not clearly specified by material supplier's data as an inherent quality of the material for the application indicated.
 - b. Remove and replace sealant that has failed cohesively or adhesively; or that deteriorates in a manner not clearly specified by sealant manufacturer's data as an inherent quality of the material for the application indicated.
 - c. Repair or replacement, to satisfaction of Owner, of other work or items which may have been displaced or damaged as consequence of defective Work.
 - d. Warranty does not include deterioration or damage from changes in sheet-metal environment from that reasonably anticipated at Substantial Completion, or physical damage from adjacent activities.
 - 2. Warranty Period: Two years after Substantial Completion date.

PART 2 PRODUCTS

2.1 SHEET METAL

- A. For Through-Wall Metal Drip Flashings:
 - 1. Stainless-Steel Sheet: ASTM A240/A240M, Type 304; No. 2B finish; 24 gage.
- B. For Walkway Edge Metal:
 - 1. Prefinished aluminum sheet metal (0.040) as manufactured by Peterson Aluminum, or equal.
 - a. Color to match new bronze paint for adjacent handrails as closely as possible.

2.2 AUXILIARY MATERIALS

- A. Miscellaneous Materials:
 - 1. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items required for installation.
 - 2. Elastomeric Sealant: Reference Joint Sealants Section 07 92 00.
 - 3. Butyl Sealant: Reference Joint Sealants Section 07 92 00.
 - 4. Solder: ASTM B32.

2.3 FABRICATION

- A. Custom fabricate to comply with recommendations in SMACNA's Architectural Sheet Metal Manual that apply to design, dimensions, metal, and other characteristics of item indicated. Conform to dimensions and profiles shown in SMACNA's Architectural Sheet Metal Manual, unless requirements that are more stringent are indicated.
 - 1. Obtain field measurements for accurate fit before fabrication.
 - 2. Shop fabricate items where practicable.
- B. Fabricate without excessive oil canning, buckling, or tool marks that are visually objectionable in opinion of Engineer, and true to line and levels indicated, with exposed edges folded back to form hems.
- C. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant and in compliance with recommendations in SMACNA's Architectural Sheet Metal Manual.
- D. Conceal fasteners and expansion provisions, where possible, on exposed-to-view sheet-metal flashing and trim, unless otherwise indicated.
- E. Walkway Edge Flashing: Fabricate in minimum 8-foot-long, but not exceeding 10-foot-long, sections. Furnish with 6-inch-wide splice plates.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Installer for compliance with requirements and other conditions affecting performance of sheet-metal flashings and trim.
 - 1. Ensure that work done by other trades is complete and ready for sheet-metal Work.
 - 2. Verify that areas and conditions under which sheet-metal Work is to be performed permit proper and timely completion of Work.
 - 3. Notify Engineer in writing of conditions which may adversely affect installation or performance of sheet-metal Work and recommend corrections.
 - 4. Do not proceed with installation of sheet-metal flashings and trim until adverse conditions have been corrected and reviewed by Engineer.
 - 5. Commencing sheet-metal Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Take precautions to ensure safety of people, including building users, passers-by, and workmen; animals; and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- C. Protect paving, sidewalks, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.

- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 INSTALLATION

- A. General: Install sheet-metal flashings and trim according to recommendations in SMACNA's Architectural Sheet Metal Manual and as indicated.
- B. Install sheet-metal flashing as shown on the Drawings and trim to fit substrates and to result in watertight performance.
 - 1. Install true to line and levels indicated.
 - 2. Where exposed, install without excessive oil canning, buckling, or tool marks.
 - 3. Provide uniform, neat seams with minimum exposure of solder, welds, or sealant.
 - 4. Do not torch cut sheet metal.
- C. Provide for thermal expansion of exposed flashing and trim.
 - 1. Space movement joints no more than 10 feet apart, with no joint within 24 inches of corner or intersection.
 - 2. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1-inch deep, filled with butyl sealant concealed within joints.
- D. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
- E. Anchor sheet-metal flashing and trim and other components of Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required.
- F. Seal joints with elastomeric sealant as required for watertight construction.
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to width of 1-1/2 inches except where pre-tinned surface would show in finished Work.
 - 1. Do not solder aluminum sheets.
- H. Walkway Edge Flashing:
 - 1. Anchor as shown on Drawings.
 - 2. Install Work with laps, joints, terminations, and seams that will be permanently watertight.

3.4 CLEANING

- A. At the end of each workday, clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
- B. After completing sheet-metal Work:

1. Clean spillage and soiling from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected surface. Exercise care to avoid scratching or damage to surfaces.
2. Repair surfaces stained, marred, or otherwise damaged during roofing Work.
3. Clean up debris and surplus materials and remove from Site.

3.5 PROTECTION

- A. Protect sheet-metal flashings and trim from damage and wear during remainder of construction period.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Seal brick veneer control joints at locations designated on the Drawings.
 - 2. Seal around hand rail posts, metal flashing terminations, and other misc. dissimilar material locations designated on the drawings.
 - 3. Seal existing joints, cracks, and transitions beneath traffic coating.
- B. Related Sections:
 - 1. Section 04 01 21 - Brick Masonry Repair and Replacement.
 - 2. Section 07 62 00 - Sheet Metal Flashing and Trim
 - 3. Section 07 18 00 - Traffic Coatings.
- C. Payment: lump sum.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International
 - a. C920 - Standard Specification for Elastomeric Joint Sealants.
 - b. C1193 - Standard Guide for Use of Joint Sealants.
 - c. C1248: Standard Test Method for Staining of Porous Substrate by Joint Sealants.
 - d. C1521: Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints.

1.3 SUBMITTALS

- A. Manufacturer's product data, installation instructions, and color samples for exposed materials:
 - 1. Sealant and Associated Primer
 - 2. Bond breaker tape
 - 3. Backer Rod
- B. Statement of Manufacturer's Review: Provide written statement from manufacturer of each sealant used attesting that their products comply with specification requirements (submit modifications to specifications if required), are proper and adequate for this application, will not "bleed" through concrete coatings, and are compatible with adjacent coating systems and materials, including traffic coatings.
- C. Sample Warranty: Copy of Installer's warranty as required by Paragraph 1.7.
- D. Manufacturer's Representative Field Report(s): Submit product manufacturer's field review reports as required in Paragraph 1.4.
- E. Warranty: Following completion of Work, submit Installer warranty as required by Paragraph 1.7.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced firm that has successfully completed sealant work similar in material, design, and extent to that indicated for Project; that is approved, authorized, or licensed by sealant manufacturer to install sealant; and that is eligible to receive sealant manufacturer's warranty. Must have successful installations of specified materials in local area in use for minimum of 5 years.
 - 1. Employ foreman with minimum of 5-years' experience as foreman on similar projects, to be on Site at all times during Work. Do not change foremen during course of Project except for reasons beyond control of Installer; inform Engineer in advance of any changes.
- B. Compatibility Tests: Include sealant and sealers, stains, and traffic coatings that may come into contact with sealant following sealant application.
- C. Mockups: Install sealant in each type of joint to verify and set quality standards for materials and installation procedures, and to demonstrate aesthetic effects.
 - 1. Include each type of backing material, sealant, primer, and other related products. Install the following mock-ups:
 - a. Horizontal joint/crack within concrete deck
 - b. Brick-to-brick expansion joint.
 - c. Metal-to-metal handrail post penetration
 - d. Drip flashing lap joint
 - 2. Mockups shall be accessible or located as indicated by Owner's Representative.
 - 3. Notify Owner's Representative and Engineer 7 days in advance of date when mockups will be constructed.
 - 4. Field-Adhesion Testing: After sealants have cured, perform field-adhesion tests according to ASTM C1521.
 - a. Conduct tests for each type of sealant and joint substrate, with and without primer.
 - b. Arrange for tests to take place with sealant manufacturer's technical representative present.
 - c. Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Use alternate materials or modify installation procedure, or both, for sealants that fail to adhere to substrates.
 - 5. If Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved.
 - 6. Mockups, when approved by Owner's Representative and Engineer, will become standard for Work.
 - 7. Approved mockups may become part of completed Work if undisturbed at time of Substantial Completion.
 - 8. Do not begin joint sealant Work until mockup is accepted by Owner's Representative and Engineer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such manner as to prevent damage to materials and structure.
- B. Deliver materials to Site in original packages with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, lot number, and directions for storing and mixing with other components.

- C. Keep materials dry and do not allow materials to be exposed to moisture during transportation, storage, handling, or installation. Reject and remove from Site new materials which exhibit evidence of moisture during application or which have been exposed to moisture.
- D. Store materials in original, undamaged containers and packaging in clean, dry, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight. Manufacturer's standard packaging and covering is *not* considered adequate weather protection.
- E. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- F. Conspicuously mark wet or damaged materials and remove from Site as soon as possible.
- G. Remove and replace materials that cannot be applied within stated shelf life.

1.6 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of sealant Work. Notify Engineer of conditions found to be different than those indicated in Contract Documents. Engineer will review situation and inform Contractor and Installer of changes.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Environmental Limitations: Install sealant when existing and forecast weather conditions permit sealant to be installed according to sealant manufacturer's written instructions and warranty requirements.
 - 1. Do not install sealant when ambient or substrate temperatures are below 40 degrees F. or are expected to fall below 40 degrees F. in next 12 hours.
 - 2. Do not proceed with installation during inclement weather except for temporary work necessary to protect building interior and installed materials. Remove temporary work and Work that becomes moisture damaged.
- D. Handle and install materials in strict accordance with safety requirements required by sealant manufacturer, Material Safety Data Sheets, and local, state, and federal rules and regulations. Maintain Material Safety Data Sheets with materials in storage area and available for ready reference on Site.

1.7 WARRANTY

- A. Sealant Installer's Warranty:
 - 1. Written warranty, signed by sealant manufacturer, including
 - a. Repair or replace sealant that does not comply with requirements; that does not remain watertight; that fails in adhesion, cohesion, or general durability; or that deteriorates in manner not clearly specified by submitted sealant manufacturer's data as inherent quality of material for application indicated.
 - b. Removal and replacement in accordance with Project Specifications.
 - c. Labor and materials to perform warranty work.
 - d. Warranty does not include sealant deterioration or failure due to following.
 - 1) Excessive joint movement caused by structural settlement or errors attributable to design or construction, resulting in stresses in sealant exceeding sealant manufacturer's written specifications for sealant elongation or compression.

- 2) Deterioration or failure of sealant due to failure of substrate, if the substrate is prepared according to requirements.
 - 3) Mechanical damage caused by individuals, animals, tools, or other outside agents.
 - 4) Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.
2. Warranty Period: 5 years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 SEALANTS AND PRIMERS

A. General:

1. Comply with ASTM C920 and other requirements indicated.
2. 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 sealant manufacturer, based on testing on similar projects, mockups and pre-construction testing for Project, and field experience.
3. Select products based on mockups, pre-construction testing, and sealant manufacturer's previous testing and experience.
4. Source Limitations: Obtain each type of joint sealant through one source from single manufacturer.
5. Colors of Exposed Joint Sealants: Selected and approved in writing by Owner's Representative, from sealant manufacturer's full range.
6. At locations where sealant joint are to be replaced or where newly applied sealant will contact existing sealant provide sealant of similar chemical composition and compatible with existing sealant.

B. Joint Sealant: multi-component elastomeric polyurethane. For use in horizontal concrete joints, routed cracks within concrete walkway, and sealant cove beads below traffic coating.

1. MasterSeal NP2, SL2, manufactured by Master Builders Solutions, or approved equal.
 - a. Color to match traffic coating within Section 07 18 00.

C. Joint Sealant: Single-component, Non-sag, Medium Modulus, Silicone Sealants. For use in brick expansion joints, brick penetrations, and to seal terminations/transitions/penetrations within metal flashings/copings/railings. Also used for bedding and lap seals in metal flashings.

1. DOWSIL 795 Silicone Building Sealant manufactured by Dow Corning Corporation, or approved equal.
 - a. Colors
 - 1) Bronze: where applied against metal edge flashings, handrails, columns, and copings.
 - 2) Limestone: where applied against new brick veneer with sealer/stain.

D. Primer: Use primer as recommended and approved by sealant manufacturers. Primer required for masonry surfaces in contact with silicone sealants.

2.2 ASSOCIATED MATERIALS

- #### **A. General: Sealant-backer materials, primers, surface cleaners, masking tape, and other materials recommended by sealant manufacturer, that are non-staining and compatible with substrates,**

based on mockups, pre-construction testing, and sealant manufacturer's previous testing and experience.

- B. Backer Rod:
 - 1. Horizontal applications below traffic coating: Closed cell polyethylene as manufactured by Nomaco, or approved equal.
 - 2. Vertical applications: Bi-cellular polyethylene as manufactured by Nomaco, or approved equal.
- C. Bond Breaker Tape: Polyethylene tape of size required for proper joint profile.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Installer and sealant manufacturer's representative for compliance with requirements and for other conditions affecting installation or performance of sealant.
 - 1. Verify dimensions of sealant joints at Site by field measurement so that proper sealant profiles will be accurately maintained.
 - 2. Ensure that work done by other trades is complete and ready for sealant Work.
 - 3. Verify that areas and conditions under which sealant Work is to be performed permit proper and timely completion of Work.
 - 4. Notify Engineer in writing of conditions which may adversely affect installation or performance of sealant, including joints with widths less than those allowed by sealant manufacturer for applications indicated, and recommend corrections.
 - 5. Do not proceed with sealant Work until adverse conditions have been corrected and reviewed by Engineer.
 - 6. Commencing sealant Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Take precautions to ensure safety of people, including building users, passers-by, and workmen; animals; and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- C. Protect paving, sidewalk, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas.
- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Comply with sealant manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products.
- G. Cover adjacent surfaces with materials that are proven to resist sealant.

- H. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.
- I. Protect sealant during and after curing period from contact with contaminating substances and from damage, so sealants are without deterioration or damage at time of Substantial Completion.

3.3 SURFACE PREPARATION

- A. Remove existing sealant and other foreign material from joints. Field verify and notify Engineer if existing sealant joints are not polyurethane.
- B. Repair damaged or deteriorated substrate surfaces according to sealant manufacturer's written instructions and as approved by Engineer.
- C. Rout out full length of cracks (if present) and horizontal joints to form the minimum reservoir for sealant application.
- D. Clean joint substrates immediately before installing sealant, to comply with sealant manufacturer's written instructions.
 - 1. Remove foreign material from substrate that could interfere with adhesion of sealant, including dirt, dust, existing sealant, oil, grease, and surface coatings.
 - 2. Provide dry substrate; prevent wetting of substrate prior to sealant installation.
 - 3. Clean porous substrates, such as concrete, masonry, stone, wood, by brushing, grinding, blast-cleaning, mechanical-abrading, or combination of methods to produce clean, sound substrate capable of developing optimum bond with sealant. Remove laitance and form-release agents from concrete. Remove loose particles remaining after cleaning operations by vacuuming or blowing out joints with oil-free, compressed air.
 - 4. Clean nonporous surfaces, such as metal, with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of sealant.
- E. Install masking tape on adjacent surfaces to prevent permanent staining or damage due to contact with sealant or cleaning methods to remove sealant smears. Remove tape immediately after tooling sealant, without disturbing sealant.

3.4 INSTALLATION

- A. General: Comply with sealant manufacturer's written installation instructions for products and applications indicated, based on mockups and pre-construction testing.
- B. Joint Priming: Prime joint substrates where recommended in writing by sealant manufacturer. Apply primer to comply with sealant manufacturer's written instructions.
 - 1. Confine primer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.
 - 2. Limit priming to areas that will be covered with sealant in same day. Unless recommended otherwise by sealant manufacturer, reprime areas exposed for more than 24 hours.
- C. Install sealant backer and position to produce cross-sectional shape and proper depth of installed sealant.
 - 1. Use properly-sized backer. Do not use multiple-backer units or braided-backer units to accommodate wide joints.
 - 2. Install backer with device that will provide consistent depth between substrate surface and outer surface of backer.

3. Do not leave gaps between ends of sealant backers.
 4. Do not stretch, twist, puncture, or tear sealant backers.
 5. Remove wet backers and replace with dry materials.
- D. Install bond breaker where joint cannot accept backer rod or where recommended in writing by sealant manufacturer. Exercise extreme care so that bond breaker is not applied to sides of reservoirs. Remove bond breaker applied to sides of reservoir in accordance with manufacturer's recommendation.
- E. Install sealant immediately after installing backer material; to produce uniform, cross-sectional shape and depth; to directly contact and fully wet joint sides and backer material; and to completely fill recesses in joint configuration.
1. Install sealant flush with surface.
 2. Immediately after sealant application and before skinning or curing begins, tool joint with slight concave surface, compressing sealant into joint to form smooth, uniform sealant bead; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Do not use tooling agent.
 3. Broadcast sand/aggregate on surface of horizontal wet sealant joints to receive epoxy overlay as recommended by overlay manufacturer.
 4. Remove excess sealant from surfaces adjacent to joints.
- F. Cure sealant in accordance with sealant manufacturer's recommendations.

3.5 FIELD QUALITY CONTROL

- A. Manufacturer's representative shall observe the sealant installation when the work begins and periodically as the work progresses. Manufacturer's representative to provide written confirmation that the sealant is being installed in accordance with the manufacturer's recommendations.
- B. At completion of Project, observe installed sealant for damage or deterioration. If damage or deterioration occurs, neatly cut out and remove damaged or deteriorated sealant, prepare and prime surfaces, and install new sealant. Replace sealant immediately so new sealant is indistinguishable from original Work.
- C. Field-Adhesion Testing: Engineer or other parties may perform non-destructive and destructive field adhesion tests on sealant in accordance with ASTM C 1521.
1. Non-destructive testing:
 - a. Depress center of sealant bead with probing tool to depth of 50 percent of bead width, or depress sealant bead near substrate bond-line until it appears visually that sealant is about to fail cohesively.
 - b. Record if sealant failed, if failure was adhesive or cohesive, and maximum surface depression as percent of joint width.
 2. Destructive testing:
 - a. Cut 6-inch-long tail of sealant loose from substrate.
 - b. Mark tail 1 inch from adhesive bond.
 - c. Grasp tail 1 inch from adhesive bond and pull until tail extends to two times published movement capability of sealant. If sealant has not failed, continue pulling to failure.
 - d. Record elongation at failure and if failure was adhesive or cohesive.
 - e. Observe sealant for complete filling of joint with absence of voids, and for joint configuration in compliance with requirements. Record observations and sealant dimensions

3. Immediately after testing, Contractor shall replace failed sealant in test areas. Neatly cut out and remove failed sealant, prepare and prime surfaces, and install new sealant. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
4. Sealant not evidencing adhesive failure from testing or noncompliance with requirements will be considered satisfactory.
5. Where Engineer determines that sealant has failed adhesively from testing or does not comply with requirements, additional testing will be performed to determine extent of non-conforming sealant. Neatly cut out and remove non-conforming sealant, prepare and prime surfaces, and install new sealant. Perform field adhesion tests on new sealant. Additional testing and replacement of non-conforming sealant shall be at Contractor's expense.

3.6 CLEANING

- A. As sealant Work progresses, clean off excess sealant or sealant smears by methods and with cleaning materials approved in writing by sealant manufacturer and manufacturers of products in which joints occur. Exercise care to avoid scratching or damage to surfaces.
- B. At end of each workday, clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.
- C. After completing sealant Work:
 1. Repair surfaces stained, marred, or otherwise damaged during sealant Work.
 2. Clean up debris and surplus materials and remove from Site.

END OF SECTION

SECTION 09 97 13

STEEL COATING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Surface preparation and application of coating system on new and existing steel surfaces.
 - a. Apply two-coat system at all steel exposed to view, including railings, columns (from 1st Level pavement to the underside of the roof canopy), column base plates (where exposed for repairs) and shelf angles. Stair framing is excluded from scope.
 - b. Apply one-coat overcoat system to all steel to be concealed in the soffit or wall cavity.
- B. Payment: lump sum.

1.2 REFERENCES

- A. Reference Standards: Latest edition as of Specification date.
 - 1. ASTM International:
 - a. D3359: Standard Test Methods for Measuring Adhesion by Tape Test.
 - b. D4541: Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers.
 - 2. SSPC: The Society for Protective Coatings:
 - a. SSPC-SP 2: Hand Tool Cleaning.
 - b. SSPC-SP 3: Power Tool Cleaning.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate Work to ensure that adjacent areas are not adversely affected. Coordinate:
 - 1. With Owner.
 - 2. With other trades:
 - a. To ensure that work done by other trades is complete and ready for coating Work.
 - b. To avoid or minimize work on, or in immediate vicinity of, coating Work in progress.
 - c. To ensure that subsequent work will not adversely affect completed coating.
- B. Review repair and surface treatment materials and primers specified in other sections to ensure compatibility with steel coating to be used. Notify Engineer in writing of concerns with materials or primers installed by others and recommended remedies.
- C. Sequence surface preparation and coating application Work so that dust and other contaminants from surface preparation Work will not adversely affect wet, newly-coated surfaces.

1.4 SUBMITTALS

- A. Product Data: Coating manufacturer's literature including written instructions for evaluating, preparing, and treating substrate; technical data including tested physical and performance properties; mixing and application instructions; safety precautions for handling, storing, applying, and disposing of materials; and instructions for protecting surrounding areas from overspray. Include:

1. Surfaces to which materials will be applied.
 2. Certification by coating manufacturer that products supplied comply with local VOC regulations.
 3. Coating manufacturer's color chart showing full range of colors available.
 4. Decoding information to verify shelf life of materials.
 5. Include Globally Harmonized System (GHS) sheets, for information only.
- B. Samples: 8-inch-square samples, on rigid backing, of each coating system and color and gloss of finish coat to be applied. For review of color and texture only.
1. Provide step samples, defining each separate coat. Use representative colors when preparing samples for review. Resubmit until required color, sheen, and texture are achieved.
 2. Label each sample for location and application.
 3. Provide list of materials and applications for each coat of each sample.
- C. Safety Plan: Written action plan that complies with applicable government regulations and covers operational requirements for safe application of coating materials; means of protection of surrounding areas from overspray and rebound; and handling, storage, and disposal of hazardous and toxic materials.
- D. Applicator Qualifications: Evidence that Applicator's has minimum five years of continuous experience in similar coating work.
- E. Manufacturer's Review Letter: Written statement from coating manufacturer's representative stating indicating that mockup has been reviewed and that substrates are suitable for specified coating systems.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Experienced firm that has successfully completed coating work similar in material, design, and extent to that indicated for Project; and that is approved by coating manufacturer to apply coating. Must have successful applications of specified materials in local area in use for minimum of five years.
1. Employ foreman trained with minimum five years of experience as foreman on similar projects, who is fluent in English, to be on Site at all times during Work. Do not change foremen during Project except for reasons beyond the control of the Applicator.
- B. Mockups: Prepare surface and apply coating system to representative members designated by Engineer to demonstrate surface preparation, aesthetic affects, and quality of materials and execution. Leave portion of prepared surface and each coating layer exposed to view.
1. One mockup shall be performed for each specified coating system.
 2. Coating manufacturer's representative shall observe mockup and approve in writing surface preparation and coating application.
 3. Owner may, at its expense, verify coating thickness and perform adhesion and pull-off tests. Contractor shall, at no cost to Owner, repair coating and substrate damaged by testing.
 4. If Engineer determines mockup does not comply with requirements, modify mockup or construct new mockup until mockup is approved. Pay for additional testing requested by Owner. Do not proceed with coating Work until mockup is approved.
 5. Approved mockup will be acceptance standard for remainder of coating Work.
 6. Approved mockup may become part of completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials according to manufacturer's recommendations and in such a manner as to prevent damage to materials or structure.
- B. Deliver materials to Site in original containers and packaging with seals unbroken, labeled with:
 - 1. Manufacturer's name.
 - 2. Product brand name, type, and color.
 - 3. VOC content.
 - 4. Color name and number.
 - 5. Date of manufacture and batch number.
 - 6. Directions for storing, handling, mixing with other components, and application, including precautions.
 - 7. Thinning instructions if applicable.
- C. Store materials in original, undamaged containers and, if permitted, partially-used materials in tightly-covered containers in clean, dry, well-ventilated, protected location on raised platforms with weather-protective coverings, within temperature range required by manufacturer. Protect stored materials from direct sunlight, heat, sparks, and flames.
- D. Limit stored materials on structures to safe loading capacity of structure at time materials are stored, and to avoid permanent deck deflection.
- E. Conspicuously mark damaged or opened containers or containers with contaminated materials, and remove from Site as soon as possible.
- F. Remove and replace materials that cannot be applied within stated shelf life.

1.7 PROJECT CONDITIONS

- A. Verify existing dimensions and details prior to start of coating Work. Notify Engineer of conditions found to be different than those indicated in the Contract Documents. Engineer will review deviation and provide supplemental instructions as necessary.
- B. Comply with Owner's limitations and restrictions for Site use and accessibility.
- C. Environmental Limitations: Apply coating when existing and forecast weather conditions permit coating to be applied according to coating manufacturer's written instructions.
 - 1. Do not apply when substrate and ambient temperatures are less than 50°F or more than 95°F, or outside of range recommended by coating manufacturer. Maintain minimum substrate and ambient temperatures for at least 24 hours before and after coating application.
 - 2. Do not apply to damp or wet substrates; in snow, rain, fog, or mist; when relative humidity exceeds 80 percent or maximum value recommended by coating manufacturer; or when substrate temperature is less than 5 degrees F above dew point.
- D. Handle and install materials in strict accordance with safety requirements required by coating manufacturer; GHS or Material Safety Data Sheets; and local, state, and federal rules and regulations. Maintain GHS or Material Safety Data Sheets with materials in storage area and available for ready reference on Site.
- E. Maintain adequate ventilation during preparation and application of coating materials.

1.8 CHANGES IN WORK

- A. During rehabilitation work, existing conditions may be encountered which are not known or are at variance with the Contract Documents. Such conditions may interfere with the Work and may consist of damage or deterioration of the substrate or surrounding materials that could jeopardize the integrity or performance of the Work.
 - 1. Notify Engineer of conditions that may interfere with the proper execution of the Work or jeopardize the performance of the Work prior to proceeding with the Work.

1.9 WARRANTY

- A. Contractor Warranty:
 - 1. Written warranty, signed by Contractor, including:
 - a. Repair or remove and replace coating that does not comply with requirements; that fails in adhesion, cohesion, or general durability; that cracks, checks, fades, or chalks; where visible rust occurs; or that deteriorates in a manner not clearly specified by submitted coating manufacturer's data as an inherent quality of the material for the application indicated.
 - 2. New coating shall closely match color of existing coating. Extend new coating to reveals, surface edges, or other natural termination points to minimize differences in appearance between new and existing coating.
 - 3. Warranty includes:
 - a. Providing access to warranty Work.
 - b. Necessary surface preparation work.
 - 4. Warranty Period: Two years after Substantial Completion date.

PART 2 PRODUCTS

2.1 STEEL COATING MATERIALS

- A. Source Limitations: Obtain materials through one source from single coating manufacturer, or from sources approved by coating manufacturer.
- B. Material Compatibility: Provide primers, intermediate coats, finish coats, and related materials that are compatible with one another and substrates indicated under conditions of application and service, as demonstrated by manufacturer based on testing and field experience.
- C. Material Quality: Provide manufacturer's best-quality coating materials that are factory formulated and are recommended by manufacturer for application indicated. Material containers not displaying manufacturer's product identification are not acceptable.
- D. New and Existing Steel Surfaces:
 - 1. "Two-coat" system at steel exposed to view (i.e., not concealed in soffit or wall cavity):
 - a. Sherwin Williams
 - 1) Primer: Kem Bond HS Universal Metal Primer, 2.0 to 4.0 mil DFT
 - 2) Topcoat: Pro Industrial Acrylic, 2.0 to 4.0 mil DFT
 - a) Color/finish: as indicated below

INT/EXT	ARCHITECTURAL
PRO INDUSTRIAL	ACRYLIC
EG-SHEL	IFC 411XN
BRZ1 ANTIQUE BRONZE	
CUSTOM MANUAL MATCH	
CCE*COLORANT	02 32 64 128
W1-White	- 24 - 1
B1-Black	2 63 - 1
R2-Maroon	- 21 - 1
Y3-Deep Gold	4 19 - 1

- b. Approved equal
2. "One coat overcoat" at steel to be concealed in soffit or wall cavity
 - a. Sherwin Williams
 - 1) One coat: Epoxy Mastic Aluminum II, 4.0 to 6.0 mil DFT
 - a) Color: Aluminum

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Applicator and coating manufacturer's representative for compliance with requirements and other conditions affecting application or performance of coating.
 1. Ensure that work done by other trades is complete and ready for coating Work.
 2. Verify that areas and conditions under which coating Work is to be performed permit proper and timely completion of Work.
 3. Verify compatibility with and suitability of substrates, including existing coatings.
 4. Verify adhesion of existing coatings.
 5. Notify Engineer in writing of conditions which may adversely affect application or performance of coating and recommend corrections.
 6. Do not proceed with coating Work until adverse conditions have been corrected and reviewed by Engineer.
 7. Commencing coating Work constitutes acceptance of Work surfaces and conditions.

3.2 PROTECTION

- A. Take precautions to ensure safety of public and protection of property, including adjacent building elements, landscaping, and motor vehicles.
- B. Prevent construction debris, coatings, and other materials from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
- C. Protect paving and sidewalks, and adjacent building areas from mechanical damage due to scaffolding and other equipment.
- D. Limit access to Work areas. Provide "Wet Paint" signs to protect newly coated surfaces.

- E. Erect temporary protective canopies, as necessary, over walkways and at points of pedestrian and vehicular access that must remain in service during Work.
- F. Take precautions to protect against air-borne materials and runoff.
- G. Masking and Preparation:
 - 1. Comply with coating manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products.
 - 2. Cover adjacent surfaces with materials that are proven to resist coating system.
 - 3. Mask off or protect from spatter, overspray, or other damage surfaces not scheduled to receive coating.
 - 4. Remove masking and other protective measures at completion of coating Work.
- H. Assume responsibility for injury to persons or damage to property due to Work, and remedy at no cost to Owner.

3.3 SURFACE PREPARATION

- A. Substrate: Clean and prepare substrate according to coating manufacturer's written instructions. Provide clean, dust-free, dry, and sound substrate for coating application.
 - 1. Remove loose rust, loose or deteriorated paint, and other loose foreign matter in accordance with SSPC-SP 2 or SSPC-SP 3.
 - a. Where rust is present in crevices or difficult-to-reach locations, remove heavy rust by hand or power descaling tools to a minimum depth of 1 inch within the crevice.
 - 2. Lightly sand existing coating to remove sheen and slightly roughen.
 - 3. Feather edges of existing coating by sanding, grinding, or as recommended by coating manufacturer.
 - 4. Remove grease, oil, dirt, and other contaminants that might impair bond of coating. Use cleaner/degreaser or chemical removal as necessary; rinse thoroughly with copious amounts of clean water.
- B. Applicator and coating manufacturer's representative shall examine substrate to ensure that it is properly prepared and ready to receive coating.
 - 1. Coating manufacturer's representative shall report in writing to Applicator and Engineer conditions which may adversely affect coating system application or performance and recommend corrections.
 - 2. Do not proceed with coating application until unsatisfactory conditions have been corrected and reviewed by Engineer.
 - 3. Commencing coating application constitutes acceptance of Work surfaces and conditions.

3.4 APPLICATION

- A. General: Prepare and apply materials according to coating manufacturer's written instructions, at recommended rates and coverages.
- B. Test prepared surfaces for moisture and other conditions as recommended by coating manufacturer. Verify that ambient air and substrate surface temperatures, relative humidity, and dew point are within ranges recommended by coating manufacturer and are forecast to remain within these ranges during coating curing period.
- C. Mix materials thoroughly to uniform, smooth consistency. Do not thin or dilute unless permitted by coating manufacturer; use recommended thinners within recommended limits.

1. Stir as required during application.
 2. If surface film forms, do not stir film into material. Remove film and strain coating material before using.
 3. Maintain containers used for mixing and applying coating in clean condition, free of foreign materials and residue.
- D. Apply coating by roller, spray, or brush. Use applicator and technique best suited for substrate and type of material being applied.
1. Apply materials as soon as practicable after completion of surface preparation or full curing of previous material application.
 2. Do not coat over conditions detrimental to formation of durable coating film, such as dirt, rust, scale, grease, or moist or scuffed surfaces.
 3. Apply brush-applied stripe coat at all corners, edges, and welds during each coating application (i.e., primer, intermediate coat, and finish coat).
 - a. In crevices and difficult-to-reach areas, apply stripe coat of primer or first coat to the crevice area so that it floods and wicks into the crevice. Wipe excess wet material from the surface after flood application.
 4. Spot prime exposed steel surfaces to provide specified thickness or as recommended by coating manufacturer, whichever is greater.
 5. After the steel is primed, it shall be vacuumed again before subsequent coating. If for any reason this vacuuming does not remove all the accumulated dust and or dirt, or if more than 3 weeks has elapsed since the steel was primed, or if in the opinion of the Engineer the surface is unfit for top coating, the surface shall be scrubbed with a mild detergent solution (any commercial laundry detergent), thoroughly rinsed with water, and allowed to dry in accordance with SSPC-SP 1.
 6. Apply finish coat in one coat to provide specified thickness or as recommended by coating manufacturer, whichever is greater. If second coat is required to provide full coverage, do not apply second coat until first coat has fully cured. Select application method to avoid excessive coating thickness.
 - a. If undercoats or other conditions show through final coat, apply additional coats until coating film is of uniform finish, color, and appearance, if approved by Engineer.
 - b. Ensure that edges, corners, and crevices receive minimum dry film thickness.
 - c. Brush Application: Work material into surface in even film. Eliminate cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Neatly draw lines at edges and color breaks.
 - d. Roller Application: Keep cover wet; do not dry roll. Apply material in sections. Lay on required amount of material, working material into grooves and rough areas. Then level material, working it into surface.
 - e. Spray Application: Use spray application only when permitted by manufacturer's written instructions and authorities having jurisdiction. Apply material to provide equivalent hiding of brush-applied coat. Do not double back, building up film thickness of 2 coats in 1 application.
 - f. All dry spray shall be removed, by sanding if necessary. In areas of deficient primer thickness, the area shall be thoroughly cleaned with power washing equipment, as necessary to remove all dirt; the area shall then be wire brushed, vacuumed and re-primed.
 - g. All metal coated with impure, unsatisfactory or unauthorized coating material, or coated in an unworkmanlike or objectionable manner, shall be thoroughly cleaned and recoated or otherwise corrected as directed by the Engineer.
 7. Do not coat over UL, FMG, or other labels.

- E. Conditions for coating: Apply coating when existing and forecast weather conditions permit coating to be installed according to coating manufacturer's written instructions.
1. Temperature - Unless otherwise specified by the coating manufacturer, do not apply when substrate and ambient temperatures are less than 50 degrees F or more than 95 degrees F. Coatings shall not be applied if the temperature is high enough to cause blistering.
 2. Humidity - The coating shall not be applied when the relative humidity is greater than 90 percent (unless otherwise specified by the coating manufacturer) nor when a combination of temperature and humidity conditions are such that moisture condenses on the surface being coated. The surface temperature shall be at least 5°F higher than the dew point, as determined in accordance with ASTM E337.
 3. Spray application - Spray application shall not be permitted when wind velocities are greater than 20 MPH.
 4. These conditions will be determined by the Engineer at locations representative of the surfaces to be cleaned and painted. Work accomplished under unfavorable weather conditions will be considered unacceptable and complete recleaning and repainting of these areas will be required at the Contractor's expense.

3.5 FIELD QUALITY CONTROL

- A. Material Coverage Rates.
1. At beginning of application, calibrate material coverage rate with wet-mil thickness equivalent to minimum specified dry-mil thickness. Measure wet-mil thickness with thickness gauge.
 2. Measure wet-mil thickness at least once for every 10 square feet of surface coated. Adjust coverage rate to maintain minimum thickness.
- B. Owner may, at its expense, perform the following tests. Contractor shall provide access to test locations determined by Engineer.
1. Measure dry-film thickness of coating. Coating thickness is acceptable if within specified range.
 2. Perform adhesion tests per ASTM C3359, Test Method A, after coating has cured. Coating adhesion is acceptable if no peeling or coating removal occurs (Rating 5A). Engineer may accept Rating 4A on a case-by-case basis.
 3. Perform pull-off tests per ASTM D4541, after coating has cured. Coating application is acceptable if test results exceed manufacturer's required adhesion for the specific type of testing device used.
 4. If coating application is acceptable, Owner will pay Contractor to repair substrate and coating as necessary at test locations.
 5. If coating application is unacceptable, Engineer will determine remedy. Contractor shall remove and replace unacceptable coating or perform other remedial actions at no cost to Owner. Contractor shall also repair substrate and coating at test locations with unacceptable results at no cost to Owner. Contractor may, at own expense, perform additional measurements and testing to determine limits of areas with unacceptable coating.
- C. Completed Work shall match approved mockup for color, texture, and coverage, in opinion of Engineer, and shall be free from flow-lines, streaks, blisters, and other surface imperfections. Remove, refinish, or recoat Work not complying with specified requirements.

3.6 CLEANING

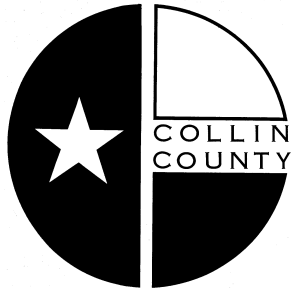
- A. At the end of each workday, clean Site and Work areas and place rubbish, empty cans, rags, and other discarded materials in appropriate containers.

- B. After completing coating Work:
 - 1. Clean spillage, overspray, and spatter from adjacent surfaces using cleaning agents and procedures recommended by manufacturer of affected surface. Exercise care to avoid scratching or damage to surfaces.
 - 2. Repair surfaces stained, marred, or otherwise damaged during coating Work.
 - 3. Clean up debris and surplus materials and remove from Site.

- C. Waste Management:
 - 1. Collect surplus coating materials that cannot be reused and deliver to recycling or disposal facility.
 - 2. Treat materials that cannot be reused as hazardous waste and dispose of in an appropriate manner.

END OF SECTION

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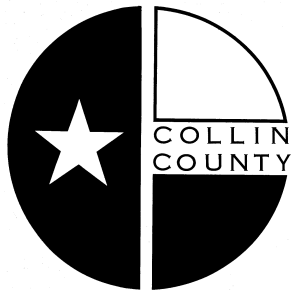
FIRST FLOOR SOFFIT REPAIRS

**PARK PLAZA DEVELOPMENT
900 E. PARK BOULEVARD
PLANO, TEXAS 75074**

CONSTRUCTION DOCUMENTS
PROJECT MANUAL

PROJECT NUMBER: 2004
COLLIN COUNTY IFB NO: 2022-198
ISSUE DATE: MARCH 2022
SET NUMBER: _____





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PROJECT NUMBER: 2004
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00 01 08
PROJECT DIRECTORY

Owner: **COLLIN COUNTY, TEXAS**
Attn: Bill Burke, Construction & Projects
Collin County Building Projects
4600 Community Avenue
McKinney, Texas 75071

Architect: **SPURGIN & ASSOCIATES ARCHITECTS**
Attn: Kent Spurgin, Principal
103 W. Louisiana Street
McKinney, Texas 75069-4413

END OF PROJECT DIRECTORY

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- A2 Second Floor Balcony Plan & Floor Drain Piping Details

END OF LIST OF DRAWINGS

01 11 00
SUMMARY OF WORK

1.0 GENERAL

1.01 SUMMARY

- A. The Project is located in the Park Plaza Development at 900 E. Park Boulevard between US Highway 75 and State Highway 5 (Avenue K) in Plano, Texas.
- B. The Work is composed of installation of new flush metal soffit panels of the second floor balcony, installation of some galvanized metal framing for soffit panel support, replacing select floor drains and piping in the second floor balcony structure, installing new recessed LED soffit lighting in the new soffit panels and connecting new lights to existing lighting circuits, and installing new suspended tenant ID signage.
- C. The Work of this Contract will be performed under a single prime contract.
- D. Contractor's duties:
 - 1. Provide all labor, materials, equipment, tools, machinery, facilities, and services necessary for proper execution and completion of the work.
 - 2. Give required notices.
 - 3. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
 - 4. Promptly submit written notice to Architect of observed variance of Contract Documents from legal requirements. It is Contractor's responsibility to make certain that construction complies with applicable codes and regulations.
 - 5. Verify all conditions at the site and dimensions in the field prior to starting work. Architect shall be notified in writing of any discrepancies found.
 - 6. The Drawings and Specifications represent the work to be completed, not the method of construction.
 - 7. Obtain and pay for any inspections, permits, or licenses required. The required fees cost shall be included in the bid.
 - 8. Use every precaution to prevent damage to roads, adjacent property, buildings, and utilities above and below ground that are adjacent to or included in the area under contract. Repair and replace, at Contractor's expense, any material or item damaged or destroyed because of Contractor's operations.

1.02 CONTRACTOR USE OF PREMISES

- A. Confine operations at site to areas permitted by law, ordinances, permits and as designated by Owner.
 - 1. Contractor and his personnel shall park their vehicles and trailers only in areas designated on the Drawings.
- B. Owner will continue to occupy the existing facility during construction of the addition and remodel to specific areas of the existing facility. Contractor shall carry out his work in such a way as to minimize interference with the Owner's work and use of site and parking areas specifically.
- C. Do not unreasonably encumber site with materials or equipment.
- D. Maintain required fire exits and fire lanes during construction in accordance with Fire Department regulations. Provide signage, barricades, walkways, and fences as may be required.

1.03 CORRELATION OF DOCUMENTS

- A. Anything mentioned in the Specifications and not shown on the Drawings or shown on the Drawings and not mentioned in the Specifications, is of like effect as if shown or mentioned in both. In case of difference between Drawings and Specifications, the Specifications will govern.
- B. Figures given on Drawings govern scale measurements, and large scale drawings and details govern small scale drawings. Schedules on any contract drawing will take precedence over conflicting information on that or any other contract drawing.
- C. Specifications determine nature and setting, workmanship and quality of materials; Drawings establish design, quantities, dimensions and details; Schedules give locations.

- D. Similar conditions may be illustrated by a single detailed drawing. The drawing may be subject to minor adjustments as directed by the Architect to satisfy exact and specific conditions. If discrepancies appear, Contractor shall request interpretation from the Architect prior to proceeding with the Work. Contractor shall not make such interpretations by himself, except at his own risk, responsibility and expense.

1.04 EXISTING CONDITIONS

- A. The Architect assumes no responsibility for the accuracy of the information on existing drawings. It is the intent of the Contract Drawings to integrate new work with existing work and the Contractor shall verify actual conditions.
- B. Prior to commencement of work, visit and examine the site verifying all existing conditions, control points, principal lines and elevations, presence of underground utilities, at or related to the site and existing buildings. In the event of any inconsistency or conflict between existing conditions and the bidding documents, immediately notify the Architect. Do not undertake any phase of the work affected by such inconsistency or conflict, pending the issuance of instructions by the Architect.
- C. Locations of utilities shown on the Drawings have been obtained from the existing site utility plans and utility companies. Contractor shall examine the site and verify to his own satisfaction the location and elevation of all utilities and shall adequately inform himself as to their relationship to the Work.
- D. Specifications and Drawings in no way imply as to the condition of the soil encountered. When excavation is required in execution of the Work, Contractor agrees that he has informed himself regarding conditions affecting the Work, labor, and materials required, without recourse to any representations as to soil conditions that may appear or seem to be implied in any portion of the Contract Documents.

2.0 PRODUCTS

Not Applicable to this Section.

3.0 EXECUTION

Not Applicable to this Section.

END OF SUMMARY OF WORK

01 26 00
CONTRACT MODIFICATION PROCEDURES

1.0 GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. General Conditions: Changes in the Work.
 - 3. Section 01 21 00: Allowances.
 - 4. Section 01 29 00: Payment Procedures.
 - 5. Section 01 33 00: Submittal Procedures.
 - 6. Section 01 62 00: Product Options.

1.02 MINOR CHANGES IN THE WORK

- A. The Architect will issue supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions.

1.03 CHANGE ORDER PROPOSAL REQUESTS

- A. Owner-initiated proposal requests: The Architect will issue a detailed description of proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal requests issued by the Architect are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.
 - 2. Unless otherwise indicated in the proposal request, within fifteen (15) days of receipt of a proposal request, submit an estimate of cost necessary to execute the change to the Architect for the Owner's review.
 - a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.
- B. Contractor-initiated proposal requests: When latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.
 - 1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
 - 2. Include a list of quantities of products required and unit cost, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Comply with requirements of Section 01630 Products Options and Substitutions if the proposed change requires substitution of one product or system for a product or system specified.

1.04 ALLOWANCES

- A. Allowance adjustment: For allowance-cost adjustment, base each Change Order Proposal on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place. Where applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in the purchase amount only where indicated as part of the allowance.
 2. When requested, prepare explanations and documentation to substantiate the margins claimed.
 3. Submit substantiation of a change in scope of work claimed in the Change Orders related to unit-cost allowances.
 4. The Owner reserves the right to establish the actual quantity of work-in-place by independent quantity survey, measure, or count.

1.05 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction change directive: When the Owner and the Contractor disagree on the terms of a Change Order Proposal Request, the Architect may issue a Change Order Directive on AIA Form G714. The Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. The Construction Change Directive contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.06 CHANGE ORDER PROCEDURES

- A. Upon the Owner's approval of a Change Order Proposal Request, the Architect will issue a Change Order for signatures of the Owner and the Contractor on AIA Form G701.
1. Change Orders will be numbered in sequence and dated.
 2. Change Orders will describe the change or changes and will refer to the Proposal Requests or Supplemental Instructions involved.
 3. The Architect will issue four (4) copies of each Change Order to the Contractor.
 - a. The Contractor promptly shall sign all four (4) copies and return three (3) copies to the Architect.
 - b. The Architect will retain one (1) signed copy in his file and will forward two (2) signed copies to the Owner.

2.0 PRODUCTS

Not Applicable to this Section.

3.0 EXECUTION

Not Applicable to this Section.

END OF CONTRACT MODIFICATION PROCEDURES

01 29 00
PAYMENT PROCEDURES

1.0 GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Schedule of Values and Applications for Payment.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Form of Agreement: Contract Sum, schedule for payments.
 - 3. Section 01 33 00: Submittal Procedures: Construction Schedule.
 - 4. Section 01 77 00: Closeout Procedures: Payments upon Substantial Completion and Completion of the Work.

1.02 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of Schedule of Values with preparation of the Contractor's Construction Schedule.
- B. Approval: Submit and obtain the Architect's approval of the Schedule of Values at the earliest feasible date, but in no case later than ten (10) days before the date scheduled for submittal of the initial Application for Payment.
- C. Format and content: Use the Table of Contents in this Project Manual as a guide to establish the format for the Schedule of Values.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal
 - 2. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Table of Contents in this Project Manual. Break principal subcontract amounts down into several line items (i.e. Concrete shall be broken down into walks, paving, piers, grade beams, slabs, etc. as a minimum).
 - 3. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
 - 4. Provide separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
 - 5. Margins of Cost: Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.
 - 6. Temporary facilities and other major cost items that are not direct cost of actual work-in-place shall be shown as separate line items in the Schedule of Values.
 - 7. Schedule updating: List Change Orders as a separate line item when Change Orders or Construction Change Directives result in a change in the Contract Sum.
 - 8. Overhead and profit: Show separate line item values for overhead and profit. Percent draw each month to coincide with percent of job completion.

1.04 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
 - 1. The initial Application for Payment, the Application for Payment at the time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment application forms: Use AIA Form G702 Application and Certificate for Payment and AIA Form G703 Continuation Sheet.
- C. Application preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Architect will return incomplete applications without action.
 - 1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions are made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- D. Transmittal: Submit four (4) signed and notarized original copies of each Application for Payment to the Architect. At least one copy shall be complete, including waivers of lien and similar attachments, when required.
- E. Waivers of mechanics lien: With each Application for Payment, submit waivers of mechanics lien from every entity who is lawfully entitled to file a mechanics lien arising out of the Contract or a Contractor's Certificate of Release of Liens for the construction period covered by the previous application.
- F. Payment application period: The period of construction Work covered by each Application for Payment is the period from the previous Application to the 20th day of the current month. Applications shall not include dates projected beyond the date of the Application.
- G. Payment application times:
 - 1. Informal submittal: Make an informal submittal of the Application for Payment to the Architect at the last regularly scheduled project meeting of each month.
 - a. Revise the informal submittal of the Application for Payment as agreed at the Project meeting, initialing all copies.
 - 2. Formal submittal: Make a formal submittal of the Application for Payment by the 25th day of the month based on the revised informal submittal.
 - a. By the end of the month, the Architect will compare the formal submittal with the approved informal submittal and, when approved, will sign the Application and Certificate for Payment and will distribute:
 - 1) One (1) copy to Contractor.
 - 2) One (1) copy to Architect's file.
 - 3) Two (2) copies to Owner.
- H. Payment to Contractor: Upon approval, Owner will disburse progress payments directly to the Contractor within thirty (30) days of receipt of the Application for Payment.
 - 1. Basis for payment shall be ninety five percent (95%) of the total labor and materials less the aggregate total of all previous payments. The aggregate total of all progress payments shall not exceed ninety five percent (95%) of the Contract Sum.
- I. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:
 - 1. List of subcontractors.
 - 2. List of principal suppliers and fabricators.
 - 3. Schedule of Values.
 - 4. Contractor's Construction Schedule (preliminary if not final).
 - 5. List of Contractor's staff assignments.
 - 6. List of Contractor's principal consultants.
 - 7. Copies of building permit.
 - 8. Copies of authorizations and licenses from governing authorities for performance of the Work.
 - 9. Initial progress report.
 - 10. Report of preconstruction meeting.

- J. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 2. Administrative actions and submittals that shall precede or coincide with the application include:
 - a. Occupancy permits and similar approvals.
 - b. Warranties (guarantees) and maintenance agreements.
 - c. Test/adjust/balance records.
 - d. Change of door locks to Owner's access.
 - e. Maintenance instructions.
 - f. Meter readings.
 - g. Startup performance reports.
 - h. Changeover information related to Owner's occupancy, use, operation, and maintenance.
 - i. Final cleaning.
 - j. Application for reduction of retainage and consent of surety.
 - k. Advice on shifting insurance coverages.
 - l. List of incomplete Work recognized as exceptions to Architect's Certificate of Substantial Completion.
- K. Final Application for Payment: Administrative actions and submittals that shall precede or coincide with submittal of the final Application for Payment include:
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Assurance that unsettled claims will be settled.
 4. Assurance that Work not complete and accepted will be completed without undue delay.
 5. Transmittal of required Project construction records to the Owner.
 6. Proof that taxes, fees and similar obligations have been paid.
 7. Removal of temporary facilities and services.
 8. Removal of surplus materials, rubbish, and similar elements.
- Upon approval, Owner will disburse final payment directly to the Contractor within thirty (30) days of receipt of the Final Application for Payment.

2.0 PRODUCTS
Not Applicable to this Section.

3.0 EXECUTION
Not Applicable to this Section.

END OF PAYMENT PROCEDURES

01 31 00
PROJECT MANAGEMENT & COORDINATION

1.0 GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
 - 1. Coordination.
 - 2. Administrative and supervisory personnel.
 - 3. General installation provisions.
 - 4. Cleaning and protection.
- B. Related work:
 - 1. Section 01 31 19: Project Meetings.
 - 2. Section 01 33 00: Submittal Procedures: Construction Schedule.
 - 3. Section 01 71 23: Field Engineering.
 - 4. Section 01 77 00: Closeout Procedures.

1.02 COORDINATION

- A. Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of these Specifications that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 - 3. Make provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.
- C. Administrative procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to:
 - 1. Preparation of schedules.
 - 2. Installation and removal of temporary facilities.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Project closeout activities.
- D. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.03 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Project supervision: Maintain an experienced and capable superintendent on the project full time when work is being accomplished.
- B. Staff Names: Within fifteen (15) days of Notice to Proceed, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.
 - 1. Post copies of the list in the Project meeting room and the temporary field office where applicable.

2.0 PRODUCTS

Not Applicable to this Section.

3.0 EXECUTION

3.01 GENERAL COORDINATION PROVISIONS

- A. Inspection of conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until satisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- E. Visual effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

3.02 CLEANING AND PROTECTION

- A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to:
 - 1. Excessive static or dynamic loading.
 - 2. Excessive internal or external pressures.
 - 3. Excessively high or low temperatures.
 - 4. Excessively high or low humidity.
 - 5. Thermal shock.
 - 6. Air contamination or pollution.
 - 7. Water or ice.
 - 8. Solvents.
 - 9. Chemicals.
 - 10. Light.
 - 11. Radiation.
 - 12. Puncture.
 - 13. Abrasion.
 - 14. Heavy traffic.
 - 15. Soiling, staining or corrosion.
 - 16. Bacteria.
 - 17. Rodent and insect infestation.
 - 18. Combustion.
 - 19. Electrical current.

20. High speed operation.
21. Improper lubrication.
22. Unusual wear or other misuse.
23. Contact between incompatible materials.
24. Destructive testing.
25. Misalignment.
26. Excessive weathering.
27. Unprotected storage.
28. Improper shipping or handling.
29. Theft.
30. Vandalism.

END OF PROJECT MANAGEMENT & COORDINATION

01 31 19
PROJECT MEETINGS

1.0 GENERAL

1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to:
 - 1. Preconstruction conferences.
 - 2. Progress meetings.
 - 3. Coordination meetings.
- B. Related work:
 - 1. Section 01 29 00: Payment Procedures.
 - 2. Section 01 31 00: Project Management & Coordination.
 - 2. Section 01 33 00: Submittal Procedures.

1.02 PRECONSTRUCTION CONFERENCE

- A. Schedule a preconstruction conference before starting construction, at a time convenient to the Owner and the Architect, but no later than fifteen (15) days after execution of the Agreement. Hold the conference at the Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
- B. Attendees: Authorized representatives of the Owner and the Architect; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
- C. Agenda: Discuss items of significance that could affect progress including the following:
 - 1. Tentative construction schedule.
 - 2. Critical work sequencing.
 - 3. Designation of responsible personnel.
 - 4. Procedures for processing field decisions and Change Orders.
 - 5. Procedures for processing Applications for Payment.
 - 6. Distribution of Contract Documents.
 - 7. Submittal of Shop Drawings, Product Data and Samples.
 - 8. Preparation of Record Documents.
 - 9. Use of premises.
 - 10. Parking availability
 - 11. Office, work and storage areas.
 - 12. Equipment deliveries and priorities.
 - 13. Safety procedures.
 - 14. First aid.
 - 15. Security
 - 16. Housekeeping
 - 17. Schedule for progress meetings
 - 18. Working hours.

1.03 PROGRESS MEETINGS

- A. Conduct progress meetings at the Project site at regular intervals; approximately every two (2) weeks. Notify the Owner and the Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.
- B. Attendees: In addition to representatives of the Owner and the Architect, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities may be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
- C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

1. At the last regularly scheduled progress meeting of each month, review preliminary submittal of payment request in accordance with Section 01 29 00 of these Specifications.
 2. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
 3. Review the present and future needs of each entity present, including the following:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Status of submittals.
 - e. Deliveries.
 - f. Off-site fabrication problems.
 - g. Access.
 - h. Site utilization.
 - i. Temporary facilities and services.
 - j. Hours of work.
 - k. Hazards and risks.
 - l. Housekeeping.
 - m. Quality and work standards.
 - n. Change Orders.
 - o. Documentation of information for payment requests.
- D. Reporting: No later than three (3) days after each meeting, distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
1. Schedule updating: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.
- 1.04 COORDINATION MEETINGS
- A. Conduct project coordination meetings at regular intervals convenient to all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special preinstallation meetings.
 - B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
 - C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.
- 2.0 PRODUCTS
Not Applicable to this Section.
- 3.0 EXECUTION
Not Applicable to this Section.

END OF PROJECT MEETINGS

01 33 00
SUBMITTAL PROCEDURES

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:
 - 1. Contractor's Construction Schedule.
 - 2. Shop Drawings.
 - 3. Product Data.
 - 4. Samples.
 - 5. Quality assurance submittals.
- B. Related work:
 - 1. Section 01 29 00: Payment Procedures: Schedule of Values.
 - 2. Section 01 31 19: Project Meetings: Meeting minutes.
 - 3. Section 01 45 00: Quality Control: Inspection and test reports.
 - 4. Section 01 78 00: Closeout Submittals: Closeout documents.

1.02 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
 - 3. Verify all dimensions and that each item and its submittal conform in all respects with the specified requirements. Affix the Contractor's signature to each submittal certifying that this coordination has been performed.
 - 4. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
 - a. Allow two (2) weeks for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two (2) weeks for processing each resubmittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
- B. Submittal preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
 - 1. Provide a space approximately 4 x 5 IN on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 - 2. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of the Architect.
 - d. Name and address of the Contractor.
 - e. Name and address of the subcontractor.

- f. Name and address of the supplier.
 - g. Name of the manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
- C. Submittal transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the Contractor.
- 1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Contractor's responsibility for deviations from Contract Document requirements is not relieved by Architect's review unless specific deviations are brought to the attention of the Architect in writing. Include Contractor's certification that information complies with Contract Document requirements.
 - 2. When material is resubmitted for any reason, transmit under a new letter of transmittal and identify as a resubmittal.

1.03 CONSTRUCTION SCHEDULE

- A. Bar-chart schedule: Prepare a fully developed, horizontal bar-chart type, contractor's construction schedule. Submit within thirty (30) days after the date established for "Commencement of the Work".
- 1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the Schedule of Values.
 - 2. Within each time bar, indicate estimated completion percentage in 10 percent (10%) increments. As Work progresses, place a contrasting mark in each bar to indicate actual completion.
 - 3. Prepare the schedule on a sheet, or a series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 - 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
 - 5. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, progress reports, payment requests, and other schedules.
 - 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.
- B. Phasing: On the schedule, where applicable, show how requirements for phased completion of the Work by separate Contractors and partial occupancy by the Owner affect the sequence of the Work.
- C. Work stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.
- D. Cost correlation: At the head of the schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of Work performed as of the dates used for preparation of payment requests.
- E. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
- 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- F. Schedule updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule and submit with each month's Application for Payment.

1.04 SHOP DRAWINGS

- A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
 - 1. Dimensions.
 - 2. Identification of products and materials included by sheet number and detail number.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurement.
 - 6. Sheet size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 x 11 IN but no larger than 36 x 48 IN.
 - 7. Submittal: Submit one (1) correctable, translucent, reproducible print and three (3) blue- or black-line prints for the Architect's review.
 - a. The Architect will return the reproducible print.
 - b. The blue- or black-line prints will be retained by the Architect for his use and distribution to his consultants and the Owner.
 - c. The Contractor may make and distribute such copies as are required for his purposes.
 - d. The Contractor shall provide and maintain one (1) copy as a Record Document.
 - e. The Contractor shall provide necessary final copies to be included in maintenance manuals.
 - 8. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

1.05 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves. Where Product Data must be specially prepared because printed data is not suitable for use, submit as Shop Drawings.
 - 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurements.
 - f. Notation of coordination requirements.
 - 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 - 3. Submit the number of copies which are required for the Contractor's use, including maintenance manuals and Record Documents, PLUS three (3) copies. The Architect will retain three (3) copies for his use and distribution to his consultants and the Owner and will return the other copies marked with action taken and corrections or modifications required.
 - 4. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal form.
 - a. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.06 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.
 - 1. Mount or display Samples in the manner specified to facilitate review of qualities indicated. Prepare samples to match the Architect's Sample. Include the following:
 - a. Specification Section number and reference.
 - b. Generic description of the Sample.
 - c. Sample source.
 - d. Product name or name of the manufacturer.
 - e. Compliance with recognized standards.
 - f. Availability and delivery time.
 - 2. Submit Samples for review of size, kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
 - c. Refer to other Specification Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
 - 3. Preliminary submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices.
 - a. The Architect will review and return preliminary submittals with the Architect's notation, indicating selection and other action.
 - 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit three (3) sets. The Architect will return one (1) set marked with the action taken.
 - 5. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets of Samples to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
 - 1. Field Samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.
 - a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.07 QUALITY ASSURANCE SUBMITTALS

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of these Specifications.
- B. Certifications: Where other Sections of these Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
 - 1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

- C. Inspection and test reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Section 01 45 00 Quality Control.

1.08 ARCHITECT'S ACTION

- A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.
- B. Action stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:
 - 1. Final unrestricted release: When the Architect marks a submittal "No Exceptions Taken", the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
 - 2. Final but restricted release: When the Architect marks a submittal "Make Corrections Noted", the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 - 3. Returned for resubmittal: When the Architect marks a submittal "Revise and Resubmit", do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in according to the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not use, or allow others to use, submittals marked "Revise and Resubmit" at the Project site or elsewhere where Work is in progress.
 - 4. Other action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "No Exceptions Taken".
- C. Unsolicited submittals: The Architect will return unsolicited submittals to the sender without action.

2.0 PRODUCTS

Not Applicable to this Section.

3.0 EXECUTION

Not Applicable to this Section.

END OF SUBMITTAL PROCEDURES

01 42 00
REFERENCES

1.0 GENERAL

1.01 DEFINITIONS

- A. All definitions set forth in the General Conditions of the Contract for Construction or in other Contract Documents are applicable to the Bidding Documents.
- B. "Bidding Documents" include the Invitation to Bid, Instructions to Bidders, the Bid Form, other sample bidding and contract forms and the proposed Contract Documents including any Addenda issued prior to receipt of bids.
- C. "Addenda" are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.
- D. A "Bid" is a complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated therein supported by data called for by the Bidding Documents.
- E. "Base Bid" is the sum stated in the Bid for which the Bidder offers to perform the Work described as the base, to which Work may be added or deducted for sums stated in Alternate Bids.
- F. An "Alternative Bid" is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in project scope or materials or methods of construction described in the Bidding Documents is accepted.
- G. A "Unit Price" is an amount stated in the Bid as a price per unit of measurement for materials or services as described in the Contract Documents.
- H. A "Bidder" is one who submits a Bid for a prime contract with the Owner for the Work described in the proposed Contract Documents.
- I. A "Sub-bidder" is one who submits a bid to a Bidder for materials or labor for a portion of the Work.
- J. "Indicated" refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown", "noted", "scheduled", and "specified" are used to help the reader locate the reference. Location is not limited.
- K. "Directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean directed by the Architect, requested by the Architect, and similar phrases.
- L. "Approved" when used conjunction with the Architect's action on the Contractor's submittals, applications and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.
- M. "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- N. "Furnish" means supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- O. "Install" describes operations at the Project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- P. "Provide" means to furnish and install a product, complete and ready for the intended use.
- Q. "Product" includes materials, systems, and equipment.
- R. "Similar" means in its general sense and not necessarily identical.
- S. "Building code" and "code" refers to regulations of governmental agencies having jurisdiction.
- T. An "Installer" is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 - 1. The term "experienced", when used with the term "installer", means having a minimum of five (5) previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.

2. Trades: Using terms such as “carpentry” does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as “carpenter”. It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
3. Assigning specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
 - a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.
- U. “Project site” is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- V. “Testing agencies” are independent entities engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.02 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 2004 MASTERFORMAT format and numbering system.
- B. Specification content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 1. Abbreviated language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Streamlined language: The Specifications generally use the imperative mod and streamlined language. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.
 - a. The words “shall be” are implied where a colon (:) is used within a sentence or phrase.

1.03 INDUSTRY STANDARDS

- A. Applicability of standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication dates: Where the date of issue of a referenced standard is not specified, comply with the standard in effect as of the date of the Contract Documents.
- C. Conflicting requirements: Where compliance with two (2) or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer to the Architect before proceeding for a decision on requirements that are different but apparently equal, and where it is uncertain which requirement is the most stringent.

1. Minimum quantity or quality levels: The quantity or quality level shown or specified shall be the minimum acceptable. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.
- D. Copies of standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
- E. Abbreviations and names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research Co.'s "Encyclopedia of Associations", available at most libraries.
- F. Abbreviations and names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in the Contract Documents, are defined to mean the associated names.

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
ACPA	American Concrete Pipe Association
ADA	American's with Disabilities Act
ADC	Air Diffusion Council
AFBMA	Anti-Friction Bearing Manufacturers Association
AFPA	American Forest and Paper Association
AGA	American Gas Association
AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects
AIA	American Insurance Association
AIHA	American Industrial Hygiene Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALI	Associated Laboratories Inc.
ALSC	American Lumber Standards Committee
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
AOAC	Association of Official Analytical Chemists
AOSA	Association of Official Seed Analysts
APA	American Plywood Association
APA	American Parquet Association
API	American Petroleum Institute
ARI	Air Conditioning and Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASA	Acoustical Society of America
ASC	Adhesive and Sealant Council

ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPA	American Sod Producers Association
ASPE	American Society of Plumbing Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
ATIS	Alliance for Telecommunications Industry Solutions
AWCMA	American Window Covering Manufacturers Association
AWI	American Woodwork Institute
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders' Hardware Manufacturers Association
BIA	Brick Institute of America
BIFMA	Business and Institutional Furniture Manufacturers Association
BOCA	Building Officials and Code Administration
CAGI	Compressed Air and Gas Institute
CAUS	Color Association of the United States
CBM	Certified Ballast Manufacturers Association
CCC	Carpet Cushion Council
CDA	Copper Development Association Inc.
CFFA	Chemical Fabrics & Film Association Inc.
CGA	Compressed Gas Association
CISCA	Ceiling and Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CTI	Cooling Tile Institute of America
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
DLPA	Decorative Laminate Products Association
ECSA	Exchange Carriers Standards Association
EIA	Electronic Industries Association
EIMA	Exterior Insulation Manufacturers Association
EJMA	Expansion Joint Manufacturers Association
ETL	ETL Testing Laboratories Inc.
FCI	Fluid Controls Institute
FCIB	Floor Covering Installation Board
FGMA	Flat Glass Marketing Association
FM	Factory Mutual Engineering and Research Organization
FTI	Facing Tile Institute
GA	Gypsum Association
HEI	Heat Exchange Institute
HI	Hydronics Institute
HI	Hydraulic Institute
HMA	Hardwood Manufacturers Association
HPMA	Hardwood Plywood Manufacturers Association
HPVA	Hardwood Plywood and Veneer Association
IBD	Institute of Business Designers
IBC	International Building Code
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
IESNA	Illuminating Engineering Society of North America
IGCC	Insulating Glass Certification Council
ILI	Indiana Limestone Institute of America

IMSA	International Municipal Signal Association
IRI	Industrial Risk Insurers
ISA	Instrument Society of America
KCMA	Kitchen Cabinet Manufacturers Association
LIA	Lead Industries Association Inc.
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MCAA	Mechanical Contractors Association of America
MFMA	Maple Flooring Manufacturers Association
MIA	Marble Institute of America
ML/SFA	Metal Lath/Steel Framing Association
MSS	Manufacturers Standardization Society
NAA	National Arborist Association
NAAMM	National Association of Architectural Metal Manufacturers
MAIMA	North American Insulation Manufacturers Association
NAPA	National Asphalt Pavement Association
NAPF	National Association of Plastic Fabricators (Now DLPA)
NBGQA	National Building Granite Quarries Association
NBS	National Bureau of Standards
NBHA	National Builders Hardware Association (Now DHI)
NCMA	National Concrete Masonry Association
NCRPM	National Council on Radiation Protection and Measurement
NEC	National Electrical Code (From NFPA)
NECA	National Electrical Contractors Association
NEII	National Elevator Industry Inc.
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NFRC	National Fenestration Rating Council
NHLA	National Hardwood Lumber Association
NKCA	National Kitchen Cabinet Association
NLGA	National Lumber Grades Authority
NOFMA	National Oak Flooring Manufacturers Association
NPA	National Particleboard Association
NPCA	National Paint and Coatings Association
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NSSEA	National School Supply and Equipment Association
NTMA	National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers Association (Now NWWDA)
NWWDA	National Wood Window and Door Association (Formerly NWMA)
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
RMA	Rubber Manufacturers Association
SAMA	Scientific Apparatus Makers Association
SBCCI	Southern Building Code Congress International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SGCC	Safety Glazing Certification Council
SHLMA	Southern Hardwood Lumber Manufacturers Association
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SPRI	Single Ply Roofing Institute

SSPC	Steel Structures Painting Council
SSPMA	Sump and Sewage Pump Manufacturers
SWI	Steel Window Institute
SWPA	Submersible Wastewater Pump Association
TAS	Texas Accessibility Standards
TCA	Tile Council of America
TIMA	Thermal Insulation Manufacturers Association
TPI	Truss Plate Institute
UBC	Uniform Building Code
UFC	Uniform Fire Code
UL	Underwriters Laboratories
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Wallcovering Manufacturers Association
WIC	Woodwork Institute of California
WLPDIA	Western Lath Plaster Drywall Industries Association
WRI	Wire Reinforcement Institute
WSC	Water Systems Council
WSFI	Wood and Synthetic Flooring Institute
WWPA	Western Wood Products Association
WWPA	Woven Wire Products Association

G. Federal government agencies: Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government.

CE	Corps of Engineers (U.S. Dept. of the Army)
CFR	Code of Federal Regulations
CPSC	Consumer Product Safety Commission
CS	Commercial Standard (U.S. Dept. of Commerce)
DOC	Department of Commerce
DOT	Department of Transportation
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration (U.S. DOT)
FCC	Federal Communications Commission
FDA	Food and Drug Administration
FHA	Federal Housing Administration (U.S. Dept. of HUD)
FS	Federal Specification (From GSA)
GSA	General Services Administration
MIL	Military Standardization Documents (U.S. Dept. of Defense)
NIST	National Institute of Standards and Technology (U.S. Dept. of Agriculture)
OSHA	Occupational Safety and Health Administration (U.S. Dept. of Labor)
PS	Public Standard (U.S. Dept. of Commerce)
REA	Rural Electrification Administration (U.S. Dept. of Agriculture)
USDA	U.S. Department of Agriculture
USPS	U.S. Postal Service

2.0 PRODUCTS
Not Applicable to this Section.

3.0 EXECUTION
Not Applicable to this Section.

END OF REFERENCES

01 50 00
TEMPORARY FACILITIES & CONTROLS

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Telephone service.
 - 4. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
 - 1. Temporary heat.
 - 2. Field offices and storage sheds.
 - 3. Temporary roads and paving.
 - 4. Sanitary facilities, including drinking water.
 - 5. Dewatering facilities and drains.
 - 6. Temporary enclosures.
 - 7. Hoists and temporary elevator use.
 - 8. Temporary project identification signs and bulletin boards.
 - 9. Waste disposal services.
 - 10. Rodent and pest control.
 - 11. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, and lights.
 - 3. Sidewalk bridge or enclosure fence for the site.
 - 4. Environmental protection.

1.02 SUBMITTALS

- A. Temporary utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and termination schedule: Within fifteen (15) days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.

1.03 REFERENCES

- A. ANSI A10 Series: Construction and Demolition Standards.
- B. NECA 200: Recommended Practice for Installing and Maintaining Temporary Electrical Power at Construction Sites.
- C. NFPA 10: Standard for Portable Fire Extinguishers.
- D. NFPA 70: National Electric Code.
- E. NFPA 241: Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations if authorities having jurisdiction including, but not limited to, the following:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police and Fire Department rules.
 - 5. Environmental protection regulations.

- B. Standards: Comply with NFPA 241 “Standard for Safeguarding Construction, Alterations, and Demolition Operations”, ANSI A10 Series standards for “Safety Requirements for Construction and Demolition”, and NECA Electrical Design Library “Temporary Electrical Facilities”.
 - 1. Electrical service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service NFPA 70 “National Electrical Code”.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.05 PROJECT CONDITIONS

- A. Temporary utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the site.

2.0 PRODUCTS

2.01 MATERIALS

- A. General: Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
 - 1. Use only cleaning materials which are compatible with the surface being cleaned, as recommended by the manufacturer of the material, and as needed to maintain the specified standard of cleanliness.
- B. Lumber and plywood: Comply with requirements Section 06 10 00 Rough Carpentry.
 - 1. For job-built temporary offices, shops, and sheds within the construction area, provide UL labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
 - 2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
 - 3. For fences and vision barriers, provide minimum 3/8 IN thick exterior plywood.
 - 4. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8 IN thick exterior plywood.
- C. Gypsum wallboard: Provide gypsum wallboard on interior walls of temporary offices.
- D. Roofing materials: Provide UL Class A standard-weight asphalt shingles or LTL Class C mineral-surfaced roll; roofing on roofs of job-built temporary offices, shops, and sheds.
- E. Paint: Comply with requirements of Section 09 90 00 Painting.
 - 1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior-grade acrylic-latex emulsion over exterior primer.
 - 2. For sign panels and applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
 - 3. For interior walls of temporary offices, provide two (2) coats interior latex-flat wall paint.
- F. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- G. Water: Provide potable water approved by local health authorities.
- H. Open-mesh fencing: Provide 0.120 IN thick, galvanized 2 IN chain link fabric fencing 6 FT high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 IN I.D. for line posts and 2-1/2 IN I.D. for corner posts.

2.02 EQUIPMENT

- A. General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
 - 1. Use only cleaning equipment which is compatible with the surface being cleaned, as recommended by the manufacturer of the material, and as needed to maintain the specified standard of cleanliness.
- B. Water hoses: Provide 3/4 IN, heavy-duty, abrasion-resistant, flexible rubber hoses 100 FT long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shut off nozzles at hose discharge.
- C. Electrical outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110 to 120 Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical power cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Lamps and light fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating units: Provide temporary heating units that have been tested and labeled by LTL, FK or another recognized trade association related to the type of fuel being consumed.
- G. Temporary offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- H. Temporary toilet units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. Fire extinguishers: Provide hand-carried, portable, UL rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

3.0 EXECUTION

3.01 INSTALLATION

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

3.02 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.

4. Use charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Architect. Neither the Owner nor Architect will accept cost or use charges as a basis of claims for Change Orders.
- B. Water service:
 1. Contractor may use existing water facilities at the site.
 - C. Electric power service:
 1. Contractor may use existing electrical service at the site.
 2. Provide all necessary temporary wiring, extensions, and temporary lighting devices.
 - D. Temporary lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching.
 1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
 - E. Temporary heat: Provide temporary heat required by construction activities for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
 - F. Heating facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP gas or fuel-oil heaters with individual space thermostatic control.
 1. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.
 - G. Temporary telephones: Provide temporary telephone service throughout the construction period for all personnel engaged in construction activities. Install telephone on a separate line for each temporary office and first-aid station.
 1. Separate telephone lines: Provide additional telephone lines for the following:
 - a. Where an office has more than two (2) occupants, install a telephone for each additional occupant or pair of occupants.
 - b. Provide a dedicated telephone line for a fax machine in the field office.
 2. At each telephone, post a list of important telephone numbers.
 - H. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
 1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
 - I. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 1. Provide separate facilities for male and female personnel.
 - J. Wash facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
 1. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
 - K. Drinking-water facilities: Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper supply.
 1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45° F to 55° F.
 - L. Sewers and drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.

1. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
 2. Connect temporary sewers to the municipal system, as directed by sewer department officials.
 3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.
- M. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.03 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.
1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 FT of building lines. Comply with requirements of NFPA 241.
- C. Field offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:
1. Furnish with a desk and chairs, a file cabinet, plan table, plan rack, and a bookcase.
 2. Equip with a water cooler and private toilet complete with water closet, lavatory, and medicine cabinet unit with a mirror.
- D. Storage and fabrication sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on the site.
- E. Temporary paving: Construct and maintain temporary roads and paving to support the indicated loading adequately and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas, and parking where the same permanent facilities will be located. Review proposed modifications to permanent paving with the Architect.
1. Paving: Comply with requirements of Division 2 grading specifications for construction and maintenance of temporary paving.
 2. Coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.
 3. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.
 4. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration, and supervision.
- F. Dewatering facilities and drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.
- G. Temporary enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

1. Where heat is needed, and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 SF or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 4. Where temporary wood or plywood enclosure exceeds 100 SF in area, use UL labeled, fire-retardant-treated material for framing and main sheathing.
- H. Temporary lifts and hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- I. Temporary elevator use (where applicable): Refer to Division 14 Sections for elevators.
- J. Project identification and temporary signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.
1. Project identification signs: Engage an experienced sign painter to apply graphics. Submit sketch of sign to Architect for approval prior to fabrication. Include:
 - a. Project name.
 - b. Owner: Collin County.
 - c. Architect: Spurgin & Associates Architects.
 - d. Contractor: General Contractor awarded this Project.
 2. Temporary signs: Prepare signs to provide directional information to construction personnel and visitors.
- K. Temporary exterior lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.
- L. Collection and disposal of waste: Collect waste from construction areas and elsewhere day. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 degrees F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
- M. Rodent and pest control: Before deep foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- N. Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate. Cover finished, permanent stairs with a protective covering of plywood or similar material so finishes will be undamaged at the time of acceptance.

3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.
- B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
- C. Permanent fire protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. Barricades, warning signs, and lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- E. Enclosure fence: Before excavation begins, install an enclosure fence with lockable entrance gates at the entrance to the site. Provide protective fencing where required around the site as determined by Contractor sufficient to accommodate and protect construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.
1. Provide open-mesh, chain link fencing with posts set in a compacted mixture of gravel and earth.
- F. Security enclosure and lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- G. Environmental protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.05 CONSTRUCTION CLEANING

- A. General:
1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.
 2. Do not allow accumulation of scrap, debris, waste material and other items not required for construction of this Work.
 3. At least twice each month, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
 4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- B. Site:
1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.
 2. Maintain the site in a neat and orderly condition at all times.
- C. Structures:
1. Weekly, and more often if necessary, inspect the structure and pick up all scrap, debris and waste material. Remove such items to the place designated for their storage.
 2. Weekly, and more often if necessary, sweep interior spaces clean.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a hand-held broom.

3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.
4. Following the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials are installed.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material which, in the opinion of the Architect, may be injurious to the finish floor material.

3.06 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
 3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF TEMPORARY FACILITIES & CONTROLS

01 60 00
PRODUCT REQUIREMENTS

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. Related work:
 - 1. Section 01 33 00: Submittal Procedures: Specifies requirements for submittal of the Contractor's Construction Schedule.
 - 2. Section 01 42 00: References: Specifies the applicability of industry standards to products specified.
 - 3. Section 01 62 00: Product Options: Specifies administrative procedures for handling requests for substitutions made after award of the Contract.

1.02 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties", "systems", "structure", "finishes", "accessories", and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material", "equipment", "system", and terms of similar intent.
 - a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
 - b. "Foreign Products" as distinguished from "domestic products" are items substantially manufactured (50% or more of value) outside the United States and its possessions. Products produced or supplied by entities substantially owned (more than 50%) by persons who are not citizens of, nor living within, the United States and its possessions are also considered to be foreign products.
 - 2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - 3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.03 QUALITY ASSURANCE

- A. Source limitations: To the fullest extent possible, provide products of the same kind from a single source.
 - 1. When specified products are available only from sources that do not, or cannot, produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources producing products that possess these qualities, to the fullest extent possible.
- B. Compatibility of options: When the Contractor is given the option of selecting between two (2) or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
 - 1. Each prime contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime of separate contractors.
 - 2. If a dispute arises between prime contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are incompatible and must be replaced.

- C. Foreign product limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:
 - 1. No available domestic product complies with the Contract Documents.
 - 2. Domestic products that comply with the Contract Documents are available only at prices or terms substantially higher than foreign products that comply with the Contract Documents.
- D. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.
 - 1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
 - 2. Equipment nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 - 3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 - 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 - 7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

2.0 PRODUCTS

2.01 PRODUCT SELECTION

- A. General product requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.
 - 1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
 - 2. Standard products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product selection procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Proprietary specification requirements: Where Specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
2. Semi-proprietary specification requirements: Where Specifications name two (2) or more products or manufacturers, provide one (1) of the products indicated. No substitutions will be permitted.
 - a. Where Specifications specify products or manufacturers by name, accompanied by the term "or equal" or "or approved equal," comply with Section 01630 Product Options and Substitutions to obtain approval for use of an unnamed product.
3. Nonproprietary specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Section 01630 Product Options and Substitutions to obtain approval for use of an unnamed product.
4. Descriptive specification requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
5. Performance specification requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.
 - a. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
6. Compliance with standards, codes, and regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
7. Visual matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with Section 01630 Product Options and Substitutions for selection of a matching product in another product category.
8. Visual selection: Where specified product requirements include the phrase "...as selected from the manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.
9. Allowances: Refer to individual Specification Sections and Section 01020 Allowances for allowances that control product selection and for procedures required for processing such selections.

3.0 EXECUTION

3.01 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF PRODUCT REQUIREMENTS

01 62 00
PRODUCT OPTIONS

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- B. Related work:
 - 1. Section 01 33 00: Submittal Procedures: Specifies requirements for submittal of the Contractor's Construction Schedule.
 - 2. Section 01 42 00: References: Specifies the applicability of industry standards to products specified.
 - 3. Section 01 60 00: Product Requirements: Specifies requirements governing the Contractor's selection of products and product options.

1.02 DEFINITIONS

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:
 - 1. Revisions to the Contract Documents requested by the Owner or Architect.
 - 2. Specified options of products and construction methods included in the Contract Documents.
 - 3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.03 SUBMITTALS

- A. Substitution request submittal: The Architect will consider requests for substitution if received within sixty (60) days after commencement of the Work. Requests received more than sixty (60) days after commencement of the Work may be considered or rejected at the discretion of the Architect.
 - 1. Submit three (3) copies of each request for substitution for consideration. Submit requests on the form included at the end of this Section according to procedures required for change-order proposals.
 - 2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
 - 3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the proposed substitution.
 - b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
 - c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
 - d. Samples, where applicable or requested.
 - e. A statement indicating the substitutions effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. The Contractor's certification that the proposed substitution proposed is

- equal to or better in every significant respect to that required in the Contract Documents and is appropriate for the applications indicated.
- h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
4. Architect's action: If necessary, the Architect will request additional information or documentation for evaluation. The Architect will notify the Contractor of acceptance or rejection of the substitution by return of the substitution request form.
- a. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.
 - b. The Architect's decision of acceptance or non-acceptance of a proposed substitution shall be final.

2.0 PRODUCTS

2.01 SUBSTITUTIONS

- A. Conditions: The Architect will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.
- 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents.
 - 3. The request is timely, fully documented, and properly submitted.
 - 4. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 - 5. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
 - 6. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
 - 7. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 - 8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
 - 9. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
 - 10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
 - 11. Where a proposed substitution involves more than one prime contractor, each contractor shall cooperate with the other contractors involved to coordinate the Work, provide uniformity and consistency, and assure compatibility of products.
- B. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.
- C. Failure of timely order: The Contractor is responsible for assuring the timely order of all materials specified. If a specified material, or color of material cannot be delivered by the

contract completion date, due to failure to order the material in a timely manner, the Contractor shall be responsible for supplying an equal or better material. The Architect shall be the sole determinant of the approved substitute material. The Contractor shall also be charged an amount equal to five percent (5%) of the value of the specified material. This amount shall be credited to the Owner through a Change Order to the contract. The word "material", as used in this Section, includes all items specified in the Specifications or shown on the Drawings.

3.0 EXECUTION

3.01 SUBSTITUTION REQUEST FORMS

- A. The Contractor shall submit requests for substitutions on the form included on the following pages.

SUBSTITUTION REQUEST FORM

Date: _____

Architect's Project No.: _____

Project: _____

To: SPURGIN & ASSOCIATES ARCHITECTS
103 W. Louisiana Street
McKinney, Texas 75069-4413

From: _____

=====

Contractor hereby requests acceptance of the following product or system as substitution in accordance with provisions of Section 01 62 00 of the Specifications.

1. SPECIFIED PRODUCT OR SYSTEM:

Substitution request for: _____

Specification Section No.: _____ Article: _____

2. SUPPORTING DATA:

_____ Product data adequate for evaluation of the request for proposed

_____ Sample is attached.

_____ Sample will be sent upon Architect/Engineer's request.

3. QUALITY COMPARISON (Add additional sheets if necessary)

	SPECIFIED PRODUCT	SUBSTITUTION
Name, Brand:	_____	_____
Catalog No.:	_____	_____
Manufacturer:	_____	_____
Vendor:	_____	_____
Significant Variations:	_____	_____
Maintenance Service Available:	_____ Yes _____	_____ No _____
Spare Parts Source:	_____	
Warranty Provided:	_____ Yes _____	_____ Years _____ No _____

By Whom: _____

4. PREVIOUS INSTALLATIONS:

Identification of similar projects on which proposed substitution was used:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

5. REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEM(S):

6. EFFECT OF SUBSTITUTION:

Does the proposed substitution affect other work (adverse or otherwise):

_____ No _____ Yes (if yes, explain) _____

Substitution Changes Contract Time:

_____ No _____ Yes (if yes, Add/Deduct _____ Days)

Substitution requires dimensional revisions or redesign of the work:

_____ No _____ Yes (if yes, attach explanation data)

7. CONTRACTOR'S STATEMENT OF CONFORMANCE OF PROPOSED SUBSTITUTION TO CONTRACT DOCUMENTS:

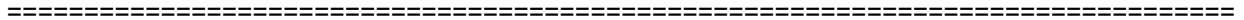
I/we have investigated the proposed substitution. I/we:

- * believe that it is equal or superior in all respects including function, appearance, and quality to specified product, except as stated above;
- * will provide same warranty and servicing requirements as specified for specified product;
- * have included complete implications of the substitution;
- * will pay for changes to the building design and special inspection costs caused by the use of this product;
- * will coordinate the incorporation of the proposed substitution in the work;
- * waive future claims for added cost to Contract caused by the substitution.

Contractor: _____

Date: _____ By: _____

Answer all questions and complete all blanks - use "NA" if not applicable. Unresponsive or incomplete request will be rejected.



ARCHITECT'S REVIEW AND ACTION

_____ Resubmit substitution request
 _____ Provide more information in the following areas:

_____ Sign Contractor's Statement of Conformance
 _____ Substitution is accepted.
 _____ Substitution is accepted, with the following comments:

_____ Substitution is rejected.
 _____ Substitution Request received too late.

SPURGIN & ASSOCIATES ARCHITECTS

Date

END OF PRODUCT OPTIONS

01 73 29
CUTTING & PATCHING

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for cutting and patching.
- B. Related work:
 - 1. In addition to other requirements specified, upon the Architect's request uncover work to provide for inspection of covered work and remove samples of installed materials for testing.
 - 2. Do not cut or alter work performed under separate contracts without the Architect's written permission.
 - 3. Section 01 31 00: Project Management & Coordination.
 - 4. Section 02 41 19: Selective Structure Demolition.
 - 5. Refer to other Sections of these Specifications for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
 - a. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 21-28 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.02 SUBMITTALS

- A. Cutting and patching proposal: Submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Owner requires approval of these procedures before proceeding. Request approval to proceed. Include the following information, as applicable, in the proposal:
 - 1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
 - 2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
 - 3. List products to be used and firms or entities that will perform Work.
 - 4. Indicate dates when cutting and patching will be performed.
 - 5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 - 6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
 - 7. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of unsatisfactory work.

1.03 QUALITY ASSURANCE

- A. Requirements for structural work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.
 - 1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
 - a. Foundation construction.
 - b. Bearing and retaining walls.
 - c. Structural concrete.
 - d. Structural steel.
 - e. Lintels.
 - f. Timber and primary wood framing.
 - g. Structural decking.
 - h. Stair systems.
 - i. Miscellaneous structural metals.

- j. Exterior curtain-wall construction.
 - k. Equipment supports.
 - l. Piping, ductwork, vessels, and equipment.
 - m. Structural systems of special construction in Division 13 Sections.
- B. Operational limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.
 - 1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
 - a. Primary operational systems and equipment.
 - b. Air or smoke barriers.
 - c. Water, moisture or vapor barriers.
 - d. Membranes and flashings.
 - e. Fire protection systems.
 - f. Noise and vibration control elements and systems.
 - g. Control systems.
 - h. Communication systems.
 - i. Conveying systems.
 - j. Electrical wiring systems.
 - k. Operating systems of special construction in Division 13 Sections.
- C. Visual requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.
 - 1. If possible retain the original Installer or fabricator to cut and patch the exposed Work listed below. If it is impossible to engage the original Installer or fabricator, engage another recognized experienced and specialized firm.
 - a. Processed concrete finishes.
 - b. Stonework and stone masonry.
 - c. Ornamental metal.
 - d. Matched-veneer woodwork.
 - e. Preformed metal panels.
 - f. Firestopping.
 - g. Window wall system.
 - h. Stucco and ornamental plaster.
 - i. Acoustical ceilings.
 - j. Terrazzo.
 - k. Finished wood flooring.
 - l. Fluid-applied flooring.
 - m. Carpeting.
 - n. Aggregate wall coating.
 - o. Wall covering.
 - p. Swimming pool finishes.
 - q. HVAC enclosures, cabinets or covers.

1.04 WARRANTY

- A. Existing warranties: Replace, patch and repair material and surfaces cut or damaged by methods and with materials in such a manner s not to void any warranties required or existing.

2.0 PRODUCTS

2.01 MATERIALS

- A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

3.0 EXECUTION

3.01 INSPECTION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.
 - 1. Before proceeding, meet at the Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.02 PREPARATION

- A. Temporary support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.03 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.
 - 1. In general, where cutting is required use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Cut through concrete and masonry using a cutting machine, such as a carborundum saw or diamond-core drill.
 - 4. Comply with requirements of applicable Division 2 Sections where cutting and patching requires excavating and backfilling.
 - 5. Where services are required to be removed, relocated or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 - 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

- a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
4. Patch, repair or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.04 CLEANING

- A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing material. Restore damaged pipe covering to its original condition.

END OF CUTTING & PATCHING

01 77 00
CLOSEOUT PROCEDURES

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 48.

1.02 SUBSTANTIAL COMPLETION

- A. Preliminary procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show one hundred percent (100%) completion for the portion of the Work claimed as substantially complete.
 - a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - b. If one hundred percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise the Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Submit Record Drawings, Maintenance Manuals, damage or settlement surveys, property surveys, and similar final record information.
 - 6. Deliver tools, spare parts, extra stock, and similar items.
 - 7. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
 - 8. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel.
 - 9. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
 - 10. Complete final cleanup requirements, including touchup painting.
 - 11. Touch up and otherwise repair and restore marred, exposed finishes.
- B. Inspection procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
 - 1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
 - 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.03 FINAL ACCEPTANCE

- A. Preliminary procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
 - 1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.

- a. Submit Contractor's Affidavit of Payments of Debts and Claims (AIA Form G706).
 - b. Submit Contractor's Affidavit of Release of Liens (AIA Form G706A).
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
 5. Submit Consent of Surety to Final Payment (AIA Form G707).
 6. Submit a final liquidated damages settlement statement.
 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection procedure: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.
1. Upon completion of reinspection, the Architect will prepare a certificate of final inspection. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 2. If necessary, reinspection will be repeated.

2.0 PRODUCTS

Not Applicable to this Section.

3.0 EXECUTION

3.01 CLOSEOUT PROCEDURES

- A. Operation and maintenance instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if Installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:
1. Maintenance Manuals.
 2. Record Documents.
 3. Spare parts and materials.
 4. Tools.
 5. Lubricants.
 6. Fuels.
 7. Identification systems.
 8. Control sequences.
 9. Hazards.
 10. Cleaning.
 11. Warranties and bonds.
 12. Maintenance agreements and similar continuing commitments.
- B. As part of instruction for operating equipment, demonstrate the following procedures:
1. Startup
 2. Shutdown.
 3. Emergency operations.
 4. Noise and vibration adjustments.
 5. Safety procedures.
 6. Economy and efficiency adjustments.
 7. Effective energy utilization.

3.02 FINAL CLEANING

- A. General: The General Conditions require general cleaning during construction. Regular cleaning is included in Section 01 50 00 Temporary Facilities & Controls.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Cleaning each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification for Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free conditions, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps. Replace all HVAC filters.
 - e. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved or planted to a smooth, even-textured surface.
- C. Removal of protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
 - 1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF CLOSEOUT PROCEDURES

01 78 00
CLOSEOUT SUBMITTALS

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout submittals required by the Contract Documents at the completion of the project including, but not limited to, the following:
 - 1. Project record documents, including operation and maintenance manuals.
 - 2. Warranties and bonds, including manufacturer's standard warranties on products and special warranties.
- B. Related work:
 - 1. Refer to General Conditions for terms of the Contractor's period for correction of the Work (one year from Date of Substantial Completion).
 - 2. Section 01 33 00: Submittal Procedures: Specifies procedures for submitting warranties.
 - 3. Section 01 77 00: Closeout Procedures: Specifies contract closeout procedures.
 - 4. Divisions 2 through 48 Sections for specific requirements for warranties on products and installations specified to be warranted.
 - 5. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- C. Disclaimers and limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.02 DEFINITIONS

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

1.03 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue- or black-line prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 - 1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
 - 2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
 - 3. Note related change order numbers where applicable.
 - 4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 3. Note related record drawing information and Product Data.
 4. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.
- D. Record Product Data: Maintain one (1) copy of each Product Data submittal. Note related Change Orders and markup of Record Drawings and Specifications.
1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
 2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
 3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.
- E. Record Sample submittals: Immediately prior to Substantial Completion, the Contractor shall meet with the Architect and the Owner's personnel at the Project site to determine which Samples are to be transmitted to the Owner for record purposes. Comply with the Owner's instructions regarding delivery to the Owner's Sample storage area.
- F. Miscellaneous record submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the Architect for the Owner's records.
- G. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2 IN, 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. List of subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends and holidays.
 2. Emergency instructions.
 3. Spare parts list.
 4. Copies of warranties.
 5. Wiring diagrams.
 6. Recommended "turn-around" cycles.
 7. Inspection procedures.
 8. Shop Drawings and Product Data.
 9. Fixture lamping schedule.

1.04 WARRANTY REQUIREMENTS

- A. Related damages and losses: When correcting warranted construction that has failed, remove and replace other construction that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted construction.
- B. Reinstatement of warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

- D. Owner's recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.05 WARRANTY AND BOND SUBMITTALS

- A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate for Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen (15) days of completion of that designated portion of the Work.
- B. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
- C. Forms for special warranties are included at the end of this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
 - 1. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- D. Form of submittal: At Final Completion compile two (2) copies of each required warranty and bond properly executed by the Contractor, or by the Contractor and a subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- E. Bind warranties and bonds in heavy duty, commercial quality, durable 3-ring, vinyl covered loose leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 1/2 IN x 11 IN paper.
 - 1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
 - 2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES AND BONDS", Project title or name, and name of the Contractor.
 - 3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

2.0 PRODUCTS

Not Applicable to this Section.

3.0 EXECUTION

3.01 WARRANTIES

- A. Provide warranties and bonds on products and installations as specified in other Sections of these Specifications.

END OF CLOSEOUT SUBMITTALS

05 41 00
STRUCTURAL METAL STUD FRAMING

1.0 GENERAL

1.01 SUMMARY

- A. Provide structural metal stud framing for proper support of metal soffit panels where shown on the Drawings, as needed to replace missing framing members or existing deteriorated framing members no longer adequate for their intended purpose.
- B. Related work:
 - 1. Section 07 41 13: Manufactured Soffit Panels.

1.02 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 33 00.
- B. Submit:
 - 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 2. Shop Drawings in sufficient detail to show layout, sizes, spacings, thicknesses, and types of cold-formed steel framing; fabrication, installation, fastening and anchorage, bridging, bracing, splices, accessories, and interface of the work of this Section with the work of adjacent trades.

1.03 REFERENCES

- A. Conform to AISI Specifications for the Design of Cold-Formed Steel Structural Members.
- B. AISI S200: North American Standard for Cold-Formed Steel Framing-General Provisions.
- C. ASTM A780/780M: Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dep Galvanized Coatings.
- D. ASTM C1007: Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.

1.04 SYSTEM DESCRIPTION

- A. Design requirements: Design, fabricate, and install framing system to withstand a 20 PSF uniform windload with a MAX deflection not exceeding L/360.

1.05 QUALITY ASSURANCE

- A. Manufacturer qualifications: Member in good standing of the Steel Framing Industry Association (SFIA).
- B. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with pertinent provisions of Section 01 60 00.
- B. Protect and store cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage and handling as required by AISI's Code of Standard Practice.

2.0 PRODUCTS

2.01 MANUFACTURER

- A. Design basis: Contract documents are based on cold-formed metal framing products by ClarkDietrich Building Systems, Dallas, Texas, Tel. 214-350-1716, Web www.clarkdietrich.com.
- B. Equal products of other manufacturers approved in advance by the Architect.

2.02 COLD-FORMED STEEL FRAMING MATERIALS

- A. Framing members: 18 gage MIN x 4 IN or as required, U-shaped steel track, unpunched, with straight flanges, galvanized finish, equal to ClarkDietrich model CSJ.

2.03 OTHER MATERIALS

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

2.04 FABRICATION

- A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
 - 1. Fabricate framing assemblies using jigs or templates.
 - 2. Cut framing members by sawing or shearing; do not torch cut.
 - 3. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, with screws penetrating joined members by no fewer than three exposed screw threads.
 - 4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies by means that prevent damage or permanent distortion.
- C. Tolerances: Fabricate assemblies level, plumb, and true to line to MAX allowable variation of 1/8 IN in 10 FT and as follows:
 - 1. Spacing: Space individual framing members no more than plus or minus 1/8 IN from plan location. Cumulative error shall not exceed MIN fastening requirements of sheathing or other finishing materials.
 - 2. Squareness: Fabricate each cold-formed steel framing assembly to MAX out-of-square tolerance of 1/8 IN.

3.0 EXECUTION

3.01 SURFACE CONDITIONS

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

3.02 INSTALLATION, GENERAL

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Install structural metal stud framing where required by the Drawings (where existing metal stud framing was removed during demo of existing metal soffit panels or was removed as a result of extent of rusting and/or deterioration of existing metal framing) as required to properly and adequately support all new flush metal soffit panels.
- C. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.
- D. Install cold-formed steel framing in accordance with ASTM C1007, AISI S200 and manufacturer's written instructions unless more stringent requirements are indicated.
- E. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
 - 1. Cut framing members by sawing or shearing; do not torch cut.
 - 2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners, install according to Shop Drawings, and comply with requirements for spacing, edge distances, and screw

penetration.

- F. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- G. Install temporary bracing and supports to secure framing and support loads equal to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- H. Do not bridge building expansion joints with cold-formed steel framing. Independently frame both sides of joints.

3.03 ERECTION TOLERANCES

Install cold-formed steel framing level, plumb, and true to line to MAX allowable tolerance variation of 1/8 IN in 10 FT.

3.04 REPAIRS AND PROTECTION

- A. Galvanizing repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A780/A780M and manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION

07 41 13
MANUFACTURED SOFFIT PANELS

1.0 GENERAL

1.01 SUMMARY

- A. Provide flush profile, concealed fastener, lap seam architectural metal soffit panels and related metal trim where shown on the Drawings, as specified herein and as needed for a complete and proper installation including, but not necessarily limited to:
 - 1. Flush seam soffit panels.
 - 2. Metal flashing and trim.
 - 3. Sealants, caulking.
- B. Related work:
 - 1. Section 05 41 00: Structural Metal Stud Framing: Repair and/or replacement of metal framing supporting metal soffit panels.

1.02 REFERENCES

- A. AAMA 621: Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum coated Steel Substrates.
- B. AAMA 809.2: Voluntary Specification for Non-Drying Sealants.
- C. ASCE 7: Minimum Design Loads for Buildings and Other Structures.
- D. ASTM A755: Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil Coating Process for Exterior Exposed Building Products.
- E. ASTM A792/A792M: Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- F. ASTM C920: Specification for Elastomeric Joint Sealants.
- G. ASTM D2244: Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- H. ASTM D4214: Test Methods for Evaluation Degree of Chalking of Exterior Paint Films.

1.03 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 33 00.
- B. Submit:
 - 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 2. Shop Drawings in sufficient detail to show fabrication and installation layout of metal panels, details of edge conditions, joints, corners, panel profiles, attachment system, trim, flashing, closures, details of weatherproofing at all edges and penetrations, and interface of the work of this Section with the work of adjacent trades. Make distinctions between factory and field assembled work.
 - 3. Samples for initial selection: For each type of metal panel indicated with factory-applied color finishes available from the proposed manufacturers in the specified products.
 - a. Include similar samples of trim and accessories involving color selection.
 - 4. Samples for verification: For each type of exposed finish required, prepared on samples of size indicated below.
 - a. Metal panels: 12 IN long by actual panel width. Include clips, fasteners, closures, and other metal panel accessories.
 - 5. Calculations:
 - a. Include calculations with registered engineer seal, verifying soffit panel and attachment method resists wind pressures imposed on it pursuant to applicable building codes.

1.04 QUALITY ASSURANCE

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

- B. In addition to complying with requirements of governmental agencies having jurisdiction, comply with pertinent recommendations contained in SMACNA "Architectural Sheet Metal Manual".
- C. Manufacturer's qualifications:
 - 1. Manufacturer shall have MIN of 5 YRS experience in manufacturing panels of this nature.
- D. Installer's qualifications:
 - 1. Panel installer shall have MIN of 5 YRS experience in installation of panels of this nature.
- E. Factory fabricated components shall be crated in cartons marked with the manufacturer's name or trademark and a UL 90 label where applicable.
- F. Field measurements shall be taken prior to fabrication to assure symmetry.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Comply with pertinent provisions of Section 01 60 00.
- B. Protect products of metal panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage. Protect panels and trim bundles during shipping.
- C. Deliver, unload, store, and erect metal panels and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.
- D. Store in accordance with manufacturer's written instruction. Provide wood collars for stacking and handling in the field.
- E. Protect all materials and installation from damage by other trades.

1.06 FIELD CONDITIONS

- A. Weather limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturer's written instructions and warranty requirements.

1.07 COORDINATION

- A. Coordinate metal panel installation with rain drainage work, light fixture installation, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.08 WARRANTY

- A. Special manufacturer's warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace metal panel assemblies that fail in materials and/or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including rupturing or perforating.
 - b. Deterioration of metals and other materials beyond normal weathering.
 - 2. Warranty Period: 2 YRS from date of Substantial Completion.
- B. Special panel finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that evidence deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed panel finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading in excess of 5 Hunter units per ASTM D2244.
 - b. Chalking in excess of No. 8 rating per ASTM D4214.
 - c. Failure of adhesion, peeling, checking or cracking.
 - 2. Finish Warranty Period: 40 YRS from date of Substantial Completion.

2.0 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. General: Provide metal panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.
- B. Structural performance: Provide metal panel assemblies capable of withstanding the

effects of indicated loads and stresses within limits and under conditions indicated, as determined by ASTM E1592.

1. Wind loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on the drawings or standard for the location.
 - a. Wind negative pressure: Certify capacity of metal panels by actual testing of proposed assembly.
 2. Deflection limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of 1/120 of the span with no evidence of failure.
 3. Seismic performance: Comply with ASCE 7 Section 9 Earthquake Loads.
- C. Thermal movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

2.02 ARCHITECTURAL FORMED METAL SOFFIT PANELS

- A. Soffit panels: Provide a complete metal soffit system where shown on the Drawings and with the following attributes:
1. Panel profile: Flush panel.
 2. Nominal thickness: 24 gage galvanized steel with smooth surface.
 3. Exterior finish: Fluoropolymer two-coat system (Signature 300/Kynar 500).
 4. Panel width: 12 IN.
 5. Panel thickness: 1 IN.
 6. Sheet metal flashing & trim: Shall be fabricated from same material and finish a panels
 7. Panel attachment: Concealed fastening system.
 8. Color: As selected by the Architect from the approved manufacturer's standard color chart with the intention of matching the existing second floor soffit panels to remain.
- B. Acceptable products:
1. "Artisan Series L12" as manufactured by Metal Building Components, Inc. (MBCI), Houston, Texas, Tel. 877-713-6224.
 2. Equal products of other manufacturers approved in advance by the Architect.

2.03 OTHER MATERIALS

- A. General: Provide complete metal panel assemblies incorporating trim and miscellaneous flashings. Provide required fasteners, closure strips, and sealants as indicated in manufacturer's written instructions.
- B. Fasteners: Self-tapping screws and other acceptable fasteners recommended by metal panel manufacturer. Where exposed fasteners cannot be avoided, supply corrosion-resistant fasteners with heads matching color of metal panels by means of factory-applied coating, with weathertight resilient washers.
- C. Flashing and trim: Match material, thickness and finish of metal panels. Locations include, but are not limited to, perimeter of soffit where metal panels abut steel lintel angles and around steel tube columns.
- D. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

2.04 FABRICATION

- A. General: Provide factory fabricated and finished metal panels, trims and accessories meeting the performance requirements, indicated profiles, and structural requirements.
- B. Sheet metal flashing and trim: Fabricate flashing and trim to comply with manufacturer's written instructions, approved Shop Drawings, and project Drawings.

2.05 FINISHES

- A. General: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
- B. Fluoropolymer two-coat system: 0.2-0.3 MIL primer with 0.7-0.8 MIL 70 percent PVDF

fluoropolymer color coat, ASMA621, meeting solar reflectance index requirements.

3.0 EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Verify that installation may be made in accordance with approved Shop Drawings and manufacturer's instructions.
- C. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.
- D. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
- E. Correct out-of-tolerance work and other deficient conditions prior to proceeding with metal panel installation.

3.02 PREPARATION

- A. Miscellaneous supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.03 METAL PANEL INSTALLATION

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Concealed-fastener formed metal soffit panels: Install metal panel system in accordance with manufacturer's written instructions, approved Shop Drawings, project Drawings, and referenced publications. Install metal panels in orientation, sizes, and locations indicated. Anchor panels and other components securely in place. Provide for thermal and structural movement.
- C. Fasten metal panels to supports with fasteners at each location indicated on approved shop drawings, at spacing and with fasteners recommended by manufacturer. Fasten panel to support structure through leading panel flange. Fit back flange of subsequent panel into secured flange of previous panel.
 - 1. Cut panels in field where required using manufacturer's recommended methods.
 - 2. Dissimilar materials: Where elements of metal panel system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by metal panel manufacturer.
- D. Attach panel flashing trim pieces to supports using recommended fasteners.

3.04 ACCESSORY INSTALLATION

- A. General: Install metal panel accessories with positive anchorage to building and weather tight mounting; provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete metal panel assembly, including trim, flashings, sealants, closure strips, and similar items.
 - 2. Comply with details of assemblies utilized to establish compliance with performance requirements and manufacturer's written installation instructions.
 - 3. Set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently weather resistant.

3.05 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
- B. Replace metal panels and accessories that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures to the

satisfaction of the Architect.

- C. Leave panels clean and free from fringes, marks, grease and stains.
- D. Dispose of excess materials and remove debris from project site.

END OF SECTION

**10 14 00
SIGNAGE**

1.0 GENERAL

1.01 SUMMARY

- A. Provide identifying devices where shown on the Drawings, as specified herein and as needed for a complete and proper installation including, but not necessarily limited to:
1. Tenant Identification signage-exterior soffit mounted.

1.02 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 33 00.
- B. Submit:
1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 2. Shop Drawings indicating fabrication method, dimensions, finish, layout, and details of installation and anchorage sufficient to enable proper interface of the work of this Section with the work of other Sections.
 3. Color charts/samples showing colors available from the proposed manufacturer in the specified products.

1.03 QUALITY ASSURANCE

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

1.04 DELIVERY, STORAGE AND HANDLING

- A. Comply with pertinent provisions of Section 01 60 00.

2.0 PRODUCTS

2.01 TENANT IDENTIFICATION SIGNAGE

- A. Provide tenant identification soffit mounted signs with the following attributes.
1. Substrate material: 1/2 IN acrylic.
 2. Size: 24 IN wide x 10 IN high (9 IN MIN height visible below mounting bracket).
 3. Type style:
 - a. At suite numbers: 3-1/2 IN standard bold condensed, upper case, 0.03 IN laser cut applied graphics.
 - b. At suite names: 1-3/4 IN standard bold condensed, upper case, 0.03 IN laser cut applied graphics.
 4. Braille: None (soffit mounted, out of reach).
 5. Border: None.
 6. Mounting: Aluminum t-shaped bracket for mounting sign to metal soffit panels.
 7. Color: Background and text colors as selected by the Architect from standard colors of the approved manufacturer.
 8. Text: Furnish 10 signs, each with different suite numbers and names to be determined after bidding and prior to submittals, with number and name graphics on BOTH faces of each sign.
- B. Acceptable products:
1. 'Raster Acrylic Series' as manufactured by Best Sign Systems, Montrose, CO, Tel. 800-235-2378, Web www.bestsigns.com.
 2. Equal products of other manufacturers approved in advance by the Architect.

3.0 EXECUTION

3.01 SURFACE CONDITIONS

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

3.02 INSTALLATION

- A. Install the work of this Section in strict accordance with the original design, the approved Shop Drawings, and the manufacturer's recommended installation procedures as approved by the Architect, anchoring all components firmly into position for long life under hard use.
- B. Install signage level and plumb, with sign surfaces free from distortion or other defects in appearance.
 - 1. Mount tenant identification signage to metal soffit panels where shown on the Drawings and as directed by Owner.

3.03 CLEANING AND PROTECTION

- A. After installation clean soiled sign surfaces according to the manufacturer's instructions. Protect units from damage until final acceptance of the Project.

END OF SECTION

22 05 00
COMMON WORK RESULTS FOR PLUMBING

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes the following basic mechanical materials and methods to complement other Division 22 and 23 Sections.
 - 1. Piping materials and installation instructions common to most piping systems.
 - 2. Escutcheons
 - 3. Dielectric fittings.
 - 4. Flexible connectors.
 - 5. Equipment nameplate data requirements.
 - 6. Labeling and identifying mechanical systems
 - 7. Field-fabricated metal and wood equipment supports.
 - 8. Installation requirements common to equipment specification sections.
 - 9. Mechanical demolition.
 - 10. Cutting and patching.
 - 11. Touchup painting and finishing.
- B. Pipe and pipe fitting materials are specified in Division 22 piping system Sections.

1.02 DEFINITIONS

- A. Finished spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawl spaces, and tunnels.
- B. Exposed, interior installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, exterior installations: Exposed to view outdoors, or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- D. Concealed, interior installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.
- E. Concealed, exterior installations: Concealed from view and protected from weather conditions and physical contact by building occupants, but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.
- F. The following are industry abbreviations for plastic materials:
 - 1. CPVC: Chlorinated polyvinyl chloride plastic.
 - 2. NP: Nylon plastic.
 - 3. PE: Polyethylene plastic.
 - 4. PVC: Polyvinyl chloride plastic.
- G. The following are industry abbreviations for rubber materials:
 - 1. CR: Chlorosulfonated polyethylene synthetic rubber.
 - 2. EPDM: Ethylene propylene diene terpolymer rubber.

1.03 SUBMITTALS

- A. Welding certificates.
- B. Certificates of Compliance for pressure vessels.
- C. Shop Drawings or Cut Sheets showing construction size, arrangement, operating clearances, performance characteristics and capacity of materials and equipment. Each item of equipment proposed shall be a standard catalog product of the approved manufacturer.
- D. Samples, drawings specifications, catalogs, etc., submitted for approval shall be properly labeled indicating specific service for which material or equipment is to be used.
- E. Submit access door locations to the Architect for approval. Equipment requiring access door shall not be installed prior to approval of access door locations.

- F. Coordination Drawings:
1. Provide coordination drawings in accordance with Division 1 Section "Project Management and Coordination". Detail major elements, components, and systems of mechanical equipment and materials in relationship with other systems, installations, and building components (i.e. electrical, plumbing, structural and architectural work). Shop space requirements for installation and access. Indicate if sequence and coordination of installation are important to efficient flow of the Work. Include the following:
 - a. Planned piping layout, including valve and specialty locations.
 - b. Clearances for installation and maintaining insulation.
 - c. Clearances for servicing and maintaining equipment, accessories, and specialties, including space for disassembly required for periodic maintenance.
 - d. Equipment and accessory service connections and support details.
 - e. Fire-rated wall and floor penetrations.
 - f. Sizes and location of required concrete pads and bases.
 - g. Scheduling, sequencing, movement and positioning of large equipment into building during construction.
 - h. Floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.
 - i. See Division 22, Section "Piping" for piping installation drawing requirements.
 - j. Reflected ceiling plans:
 - 1) Ceiling suspension assembly members.
 - 2) Other systems installed in same space as ducts.
 - 3) Ceiling- and wall-mounting access doors and panels required to provide access to dampers and other operating devices.
 - 4) Ceiling-mounting items, including lighting fixtures, diffusers, grilles, speakers, access panels, and special molding.
 - 5) Refer to architectural ceiling plans for additional requirements.

1.04 QUALITY ASSURANCE

- A. Comply with ASME A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.
- B. Equipment Selection: Equipment of higher electrical characteristics, physical dimensions, capacities, and ratings may be furnished provided such proposed equipment is approved in writing and connecting mechanical and electrical services, circuit breakers, conduit, motors, bases, and equipment spaces are increased. Additional costs shall be approved in advance by appropriate Contract Modification for these increases. If minimum energy ratings or efficiencies of equipment are specified, equipment must meet design and commissioning requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and prevent entrance of dirt, debris, and moisture.
- B. Protect stored pipes and tubes from moisture and dirt. Elevate above grade. Do not exceed structural capacity of floor, if stored inside.
- C. Protect flanges, fittings, and piping specialties from moisture and dirt.

1.06 SEQUENCING AND SCHEDULING

- A. Coordinate mechanical equipment installation with other building components.
- B. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction to allow for mechanical installations.
- C. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components, as they are constructed.

- D. Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work. Coordinate installation of large equipment requiring positioning before closing in building.
- E. Coordinate connection of mechanical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies.
- F. Coordinate requirements for access panels and doors if mechanical items requiring access are concealed behind finished surfaces. Access panels and doors are specified in Division 8 Section "Access Doors."
- G. Coordinate installation of identifying devices after completing covering and painting, if devices are applied to surfaces. Install identifying devices before installing acoustical ceilings and similar concealment.

2.0 PRODUCTS

2.01 MANUFACTURERS:

- A. Available manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

2.02 PIPE AND PIPE FITTINGS:

- A. Refer to individual Division 22 piping Sections for pipe and fitting materials and joining methods.
- B. Pipe threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

2.03 JOINING MATERIALS:

- A. Solder filler metals: ASTM B32.
 - 1. Alloy Sn95 or Alloy Sn94: Approximately 95% tin and 5% silver, with 0.10% lead content.
 - 2. Alloy E: Approximately 95% tin and 5% copper, with 0.10% maximum lead content.
 - 3. Alloy HA: Tin-antimony-silver-copper zinc, with 0.10% maximum lead content.
 - 4. Alloy HB: Tin-antimony-silver-copper nickel, with 0.10% maximum lead content.
 - 5. Alloy Sb5: 95% tin and 5% antimony, with 0.20% maximum lead content.
- B. Solvent cements: Manufacturer's standard solvent cements for the following:
 - 1. PVC piping: ASTM D2564. Include primer according to ASTM F656.
- C. Couplings: Iron-body sleeve assembly, fabricated to match OD of plain-end, pressure pipes.
 - 1. Sleeve: ASTM A126, Class B, gray iron.
 - 2. Followers: Malleable iron or ASTM A536 ductile iron.
 - 3. Gaskets: Rubber.
 - 4. Bolts and Nuts: AWWA C111.
 - 5. Finish: Enamel paint.

2.04 DIELECTRIC FITTINGS:

- A. General: Assembly or fitting with insulating material isolating joined dissimilar metals, to prevent galvanic action and stop corrosion.
- B. Description: Combination of copper alloy and ferrous; threaded, solder, plain, and weld-neck end types and matching piping system materials.
- C. Insulating material: Suitable for system fluid, pressure, and temperature.
- D. Dielectric unions: Factory-fabricated, union assembly, for 250 PSIG MIN working pressure at 180°F.
- E. Dielectric flanges: Factory-fabricated, companion-flange assembly, for 150 PSIG MIN working pressure as required to suit system pressures.
- F. Dielectric flange insulation kits: Field-assembled, companion-flange assembly, full-face or ring type. Components include neoprene or phenolic gasket, phenolic or polyethylene bolt sleeves, phenolic washers, and steel backing washers.

1. Provide separate companion flanges and steel bolts and nuts for 150 PSIG MIN working pressure as required to suit system pressures.
- G. Dielectric couplings: Galvanized-steel coupling with inert and noncorrosive, thermoplastic lining; threaded ends; and 300 PSIG MIN working pressure at 225°F.
- 2.05 IDENTIFYING DEVICES AND LABELS:
- A. General: Manufacturer's standard products of categories and types required for each application as referenced in other Division 22 Sections. If more than one type is specified for application, selection is Installer's option, but provide one selection for each product category.
 - B. Equipment nameplates: Metal nameplate with operational data engraved or stamped; permanently fastened to equipment.
 1. Data: Manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and similar essential data.
 2. Location: Accessible and visible location.
 - C. Stencils: Standard stencils, prepared for required applications with letter sizes complying with recommendations of ASME A13.1 for piping and similar applications, but not less than 1-1/4 IN high letters for ductwork and not less than 3/4 IN high letters for access door signs and similar operational instructions.
 1. Stencil paint: Standard exterior-type stenciling enamel; black, unless otherwise indicated; either brushing grade or pressurized spray-can form and grade.
 2. Identification paint: Standard identification enamel of colors indicated or, if not otherwise indicated for piping systems, comply with ASME A13.1 for colors.
 - D. Engraved plastic laminate signs: ASTM D709, Type I, cellulose, paper-base, phenolic-resin-laminate engraving stock; Grade ES-2, black surface, black phenolic core, with white melamine subcore, unless otherwise indicated.
 1. Fabricate in sizes required for message.
 2. Engraved with engraver's standard letter style, of sizes and with wording to match equipment identification.
 3. Punch for mechanical fastening.
 4. Thickness: 1/8 IN, unless otherwise indicated.
 5. Fasteners: Self-tapping stainless-steel screws or contact-type permanent adhesive.
 - E. Plastic equipment markers: Color-coded, laminated plastic. Comply with the following color code:
 1. Green: Cooling equipment and components.
 2. Yellow: Heating equipment and components.
 3. Yellow/Green: Combination cooling and heating equipment and components.
 4. Brown: Energy reclamation equipment and components.
 5. Blue: Equipment and components that do not meet any criteria above.
 6. For hazardous equipment, use colors and designs recommended by ASME A13.1.
 7. Nomenclature: Include the following, matching terminology on schedules as closely as possible:
 - a. Name and plan number.
 - b. Equipment service.
 - c. Design capacity.
 - d. Other design parameters such as pressure drop, entering and leaving conditions, and rpm.
 8. Size: Approximate 2-1/2 IN x 4 IN for control devices, dampers, and valves; and 4-1/2 IN x 6 IN for equipment.
 - F. Lettering and graphics: Coordinate names, abbreviations, and other designations used in mechanical identification, with corresponding designations indicated. Use numbers, lettering, and wording indicated for proper identification and operation/maintenance of mechanical systems and equipment.

1. Multiple systems: If multiple systems of same generic name are indicated, provide identification that indicates individual system number and service such as "Boiler No. 3," "Air Supply No. 1H," or "Standpipe F12."

3.0 EXECUTION

3.01 PIPING SYSTEMS-COMMON REQUIREMENTS:

- A. General locations and arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated, unless deviations to layout are approved on Coordination Drawings.
- B. Install components with pressure rating equal to or greater than system operating pressure.
- C. Install piping free of sags and bends.
- D. Install piping to allow application of insulation plus 1 IN clearance around insulation.
- E. Locate groups of pipes parallel to each other, spaced to permit valve servicing.
- F. Install couplings according to manufacturer's written instructions.
- G. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.
- H. Piping joint construction: Join pipe and fittings as follows and as specifically required in individual piping specification Sections:
 1. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
 2. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
 3. Soldered Joints: Construct joints according to AWS's "Soldering Manual," Chapter "The Soldering of Pipe and Tube"; or CDA's "Copper Tube Handbook."
 4. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - a. Note internal length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
 - b. Apply appropriate tape or thread compound to external pipe threads, unless dry seal threading is specified.
 - c. Align threads at point of assembly.
 - d. Tighten joint with wrench. Apply wrench to valve end into which pipe is being threaded.
 - e. Damaged threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- I. Piping connections: Make connections according to the following, unless otherwise indicated:
 1. Install unions, in piping 2 IN NPS and smaller, adjacent to each valve and at final connection to each piece of equipment with 2 IN NPS or smaller threaded pipe connection.
 2. Install flanges, in piping 2-1/2 IN NPS and larger, adjacent to flanged valves and at final connection to each piece of equipment with flanged pipe connection.
 3. Dry piping systems: Install dielectric unions and flanges to connect piping materials of dissimilar metals.
 4. Wet piping systems: Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals.

3.02 EQUIPMENT INSTALLATION-COMMON REQUIREMENTS:

- A. Install equipment to provide maximum possible headroom, if mounting heights are not indicated.

- B. Install equipment according to approved submittal data. Portions of the Work are shown only in diagrammatic form. Refer conflicts to Architect.
- C. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
- D. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
- E. Install equipment giving right of way to piping installed at required slope.
- F. Install flexible connectors on equipment side of shutoff valves, horizontally and parallel to equipment shafts if possible.

3.03 LABELING AND IDENTIFYING:

- A. Piping systems: Install pipe markers on each system. Include arrows showing normal direction of flow.
 - 1. Stenciled markers: According to ASME A13.1.
 - 2. Plastic markers, with application systems. Install on insulation segment if required for hot, uninsulated piping.
 - 3. Locate pipe markers as follows if piping is exposed in finished spaces, machine rooms, and accessible maintenance spaces, such as shafts, tunnels, plenums, and exterior non-concealed locations:
 - a. Near each valve and control device.
 - b. Near each branch, excluding short takeoffs for fixtures and terminal units. Mark each pipe at branch, if flow pattern is not obvious.
 - c. Near locations if pipes pass through walls, floors, ceilings, or enter non-accessible enclosures.
 - d. At access doors, manholes, and similar access points that permit view of concealed piping.
 - e. Near major equipment items and other points of origination and termination.
 - f. Spaced at MAX 50 FT intervals along each run. Reduce intervals to 25 FT in congested areas of piping and equipment.
 - g. On piping above removable acoustical ceilings, except omit intermediately spaced markers.
- B. Equipment: Install engraved plastic laminate sign or equipment marker on or near each major item of mechanical equipment.
 - 1. Lettering size: MIN 1/4 IN high lettering for name of unit if viewing distance is less than 24 IN, 1/2 IN high lettering for distances up to 72 IN, and proportionately larger lettering for greater distances. Provide secondary lettering two-thirds to three-fourths of size of principal lettering.
 - 2. Text of signs: Provide name of identified unit. Include text to distinguish between multiple units, inform user of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.
- C. Adjusting: Relocate identifying devices as necessary for unobstructed view in finished construction.

3.04 CONCRETE BASES:

- A. Construct concrete bases of dimensions indicated, but not less than 4 IN larger in both directions than supported unit. Follow supported equipment manufacturer's setting templates for anchor bolt and tie locations. Use 3000 PSIG, 28 day compressive strength concrete and reinforcement as specified in Division 3 Section "Cast-in-Place Concrete."

3.05 DEMOLITION:

- A. Disconnect, demolish, and remove Work specified in Division 22 Sections.
- B. If pipe, ductwork, insulation, or equipment to remain is damaged or disturbed, remove damaged portions and install new products of equal capacity and quality.
- C. Accessible work: Remove indicated exposed pipe and ductwork in its entirety.

- D. Work abandoned in place: Cut and remove underground pipe MIN 2 IN beyond face of adjacent construction. Cap and patch surface to match existing finish.
- E. Removal: Remove indicated equipment from Project site.
- F. Temporary disconnection: Remove, store, clean, reinstall, reconnect, and make operational equipment indicated for relocation.

3.06 CUTTING AND PATCHING:

- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces necessary for mechanical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair cut surfaces to match adjacent surfaces.

END OF SECTION

22 14 00
FACILITY STORM DRAINAGE

1.0 GENERAL

1.01 SUMMARY

- A. Section includes:
1. Storm water piping buried within 5 FT of building.
 2. Storm water piping above grade.
 3. Unions and flanges.
 4. Valves
 5. Pipe hangers and supports.
 6. Roof drains.
 7. Parapet drains.
 8. Canopy and cornice drains.
 9. Special purpose downspout covers.
 10. Downspout nozzles.
 11. Area drains.
 12. Cleanouts
 13. Bedding and cover materials.
 14. Section 31 20 00 - Fill: Requirements for backfill to be placed by this section.

1.02 REFERENCES

- A. American Society of Mechanical Engineers:
1. ASME A112.21.1M - Floor Drains.
 2. ASME A112.21.2M - Roof Drains.
 3. ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings (DWV).
 4. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV.
 5. ASME B31.9 - Building Services Piping.
- B. ASTM International:
1. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
 2. ASTM B32 - Standard Specification for Solder Metal.
 3. ASTM B306 - Standard Specification for Copper Drainage Tube (DWV).
 4. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
 5. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 6. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
 7. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
 8. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
 9. ASTM C700 - Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated.
 10. ASTM D1785 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
 11. ASTM D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
 12. ASTM D2464 - Standard Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
 13. ASTM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
 14. ASTM D2665 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.
 15. ASTM D2680 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping.

16. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 17. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
 18. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
 19. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 20. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
 21. ASTM F679 - Standard Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
 22. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers.
- C. Cast Iron Soil Pipe Institute:
1. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
 2. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
- D. Manufacturers Standardization Society of the Valve and Fittings Industry:
1. MSS SP 58 - Pipe Hangers and Supports - Materials, Design and Manufacturer.
 2. MSS SP 69 - Pipe Hangers and Supports - Selection and Application.
 3. MSS SP 70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
 4. MSS SP 71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
 5. MSS SP 80 - Bronze Gate, Globe, Angle and Check Valves.
 6. MSS SP 89 - Pipe Hangers and Supports - Fabrication and Installation Practices.
 7. MSS SP 110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

1.03 SUBMITTALS

- A. Section 01 33 00-Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes for sump-pumps, catch basins and manholes.
- C. Product Data:
 1. Piping: Submit data on pipe materials, fittings, and accessories. Submit manufacturers catalog information.
 2. Valves: Submit manufacturers catalog information with valve data and ratings for each service.
 3. Hangers and supports: Submit manufacturers catalog information including load capacity.
 4. Storm drainage specialties: Submit manufacturers catalog information, component sizes, rough-in requirements, service sizes, and finishes.
- D. Manufacturer's installation instructions: Submit installation instructions for material and equipment.
- E. Manufacturer's certificate: Certify products meet or exceed specified requirements.

1.04 CLOSEOUT SUBMITTALS

- A. Section 01 70 00-Execution and Closeout Requirements: Closeout procedures.
- B. Project record documents: Record actual locations of equipment and clean-outs.

1.05 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with MIN 3 YRS experience.
- B. Installer: Company specializing in performing Work of this section with MIN 3 YRS experience.

- 1.06 DELIVERY, STORAGE, AND HANDLING
 - A. Section 01 60 00-Product Requirements: Product storage and handling requirements.
 - B. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the Work, and isolating parts of completed system.
- 1.07 ENVIRONMENTAL REQUIREMENTS
 - A. Section 01 60 00-Product Requirements.
 - B. Do not install underground piping when bedding is wet or frozen.
- 1.08 FIELD MEASUREMENTS
 - A. Verify field measurements prior to fabrication.
- 1.09 WARRANTY
 - A. Section 01 70 00-Execution and Closeout Requirements: Product warranties and product bonds.
 - B. Furnish 1 YR manufacturer's warranty for all work.
- 2.0 PRODUCTS
 - 2.01 STORM WATER PIPING, BURIED WITHIN 5 FT OF BUILDING
 - A. PVC Pipe: ASTM D2729, polyvinyl chloride (PVC) material, bell and spigot solvent sealed ends.
 - 1. Fittings: PVC, ASTM D2729.
 - 2. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement.
 - 2.02 STORM WATER PIPING, ABOVE GRADE
 - A. PVC Pipe: ASTM D2665 or ASTM D3034 SDR 26, polyvinyl chloride (PVC) material.
 - 1. Fittings: ASTM D2665 or ASTM D3034, PVC.
 - 2. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement.
 - 2.03 DRAIN TILE, BELOW GRADE
 - A. Single wall high density corrugated polyethylene with filter sock. ADS single wall heavy duty pipe with ADS filter sock.
 - 1. Fittings: STM F667.
 - 2. Joints: ASTM F667.
 - 3. Sock: Filter sock shall meet the requirements of ASTM D6707.
 - 2.04 UNIONS AND FLANGES
 - A. Flanges for Pipe 2-1/2 IN and Larger:
 - 1. Copper piping: Class 150, slip-on bronze flanges.
 - 2. PVC piping: PVC flanges.
 - 3. CPVC piping: CPVC flanges.
 - 4. Gaskets: 1/16 IN thick preformed neoprene gaskets.
 - B. PVC pipe materials: For connections to equipment and valves with threaded connections, furnish solvent-weld socket to screwed joint adapters and unions, or ASTM D2464, Schedule 80, threaded, PVC pipe.
 - 2.05 PIPE HANGERS AND SUPPORTS
 - A. Manufacturers:
 - 1. Carpenter & Paterson Inc. Model.
 - 2. Creative Systems Inc. Model.
 - 3. Flex-Weld, Inc. Model.
 - 4. Glope Pipe Hanger Products Inc. Model.
 - 5. Michigan Hanger Co. Model.
 - 6. Superior Valve Co. Model.
 - 7. Substitutions.
 - B. Drain, waste, and vent: Conform to ASME B31.9 ASTM F708.
 - C. Hangers for pipe sizes 1/2 IN to 1-1/2 IN: Carbon steel, adjustable swivel, split ring.

- D. Hangers for pipe sizes 2 IN and Larger: Carbon steel, adjustable, clevis.
- E. Multiple or trapeze hangers: Steel channels with welded spacers and hanger rods.
- F. Wall support for pipe sizes 3 IN and Smaller: Cast iron hook.
- G. Wall support for pipe sizes 3 IN and Larger: Welded steel bracket and wrought steel clamp.
- H. Vertical support: Steel riser clamp.
- I. Floor support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

2.06 ROOF DRAINS

- A. Manufacturers:
 - 1. Zurn.
 - 2. JR Smith.
 - 3. Sioux Chief.
- B. Roof drain (RD-1):
 - 1. Assembly: ASME A112.21.2M.
 - 2. Body: Lacquered cast iron with sump.
 - 3. Strainer: Removable cast metal cast iron dome.
 - 4. Accessories: Coordinate with roofing type, refer to Section:
 - a. Membrane flange and membrane clamp with integral gravel stop.
 - b. Adjustable under deck clamp.
 - c. Roof sump receiver.
 - d. Waterproofing flange.
 - e. Controlled flow weir.
 - f. Leveling frame.
 - g. Adjustable extension sleeve for roof insulation.
 - h. Perforated or slotted ballast guard extension for inverted roof.
 - i. Perforated stainless steel ballast guard extension.
- C. Roof drain (RD-2):
 - 1. Assembly: ASME A112.21.2M.
 - 2. Body: Lacquered cast iron with sump.
 - 3. Strainer: Removable cast metal cast iron dome.
 - 4. Pipe extended to 2 IN above flood elevation.
 - 5. Accessories: Coordinate with roofing type, refer to Section:
 - a. Membrane flange and membrane clamp with integral gravel stop.
 - b. Adjustable under deck clamp.
 - c. Roof sump receiver.
 - d. Waterproofing flange.
 - e. Controlled flow weir.
 - f. Leveling frame.
 - g. Adjustable extension sleeve for roof insulation.
 - h. Perforated or slotted ballast guard extension for inverted roof.
 - i. Perforated stainless steel ballast guard extension.
- D. Lacquered cast iron body with flashing clamp collar and epoxy coated grate.

2.07 DOWNSPOUT NOZZLES

- A. Manufacturers:
 - 1. JR Smith.
 - 2. Zurn Model.
- B. Product description: Cast bronze body and wall flange round with straight bottom section.

2.08 CLEANOUTS

- A. Exterior surfaced areas (CO-1): Round cast nickel bronze access frame and non-skid cover.
- B. Exterior unsurfaced areas (CO-2): Line type with lacquered cast iron body and round epoxy coated cover with gasket.

- C. Interior finished floor areas (CO-3): Lacquered cast iron body with anchor flange, reversible clamping collar, threaded top assembly, and round scored cover with gasket in service areas and round depressed cover with gasket to accept floor finish in finished floor areas.
- D. Interior finished wall areas (CO-4): Line type with lacquered cast iron body and round epoxy coated cover with gasket, and round stainless steel access cover secured with machine screw.
- E. Interior unfinished accessible areas (CO-5): Caulked or threaded type. Provide bolted stack cleanouts on vertical rainwater leaders.

3.0 EXECUTION

3.01 EXAMINATION

- A. Section 01 30 00-Administrative Requirements: Coordination and project conditions.
- B. Verify excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.
- D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

3.03 INSTALLATION-HANGERS AND SUPPORTS

- A. Inserts:
 1. Provide inserts for placement in concrete forms.
 2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
 3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe 4 IN and larger.
 4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
 5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.
- B. Pipe hangers and supports:
 1. Install in accordance with ASME B31.9 ASTM F708 and MSS SP 89.
 2. Support horizontal piping as scheduled.
 3. Install hangers to provide minimum 1/2 IN space between finished covering and adjacent work.
 4. Place hangers within 12 IN of each horizontal elbow.
 5. Use hangers with 1-1/2 IN MIN vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
 6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
 7. Where installing several pipes in parallel and at same elevation, provide multiple pipe hangers or trapeze hangers.
 8. Provide copper plated hangers and supports for copper piping.
 9. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.04 INSTALLATION-BURIED PIPING SYSTEMS

- A. Verify connection to storm sewer size, location, and invert are as indicated on Drawings.
- B. Establish elevations of buried piping with not less than 5 FT of cover.
- C. Establish MIN separation of 10 FT from other services piping in accordance with applicable code.
- D. Excavate pipe trench in accordance with Section.
- E. Install pipe to elevation as indicated on Drawings.

- F. Place bedding material at trench bottom to provide uniform bedding for piping, level bedding materials in one continuous layer not exceeding 4 IN depth.
- G. Install pipe on prepared bedding.
- H. Route pipe in straight line.
- I. Install plastic ribbon tape continuous over top of pipe. Above pipeline; coordinate with Section. Refer to Section. Install trace wire continuous over top of pipe. Above pipeline; coordinate with Section 31 20 00. Refer to Section.
- J. Pipe Cover and Backfilling:
 1. Backfill trench in accordance with Section 31 20 00.
 2. Maintain optimum moisture content of fill material to attain required compaction density.
 3. After hydrostatic test, evenly backfill entire trench width by hand placing backfill material and hand tamping in 4 IN compacted layers to 6 IN MIN cover over top of jacket. Compact to 95% MAX density.
 4. Evenly and continuously backfill remaining trench depth in uniform layers with backfill material.
 5. Do not use wheeled or tracked vehicles for tamping.
- K. Install Work in accordance with

3.05 INSTALLATION-ABOVE GROUND PIPING

- A. Establish invert elevations, slopes for drainage to 1/4 inch per foot minimum. Maintain gradients.
- B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Provide clearance at cleanout for snaking drainage system.
- C. Encase exterior cleanouts in concrete flush with grade.
- D. Install floor cleanouts at elevation to accommodate finished floor.
- E. Install non-conducting dielectric connections wherever jointing dissimilar metals.
- F. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- G. Install piping to maintain headroom. Group piping to conserve space.
- H. Group piping whenever practical at common elevations.
- I. Support cast iron drainage piping at every joint.
- J. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- K. Provide clearance in hangers and from structure and other equipment for installation of insulation.
- L. Provide access where valves and fittings are not accessible.
- M. Install piping penetrating roofed areas to maintain integrity of roof assembly.
- N. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- O. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to Section 09 90 00.
- P. Install bell and spigot pipe with bell end upstream.
- Q. Sleeve pipes passing through partitions, walls and floors. Refer to Section 22 05 29.
- R. Install firestopping at fire rated construction perimeters and openings containing penetrating sleeves and piping. Refer to Section.

3.06 FIELD QUALITY CONTROL

- A. Section 01 70 00-Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Test storm drainage piping system in accordance with applicable code local authority having jurisdiction.

END OF SECTION

26 05 00
COMMON WORK RESULTS FOR ELECTRICAL

1.0 GENERAL

1.01 SUMMARY

- A. This Section includes the following:
 - 1. Supporting devices for electrical components.
 - 2. Electrical identification.
 - 3. Electricity-metering components.
 - 4. Concrete equipment bases.
 - 5. Electrical demolition.
 - 6. Cutting and patching for electrical construction.
 - 7. Touchup painting.

1.02 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.
- C. IMC: Intermediate metal conduit.
- D. LFMC: Liquidtight flexible metal conduit.
- E. RNC: Rigid nonmetallic conduit.
- F. RGSC: Rigid, heavywall, galvanized steel conduct.

1.03 SUBMITTALS

- A. Product Data: For electricity-metering equipment.
- B. Shop Drawings: Dimensioned plans and sections or elevation layouts of electricity-metering equipment.
- C. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

1.04 QUALITY ASSURANCE

- A. Electrical components, devices, and accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

1.05 COORDINATION

- A. Coordinate chases, slots, inserts, sleeves, and openings with general construction work and arrange in building structure during progress of construction to facilitate the electrical installations that follow.
 - 1. Set inserts and sleeves in poured-in-place concrete, masonry work, and other structural components as they are constructed.
- B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment requiring positioning before closing in the building.
- C. Coordinate electrical service connections to components furnished by utility companies.
 - 1. Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for electricity-metering components.
 - 2. Comply with requirements of authorities having jurisdiction and of utility company providing electrical power and other services.
- D. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces. Access doors and panels are specified in Division 8 Section "Access Doors."
- E. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.
- F. Where electrical identification markings and devices will be concealed by acoustical ceilings and similar finishes, coordinate installation of these items before ceiling installation.

2.0 PRODUCTS

2.01 SUPPORTING DEVICES

- A. Material: Cold-formed steel, with corrosion-resistant coating acceptable to authorities having jurisdiction.
- B. Metal items for use outdoors or in damp locations: Hot-dip galvanized steel.
- C. Slotted-steel channel supports: Flange edges turned toward web, and 9/16 IN DIA slotted holes at MAX of 2 IN OC, in webs.
- D. Slotted-steel channel supports: Comply with Division 5 Section "Metal Fabrications" for slotted channel framing.
 - 1. Channel thickness: Selected to suit structural loading.
 - 2. Fittings and accessories: Products of the same manufacturer as channel supports.
- E. Nonmetallic channel and angle systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with 9/16 IN DIA holes at MAX of 8 IN OC, in at least one surface.
 - 1. Fittings and accessories: Products of the same manufacturer as channels and angles.
 - 2. Fittings and accessory materials: Same as channels and angles, except metal items may be stainless steel.
- F. Raceway and cable supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.
- G. Pipe sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.
- H. Cable supports for vertical conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for nonarmored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.
- I. Expansion anchors: Carbon-steel wedge or sleeve type.
- J. Toggle bolts: All-steel springhead type.
- K. Powder-driven threaded studs: Heat-treated steel.

2.02 ELECTRICAL IDENTIFICATION

- A. Identification devices: A single type of identification product for each application category. Use colors prescribed by ANSI A13.1, NFPA 70, and these Specifications.
- B. Raceway and cable labels: Comply with ANSI A13.1, Table 3, for MIN size of letters for legend and MIN length of color field for each raceway and cable size.
 - 1. Type: Pretensioned, wraparound plastic sleeves. Flexible, preprinted, color-coded, acrylic band sized to suit the diameter of the item it identifies.
 - 2. Type: Preprinted, flexible, self-adhesive, vinyl. Legend is overlaminated with a clear, weather- and chemical-resistant coating.
 - 3. Color: Black letters on orange background.
 - 4. Legend: Indicates voltage.
- C. Colored adhesive marking tape for raceways, wires, and cables: Self-adhesive vinyl tape, not less than 1 IN wide by 3 MILS thick.
- D. Underground warning tape: Permanent, bright-colored, continuous-printed, vinyl tape with the following features:
 - 1. Not less than 6 IN wide by 4 MILS thick.
 - 2. Compounded for permanent direct-burial service.
 - 3. Embedded continuous metallic strip or core.
 - 4. Printed legend that indicates type of underground line.
- E. Tape markers for wire: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.
- F. Color-coding cable ties: Type 6/6 nylon, self-locking type. Colors to suit coding scheme.
- G. Engraved-plastic labels, signs, and instruction plates: Engraving stock, melamine plastic laminate punched or drilled for mechanical fasteners 1/16 IN MIN thickness for signs up to 20 SI and 1/8 IN MIN thickness for larger sizes. Engraved legend in black letters on white background.

- H. Interior warning and caution signs: Comply with 29 CFR, Chapter XVII, Part 1910.145. Preprinted, aluminum, baked-enamel-finish signs, punched or drilled for mechanical fasteners, with colors, legend, and size appropriate to the application.
 - I. Exterior warning and caution signs: Comply with 29 CFR, Chapter XVII, Part 1910.145. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-IN, galvanized-steel backing, with colors, legend, and size appropriate to the application. 1/4 IN grommets in corners for mounting.
 - J. Fasteners for nameplates and signs: Self-tapping, stainless-steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.
- 2.03 EQUIPMENT FOR UTILITY COMPANY'S ELECTRICITY METERING
- A. Not used.
- 2.04 EQUIPMENT FOR ELECTRICITY METERING BY OWNER
- A. Not used.
- 2.05 CONCRETE BASES
- A. Concrete forms and reinforcement materials: As specified in Division 3 Section "Cast-in-Place Concrete."
 - B. Concrete: 3000 PSI, 28 day compressive strength as specified in Division 3 Section "Cast-in-Place Concrete."
- 2.06 TOUCH-UP PAINT
- A. For equipment: Equipment manufacturer's paint selected to match installed equipment finish.
 - B. Galvanized surfaces: Zinc-rich paint recommended by item manufacturer.
- 3.0 EXECUTION
- 3.01 ELECTRICAL EQUIPMENT INSTALLATION:
- A. Headroom maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide the MAX possible headroom.
 - B. Materials and components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.
 - C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with MIN interference with other installations.
 - D. Right of way: Give to raceways and piping systems installed at a required slope.
- 3.02 ELECTRICAL SUPPORTING DEVICE APPLICATION
- A. Damp locations and outdoors: Hot-dip galvanized materials or nonmetallic, U-channel system components.
 - B. Dry locations: Steel materials.
 - C. Support clamps for PVC raceways: Click-type clamp system.
 - D. Selection of supports: Comply with manufacturer's written instructions.
 - E. Strength of supports: Adequate to carry present and future loads, times a safety factor of at least 4; MIN of 200 LB design load.
- 3.03 SUPPORT INSTALLATION
- A. Install support devices to securely and permanently fasten and support electrical components.
 - B. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assemblies and for securing hanger rods and conduits.
 - C. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.
 - D. Size supports for multiple raceway installations so capacity can be increased by a 25% MIN in the future.

- E. Support individual horizontal raceways with separate, malleable-iron pipe hangers or clamps.
- F. Install 1/4 IN DIA or larger threaded steel hanger rods, unless otherwise indicated.
- G. Spring-steel fasteners specifically designed for supporting single conduits or tubing may be used instead of malleable-iron hangers for 1-1/2 IN and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to slotted channel and angle supports.
- H. Arrange supports in vertical runs so the weight of raceways and enclosed conductors is carried entirely by raceway supports, with no weight load on raceway terminals.
- I. Simultaneously install vertical conductor supports with conductors.
- J. Separately support cast boxes that are threaded to raceways and used for fixture support. Support sheet-metal boxes directly from the building structure or by bar hangers. If bar hangers are used, attach bar to raceways on opposite sides of the box and support the raceway with an approved fastener not more than 24 IN from the box.
- K. Install metal channel racks for mounting cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices unless components are mounted directly to structural elements of adequate strength.
- L. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.
- M. Securely fasten electrical items and their supports to the building structure, unless otherwise indicated. Perform fastening according to the following unless other fastening methods are indicated:
 - 1. Wood: Fasten with wood screws or screw-type nails.
 - 2. Masonry: Toggle bolts on hollow masonry units and expansion bolts on solid masonry units.
 - 3. New Concrete: Concrete inserts with machine screws and bolts.
 - 4. Existing Concrete: Expansion bolts.
 - 5. Instead of expansion bolts, threaded studs driven by a powder charge and provided with lock washers may be used in existing concrete.
 - 6. Steel: Welded threaded studs or spring-tension clamps on steel.
 - a. Field welding: Comply with AWS D1.1.
 - 7. Welding to steel structure may be used only for threaded studs, not for conduits, pipe straps, or other items.
 - 8. Light Steel: Sheet-metal screws.
 - 9. Fasteners: Select so the load applied to each fastener does not exceed 25% of its proof-test load.

3.04 IDENTIFICATION MATERIALS AND DEVICES

- A. Install at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.
- C. Self-Adhesive Identification Products: Clean surfaces before applying.
- D. Identify raceways and cables with color banding as follows:
 - 1. Bands: Pretensioned, snap-around, colored plastic sleeves or colored adhesive marking tape. Make each color band 2 IN, completely encircling conduit, and place adjacent bands of two-color markings in contact, side by side.
 - 2. Band locations: At changes in direction, at penetrations of walls and floors, at 50 FT MAX intervals in straight runs, and at 25 FT MAX intervals in congested areas.
 - 3. Colors: As follows:
 - a. Fire alarm system: Red
 - b. Security system: Blue and yellow.
 - c. Telecommunication system: Green and yellow.

- E. Tag and label circuits designated to be extended in the future. Identify source and circuit numbers in each cabinet, pull and junction box, and outlet box. Color-coding may be used for voltage and phase identification.
- F. Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines located directly above power and communication lines. Locate 6 IN to 8 IN below finished grade. If width of multiple lines installed in a common trench or concrete envelope does not exceed 16 IN, overall, use a single line marker.
- G. Color-code 208/120-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:
 - 1. Phase A: Black
 - 2. Phase B: Red
 - 3. Phase C: Blue
 - 4. Neutral: White
 - 5. Ground: Green
- H. Color-code 480/277-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:
 - 1. Phase A: Yellow
 - 2. Phase B: Brown
 - 3. Phase C: Orange
 - 4. Neutral: Grey
 - 5. Ground: Green with white trace.
- I. Install warning, caution, and instruction signs where required to comply with 29 CFR, Chapter XVII, Part 1910.145, and where needed to ensure safe operation and maintenance of electrical systems and of items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.
- J. Install engraved-laminated emergency-operating signs with white letters on red background with minimum 3/8 IN high lettering for emergency instructions on power transfer, load shedding, and other emergency operations.

3.05 UTILITY COMPANY ELECTRICITY-METERING EQUIPMENT

- A. Not used.

3.06 FIRESTOPPING

- A. Apply firestopping to cable and raceway penetrations of fire-rated floor and wall assemblies to achieve fire-resistance rating of the assembly. Firestopping materials and installation requirements are specified in Division 7 Section "Firestopping."

3.07 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 IN larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated. Use 3000 PSI, 28 day compressive-strength concrete and reinforcement as specified in Division 3 Section "Cast-in-Place Concrete."

3.08 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces. Install new fireproofing where existing firestopping has been disturbed. Repair and refinish materials and other surfaces by skilled mechanics of trades involved.

3.09 FIELD QUALITY CONTROL

- A. Inspect installed components for damage and faulty work, including the following:
 - 1. Raceways
 - 2. Building wire and connectors.
 - 3. Supporting devices for electrical components.
 - 4. Electrical identification.
 - 5. Electricity-metering components.
 - 6. Concrete bases.
 - 7. Electrical demolition.
 - 8. Cutting and patching for electrical construction.
 - 9. Touchup painting.

3.10 REFINISHING AND TOUCHUP PAINTING

- A. Refinish and touch up paint. Paint materials and application requirements are specified in Division 9 Section "Painting."
 - 1. Clean damaged and disturbed areas and apply primer, intermediate, and finish coats to suit the degree of damage at each location.
 - 2. Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.
 - 3. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 4. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

3.11 CLEANING AND PROTECTION

- A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris.
- B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

END OF SECTION

26 51 00
INTERIOR LIGHTING

1.0 GENERAL

1.01 SUMMARY

- A. Provide and install soffit mounted light fixtures, lamps, ballasts, and accessories.

1.02 SUBMITTALS

- A. Section 01 33 00-Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on features, accessories, and the following:
1. Dimensions of fixtures.
 2. Certified results of independent laboratory tests for fixtures and lamps for electrical ratings and photometric data.
 4. Certified results of laboratory tests for fixtures and lamps for photometric performance.
 5. Emergency lighting unit battery and charger.
 6. Types of lamps.
- B. Shop Drawings: Indicate dimensions, weights, methods of field assembly, components, features, and accessories. Show details of nonstandard or custom fixtures.

1.03 QUALITY ASSURANCE

- A. Fixtures, emergency lighting units, and accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- B. Comply with NFPA 70.
- C. FM compliance: Fixtures for hazardous locations shall be listed and labeled for indicate class and division of hazard by FM.

1.04 COORDINATION

- A. Fixtures, mounting hardware, and trim: Coordinate layout and installation of lighting fixtures with metal panel soffit system and other construction.

1.05 WARRANTY

- A. General warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provision of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

2.0 PRODUCTS

2.01 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide the products indicated on the Drawings or equal light fixtures of other manufacturers approved in advance by the Architect/Engineer.

2.02 FIXTURES AND FIXTURE COMPONENTS, GENERAL

- A. Metal parts: Free from burrs, sharp corners, and edges.
- B. Sheet metal components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- C. Door, frames, and other internal access: Smooth operating, free from light leakage under operating conditions, and arranged to permit relamping without use of tools. Arrange doors, frames, lenses, diffusers, and other pieces to prevent accidental falling during relamping and when secured in operating position.
- D. Reflecting surfaces: MIN reflectance as follows, unless otherwise indicated:
1. White surfaces: 85%.
 2. Specular surfaces: 83%.
 3. Diffusing specular surfaces: 75%.
 4. Laminated silver metallized film: 90%.

- E. Lenses, diffusers, covers, and globes: 100% virgin acrylic plastic or annealed crystal glass, unless otherwise indicated.
 - 1. Plastic: High resistance to yellowing and other changes due to aging, exposure to heat, and ultraviolet radiation.
 - 2. Lens thickness: 0.125 IN MIN, unless greater thickness is indicated.

2.03 LED FIXTURES

- A. Fixtures shall be UP or Intertek ETL listed.
- B. Drivers shall be capable of accepting the voltage indicated on the plans or schedule and capable of dimming if required. The driver shall be class A sound less than 20%, rated for operation between -40°F and 100°F. Driver shall contain no PCBs.
- C. All LED fixtures shall be tested to IES LM-79 and IES LM-80.
- D. Fixtures shall have efficacy of 60 lumens per watt or greater.
- E. Color accuracy: CRI of 70 or greater. Light color shall match color of existing second floor soffit light fixtures as closely as possible. All new light fixtures shall have the same light color.
- F. Outdoor fixtures shall be IP65 rated.
- G. LED driver and components shall have a system lifetime of 50,000 HRS or more at 75°F.
- H. Fixtures shall have MIN 5 YR warranty on all components and finishes.

2.04 FIXTURE SUPPORT COMPONENTS

- A. Comply with Section 26 05 00 Basic Electrical Materials and Methods, for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Single-stem hangers: 1/2 IN steel tubing with swivel ball fitting and ceiling canopy. Finish same as fixture.
- C. Twin-stem hangers: Two, 1/2 IN steel tubes with single canopy arranged to mount a single fixtures. Finish same as fixture.
- D. Rod hangers: 3/16 IN MIN DIA, cadmium-plated, threaded steel rod.
- E. Hook hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

2.05 FINISHES

- A. Fixtures: Manufacturer's standard, unless otherwise indicated.
 - 1. Paint finish: Applied over corrosion-resistant treatment or primer, free of defects.
 - 2. Metallic finish: Corrosion resistant.

3.0 EXECUTION

3.01 EXISTING WORK

- A. Disconnect and remove exterior light fixtures directed by the Drawings.
- B. Maintain existing light fixture circuits for re-use with new light fixtures.

3.02 INSTALLATION

- A. Fixtures: Set level, plumb, and square with ceiling and walls, and secure according to manufacturer's written instructions and approved submittal materials. Install lamps in each fixture.
 - 1. Fixtures in metal soffit panels: Arrange as indicated on reflected ceiling plans and center in metal soffit panels. Support fixtures independently with 2 MIN 3/4 IN metal channels secured to soffit framing or roof framing.

3.03 CONNECTIONS

- A. Ground equipment: Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.04 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Advance notice: Give dates and times for field tests.
- C. Provide instruments to make and record test results.

- D. Tests:
 - 1. Verify normal operation of each fixture after installation.
 - 2. Emergency lighting (where applicable): Interrupt electrical supply to demonstrate proper operation.
 - 3. Verify normal transfer to battery source and retransfer to normal.
 - 4. Report results in writing.
- E. Malfunctioning fixtures and components: Replace or repair, then retest. Repeat procedure until units operate properly.
- F. Corrosive fixtures: Replace during warranty period.

3.05 CLEANING AND ADJUSTING

- A. Clean fixtures internally and externally after installation. Use methods and materials recommended by fixture manufacturer.
- B. Adjust aimable fixtures to provide required light intensities.

3.06 PROTECTION OF FINISHED WORK

- A. Section 01 77 00-Closeout Procedures: Protecting finished work.

END OF SECTION

Structural & Waterproofing Repairs to Exterior Walkway 900 E. Park Blvd. Plano, TX 75074

WJE NO. 2020.6756.1

Client/Owner: Collin County, Texas
4600 Community Avenue
McKinney, TX 75071

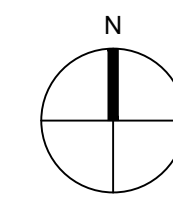
Engineer: Wiss, Janney, Elstner Associates, Inc.
6363 N. State Highway 161, Suite 550
Irving, TX 75038
972.550.7777

2-21-2022 - REVISIONS PER COUNTY

Drawing Sheet Index	
Sheet Number	Sheet Title
S0.0	COVER SHEET
S0.1	GENERAL NOTES
S1.0	SITE PLAN
S2.0	STRUCTURAL PLANS
S2.1	WATERPROOFING PLANS
S3.0	STRUCTURAL SECTIONS
S3.1	STRUCTURAL SECTIONS
S4.0	WATERPROOFING SECTIONS
S4.1	WATERPROOFING DETAILS



AERIAL VIEW
NTS



EAST ELEVATION - LOOKING SOUTHWEST
NTS

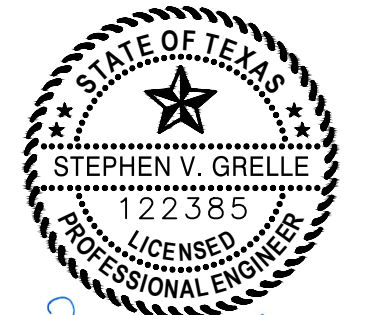


WEST ELEVATION - LOOKING NORTHEAST
NTS

WJE ENGINEERS
ARCHITECTS
MATERIALS SCIENTISTS

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Stephen V. Grelle
2-11-2022

Seal

Consultants

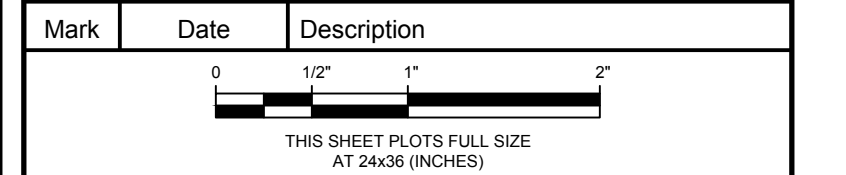
Project

Structural & Waterproofing
Repairs to Exterior Walkway
900 E. Park Blvd.
Plano, TX 75074

Client

Collin County, Texas
4600 Community Avenue
McKinney, TX 75071

Mark	Date	Description
1	2-21-2022	REVISIONS PER COUNTY
-	2-11-2022	ISSUED FOR CONSTRUCTION



Project No. 2020.6756.1

Date 2-11-2022

Drawn TJH

Checked SVG/PBL

Scale As Noted

COVER SHEET

Sheet Title

Sheet No.

S0.0

File Name: P:\2020\2020 Temp\2020\0756-1-900 E. PARK WALKWAY REPAIRS (SVG) Drawings by WJE\Sheets\S01 - GENERAL NOTES.dwg

GENERAL NOTES

- GENERAL NOTES**
- THIS SCOPE OF WORK CONTAINED IN THESE DRAWINGS CONSISTS OF STRUCTURAL AND WATERPROOFING REPAIRS TO EXISTING WALKWAYS AT AN EXISTING TWO-STORY MUNICIPAL BUILDING.
 - REFERENCES TO "ENGINEER" SHALL REFER TO WISS, JANNEY, ELSTNER ASSOCIATES, INC. (WJE). REFERENCES TO "ARCHITECT" SHALL REFER TO OWNER'S ARCHITECT.
 - REFERENCES TO "DRAWINGS" CONTAINED HEREIN SHALL REFER ONLY TO ENGINEER'S DRAWINGS UNLESS NOTED OTHERWISE.
 - DESIGN INFORMATION:
 - BUILDING CODES: 2018 INTERNATIONAL EXISTING BUILDING CODE, 2018 INTERNATIONAL BUILDING CODE
 - LOADING:
 - LIVE LOAD
 - UPPER LEVEL WALKWAY: 100 PSF
 - SUPERIMPOSED DEAD LOAD
 - UPPER LEVEL WALKWAY: 5 PSF
 - WIND LOAD:
 - BASIC WIND SPEED (LRFD): 105 MPH
 - BASIC WIND SPEED (ASD): 82 MPH
 - RISK CATEGORY: II
 - EXPOSURE CATEGORY B
 - SNOW
 - GROUND SNOW LOAD: 5 PSF
 - RAIN LOAD: 5 PSF
 - DETAILS, DIMENSIONS, AND ELEVATIONS PERTAINING TO THE EXISTING STRUCTURE ARE PROVIDED ON THE DRAWINGS FOR GENERAL REFERENCE ONLY AND DO NOT NECESSARILY REPRESENT AS-BUILT CONDITIONS. FIELD VERIFY ALL CONDITIONS IN THE EXISTING STRUCTURE.
 - IF DISCREPANCIES, INCONSISTENCIES, OMISSIONS, ERRORS, OR A LACK OF DETAILED DESCRIPTION ARE NOTED IN THE DRAWINGS, PROMPTLY NOTIFY ENGINEER OF SUCH CONDITIONS AND REQUEST CLARIFICATION VIA A WRITTEN REQUEST FOR INFORMATION (RFI) PRIOR TO PROCEEDING WITH WORK THAT MAY BE AFFECTED.
 - COMPLY WITH AND PERFORM WORK IN ACCORDANCE WITH APPLICABLE CODES, REGULATIONS, RULES, AND STANDARDS OF AUTHORITIES HAVING JURISDICTION.
 - JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 - IMPLEMENT AND MAINTAIN A QUALITY CONTROL PROGRAM FOR ALL PHASES OF THE WORK.
 - OCCASIONAL PRESENCE OF OWNER, ENGINEER, TEST LAB, MANUFACTURER'S REPRESENTATIVE OR OTHER PARTIES AT JOB SITE DOES NOT RELIEVE CONTRACTOR OF ITS DUTY TO PERFORM THE WORK IN ACCORDANCE WITH THE DRAWINGS.
 - SUBSTITUTION REQUESTS SHALL BE SUBMITTED PRIOR TO AWARD OF CONTRACT. "APPROVED EQUAL" PRODUCTS SHALL BE CONSIDERED SUBSTITUTION REQUESTS. ENGINEER IS UNDER NO OBLIGATION TO CONSIDER SUBSTITUTIONS AFTER AWARD OF CONTRACT.
 - HANDLE, STORE, INSTALL, AND CURE ALL PROPRIETARY PRODUCTS IN FULL ACCORDANCE WITH THE MANUFACTURER'S PRINTED RECOMMENDATIONS.
 - THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY AND WHAT IS CALLED FOR BY ONE SHALL BE AS BINDING AS IF CALLED FOR BY BOTH. IN THE EVENT OF A CONFLICT BETWEEN THE TWO, IMMEDIATELY NOTIFY THE ENGINEER AND REQUEST CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
 - PORTIONS OF THE SPECIFICATIONS HAVE BEEN REPEATED ON THE DRAWINGS AND GENERAL NOTES FOR CONVENIENCE ONLY.

COVERED WALKWAYS

- ERECT PROTECTIVE COVERED WALKWAYS FOR PASSAGE OF INDIVIDUALS AT GROUND LEVEL BELOW ELEVATED WORK AREA WHILE WORK IS ONGOING. REFER TO SPECIFICATION SECTION 01 50 00 FOR ADDITIONAL INFORMATION.

DEMOLITION

- PROTECT THE EXISTING STRUCTURE, SURROUNDING SITE, GENERAL PUBLIC, AND ADJACENT BUILDINGS DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
- THE SCOPE OF DEMOLITION IS LIMITED TO THE 2ND LEVEL WALKWAY AND PORTIONS OF THE SIDEWALK BELOW, AS SHOWN ON DRAWINGS. THE ROOF CANOPY AND ENVELOPE OF THE INTERIOR PORTION OF THE BUILDING ARE NOT INCLUDED IN THE DEMOLITION SCOPE, EXCEPT AS SHOWN ON DRAWINGS TO TIE-IN NEW WALKWAY COMPONENTS.
- REMOVAL AND DISPOSAL OF EXISTING ELEMENTS SHALL INCLUDE, BUT IS NOT LIMITED TO THE FOLLOWING COMPONENTS OF THE 2ND LEVEL WALKWAYS:
 - ALL EXISTING WALL COMPONENTS (EXCEPT AS NOTED BELOW), INCLUDING BRICK, METAL STUDS, SHEATHING
 - SELECT PORTIONS OF CORRODED STRUCTURAL STEEL FRAMING AT LOCATIONS INDICATED ON DRAWINGS
 - SELECT PORTIONS OF CONCRETE SLAB ON METAL DECK AT LOCATIONS INDICATED ON DRAWINGS
- EXISTING COMPONENTS TO BE SALVAGED (AND RE-INSTALLED IF TEMPORARY REMOVAL IS REQUIRED) INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING COMPONENTS OF THE 2ND LEVEL WALKWAY:
 - METAL COPINGS ALONG THE EXTERIOR WALL OF THE WALKWAYS
 - METAL WALL PANELS ALONG THE INSIDE FACE OF THE EXTERIOR WALL OF THE WALKWAYS
 - ALL RAILINGS
 - ALL STRUCTURAL STEEL FRAMING, EXCEPT WHERE REMOVAL IS SPECIFICALLY NOTED ON DRAWINGS
 - ALL CONCRETE ON METAL DECK, EXCEPT WHERE REMOVAL IS SPECIFICALLY NOTED ON DRAWINGS

MOCKUP

- CONTRACTOR SHALL DESIGNATE A MINIMUM 3'-0" LONG SECTION AT THE APPROXIMATE LOCATION SHOWN ON THE DRAWINGS AS A MOCKUP AREA.
- THE MOCKUP SHALL CONSIST OF THE FOLLOWING:
 - EXTERIOR WALL CLADDING AND BARRIER SYSTEM
 - INTERIOR WALL CLADDING AND BARRIER SYSTEM
 - STEEL COATINGS ON EXPOSED FRAMING (SHELF ANGLES, RAILINGS) AND CONCEALED FRAMING (BEAMS, CONCEALED SUPPORTS FOR SHELF ANGLE.
 - TRAFFIC COATING AND EDGE TERMINATIONS
- WHERE THE SYSTEM BEING MOCKED UP CONSISTS OF MULTIPLE LAYERS OR COATS, LEAVE AT LEAST 6" OF EACH COAT EXPOSED TO VIEW WHILE MOCKUP REMAINS IN PLACE.
- TO THE EXTENT FEASIBLE, THE MOCKUP MAY BE INCORPORATED INTO COMPLETED CONSTRUCTION. REMOVAL OF MOCKUP COMPONENTS IS REQUIRED IF MOCKUP IS EXPOSED TO PROLONGED WEATHERING, EXCESSIVE TRAFFIC, OR IF ACCESS TO CONCEALED COMPONENTS OF MOCKUP ARE REQUIRED TO TIE-IN WITH OTHER CONCEALED COMPONENTS.

CAST-IN-PLACE CONCRETE

- CONCRETE PROPERTIES:
 - STRENGTH: 3000 PSI AT 7 DAYS, 4000 PSI AT 28 DAYS
 - W/C RATIO: 0.40 MAX
 - COARSE AGGREGATE: 3/4", ASTM C33, NORMAL WEIGHT
 - AIR ENTRAINMENT: 3 TO 5 PERCENT
 - HRWR: ASTM C494, TYPE F
 - SLUMP: 3 TO 5 INCHES BEFORE HRWR IS ADDED, 7 INCHES MAX AT POINT OF DEPOSIT
- OTHER MATERIALS:
 - WELDED WIRE REINFORCEMENT: ASTM A185
 - REINFORCING STEEL (DEFORMED): ASTM A615, GRADE 60
 - ADHESIVE FOR DOWELS: HILTI HIT-HY 200 OR APPROVED EQUAL
 - PRE-PACKAGED CONCRETE FOR SMALL REPAIR AREAS: MASTEREMACO S466CI BY MASTER BUILDERS SOLUTIONS OR APPROVED EQUAL
- POSITION REINFORCING STEEL RIGIDLY IN PLACE DURING CONCRETE PLACEMENT USING CONTINUOUS SLAB BOLSTERS.

STRUCTURAL STEEL

- STRUCTURAL STEEL MATERIAL PROPERTIES:
 - WIDE FLANGES: ASTM A992, FY = 50 KSI
 - PLATES, ANGLES, CHANNELS: ASTM A36, FY = 36 KSI
 - WELD FILLER MATERIAL: 70 KSI MIN. TENSILE STRENGTH, F(U)
 - BOLTS: ASTM A325, THREADS INCLUDED IN SHEAR PLANE
- STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AISC 303-16).
- PERFORM ALL WELDING IN ACCORDANCE WITH AWS D1.1 USING LOW-HYDROGEN ELECTRODES. IF NOT SPECIFIED, WELD SIZE SHALL BE 3/16".
- REFER TO SPECIFICATIONS FOR PAINTING REQUIREMENTS FOR STEEL.

STEEL DECK NOTES

- DECK SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH "STANDARD FOR STEEL DECK" (ANSI/SDI SD-2022).
- DECK SHALL CONSIST OF VULCRAFT (OR APPROVED EQUAL) 0.6CSV24 (VENTED).
- STEEL SHEET SHALL CONFORM TO ASTM A653, FY = 33 KSI MINIMUM.
- PROVIDE G-90 GALVANIZED FINISH IN ACCORDANCE WITH ASTM A653.
- PROFILE SHALL CLOSELY MATCH PROFILE OF EXISTING DECK IN ORDER TO ALLOW TIGHT NESTING OF SHEETS AT LAPS WITH EXISTING DECK.
- CONNECTIONS TO PRIMARY SUPPORTS (E.G., BEAMS) SHALL CONSIST OF #10 TEK SCREWS USING A 30/4 PATTERN. CONNECTIONS TO SIDE SUPPORTS (E.G., EDGE ANGLE PARALLEL TO DECK SPAN) SHALL CONSIST OF #10 TEK SCREWS 12 INCHES ON CENTER.
- DECK SIDELAP FASTENERS ARE NOT REQUIRED.

COLD-FORMED METAL FRAMING

- THIS SECTION INCLUDES ONLY FRAMING USED IN WALL CAVITIES AND DOES NOT INCLUDE FRAMING USED TO SUPPORT THE WALKWAY SOFFIT (REFER TO ARCH. FOR SOFFIT).
- METAL STUDS SHALL BE C-SERIES STUDS BY CLARKDIETRICH, OR APPROVED EQUAL, WITH CP60 COATING AND SIZES AS SHOWN ON DRAWINGS.
- TRACK SHALL BE T-SERIES TRACK BY CLARKDIETRICH, OR APPROVED EQUAL, WITH CP60 COATING, DEPTH TO MATCH ASSOCIATED STUDS, AND MINIMUM 20 GAUGE.
- FASTEN STUDS TO TRACK WITH #10-16 X 5/8 HHM SD SCREWS.
- FASTEN TRACK/STUDS TO STRUCTURAL FRAMING USING 0.157" PDPA POWDER-ACTUATED FASTENERS BY SIMPSON STRONG TIE, OR APPROVED EQUAL. FASTENERS SHALL BE PLACED AT TOP AND BOTTOM OF EACH STUD (IN TRACK OR STUD, AS APPROPRIATE) AND SHALL BE SPACED AT 24" ON-CENTER MAXIMUM HORIZONTALLY FOR EACH ROW OF FASTENERS.

STEEL COATING

- PROVIDE STEEL COATING OVER NEW AND EXISTING STEEL SURFACES. REFER TO SPECIFICATION SECTION 09 97 13 FOR ADDITIONAL INFORMATION (E.G., PRODUCTS, SURFACE PREPARATION).
- APPLY "TWO-COAT" SYSTEM TO ALL STEEL THAT WILL REMAIN EXPOSED TO VIEW, INCLUDING ALL SURFACES OF RAILINGS, COLUMNS (FROM 1ST LEVEL PAVEMENT TO THE UNDERSIDE OF THE ROOF CANOPY), COLUMN BASE PLATES (WHERE EXPOSED FOR REPAIRS) AND SHELF ANGLES. STAIR FRAMING IS EXCLUDED FROM SCOPE.
- APPLY "ONE-COAT" SYSTEM TO ALL NEW AND EXISTING STEEL SURFACES IN THE SOFFIT OR WALL CAVITY. UNDERSIDE OF METAL DECK IS EXCLUDED FROM SCOPE.

SPECIAL INSPECTIONS

- SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE IBC WILL BE PERFORMED BY A TESTING LABORATORY RETAINED BY OWNER.
- THE FOLLOWING ITEMS WILL BE INCLUDED IN THE INSPECTIONS:
 - 100% OF WELDED STEEL CONNECTIONS
 - 100% OF BOLTED STEEL CONNECTIONS
 - REINFORCEMENT IN CONCRETE OVER METAL DECK PRIOR TO CONCRETE PLACEMENT
 - CONCRETE SAMPLING AND TESTING FOR CONCRETE OVER METAL DECK IN ACCORDANCE WITH SPECIFICATION SECTION 03 30 00
- CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS OF NOTICE TO TESTING LABORATORY THAT WORK IS READY FOR INSPECTION. COOPERATE WITH INSPECTION PERSONNEL AND PROVIDE ACCESS TO AREA OF WORK TO BE REVIEWED.

ABBREVIATIONS

& ARCH.	AND ARCHITECT/ARCHITECTURAL
C	CENTERLINE
CONC.	CONCRETE
C.J.	CONTINUOUS(LY)
CLR	CONSTRUCTION JOINT
DBL.	CLEAR
EA.	DOUBLE
E.J.	EACH
EQ	EXPANSION JOINT
(E)	EQUAL
FS	FAR SIDE
F.V.	FIELD VERIFY
GA.	GAGE OR GAUGE
GALV.	GALVANIZED
HORIZ.	HORIZONTAL
NS	NEAR SIDE
(N)	NEW
O.C.	ON CENTER
?	PLATE
REINF.	REINFORCE(D) (MENT) (ING)
REQ'D.	REQUIRED
STD.	STANDARD
STRUTTL.	STRUCTURAL
TBD	TO BE DETERMINED
THRU	THROUGH
TYP.	TYPICAL(LY)
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
W	WITH

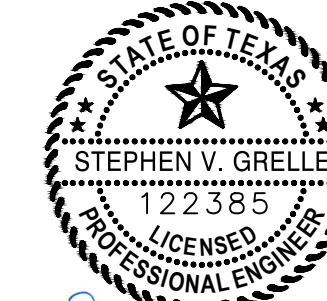


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Seal



Stephen W. Grellle
 2-11-2022

Consultants

Project

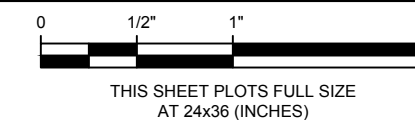
**Structural & Waterproofing
 Repairs to Exterior Walkway
 900 E. Park Blvd.
 Plano, TX 75074**

Client

**Collin County, Texas
 4600 Community Avenue
 McKinney, TX 75071**

1	2-21-2022	REVISIONS PER COUNTY
-	2-11-2022	ISSUED FOR CONSTRUCTION

Mark	Date	Description
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Project No. 2020.6756.1

Date 2-11-2022

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GENERAL NOTES

Sheet Title

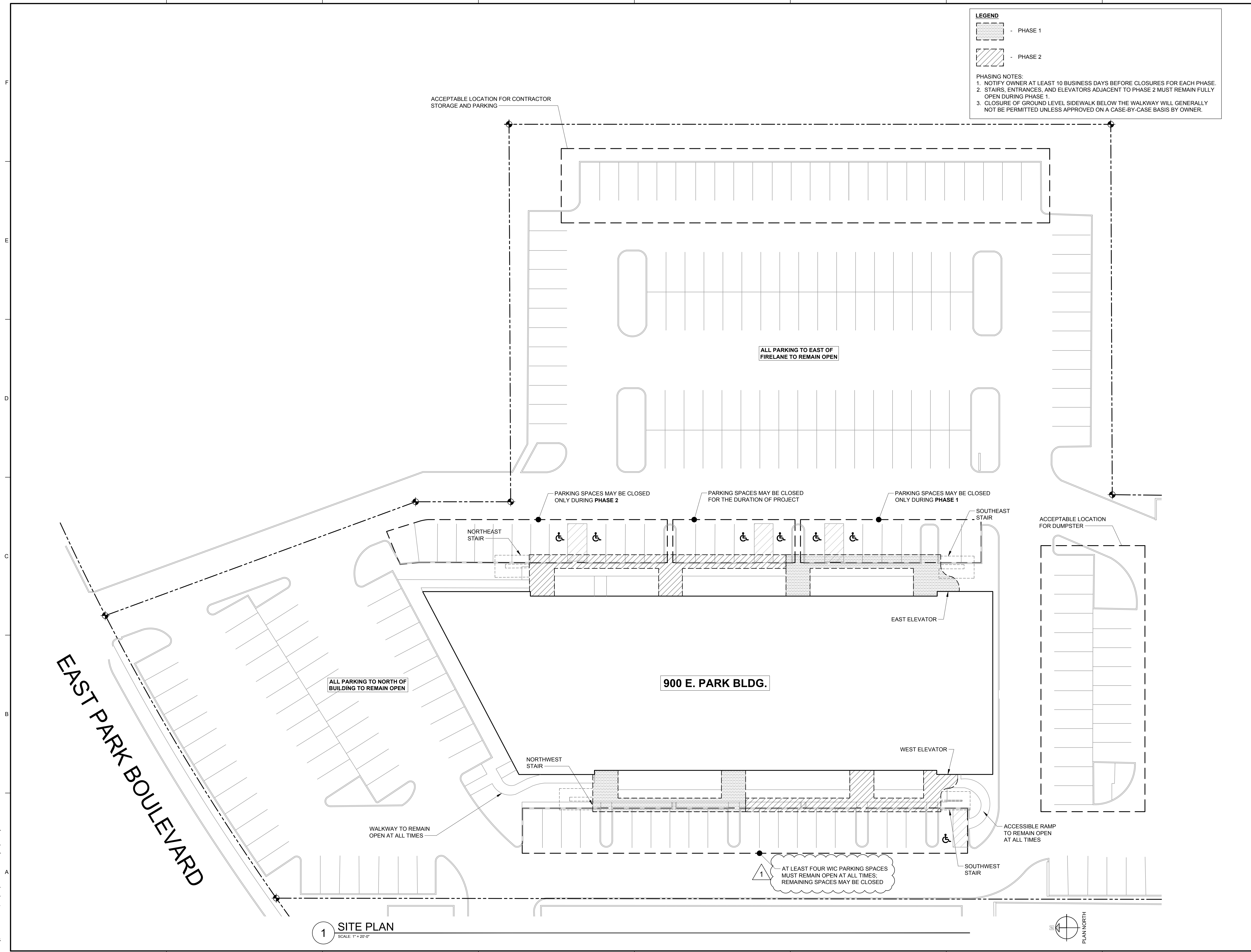
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Project: 2/22/2022 9:41 AM by Hussein, Terence File Name: P:\2020\2020_Temp\2020.0756.1 - 900 E PARK WALKWAY REPAIRS (SVG) Drawings by WJESheets\1.0 SITE PLAN.dwg

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LEGEND

- PHASE 1
- PHASE 2

PHASING NOTES:

1. NOTIFY OWNER AT LEAST 10 BUSINESS DAYS BEFORE CLOSURES FOR EACH PHASE.
2. STAIRS, ENTRANCES, AND ELEVATORS ADJACENT TO PHASE 2 MUST REMAIN FULLY OPEN DURING PHASE 1.
3. CLOSURE OF GROUND LEVEL SIDEWALK BELOW THE WALKWAY WILL GENERALLY NOT BE PERMITTED UNLESS APPROVED ON A CASE-BY-CASE BASIS BY OWNER.

WJE ENGINEERS
ARCHITECTS
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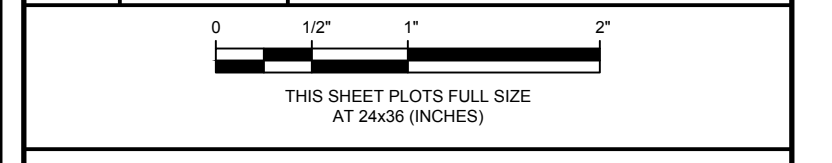
Project

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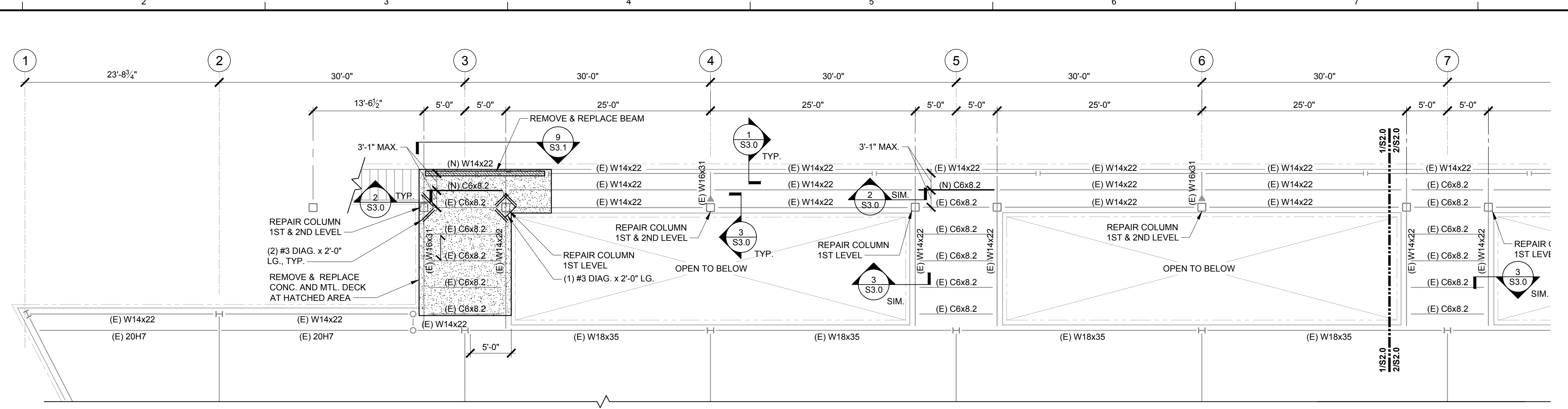
SITE PLAN

Sheet Title

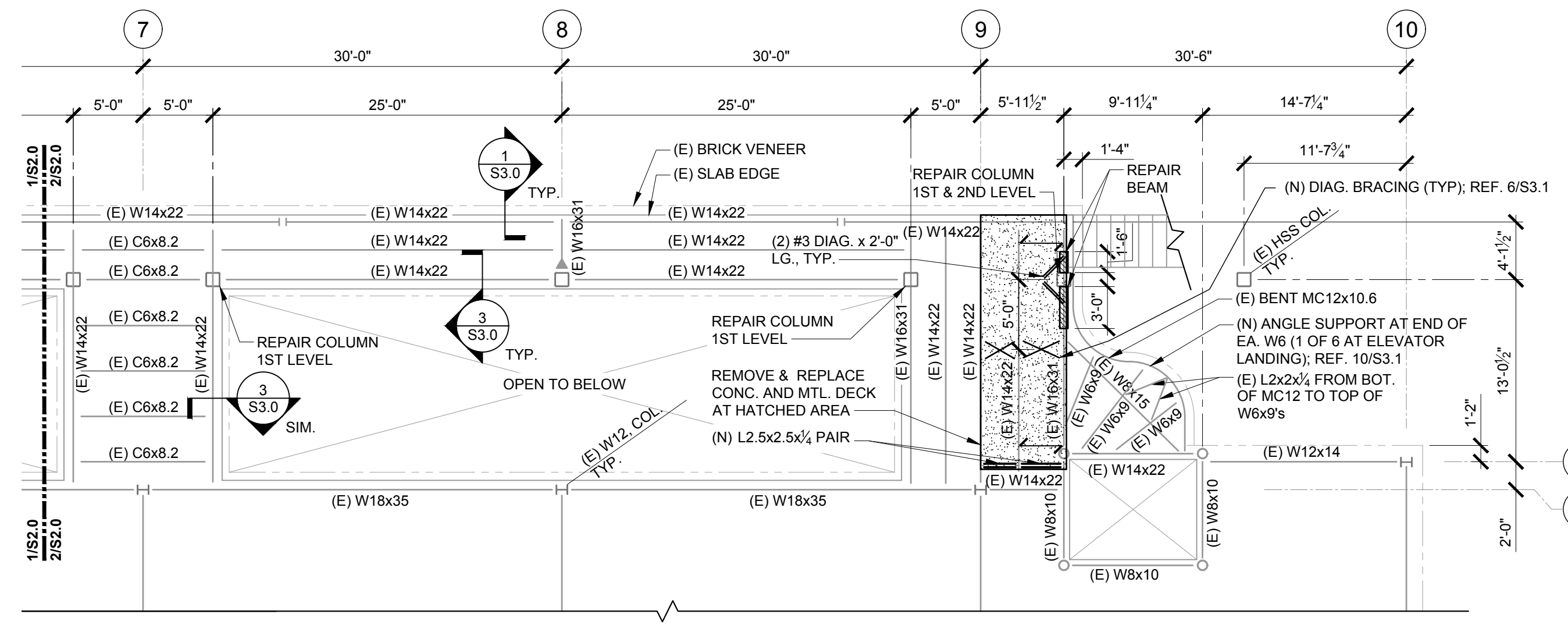
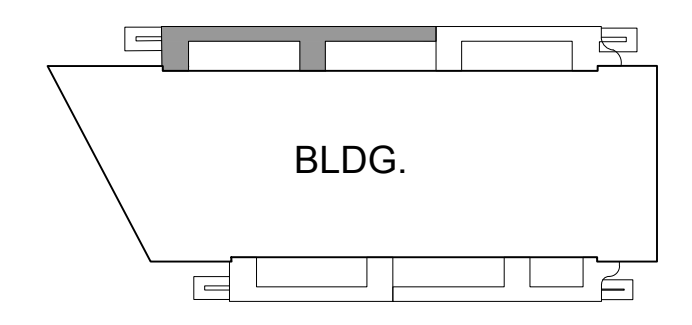
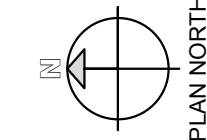
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1 SITE PLAN
SCALE: 1" = 20'-0"

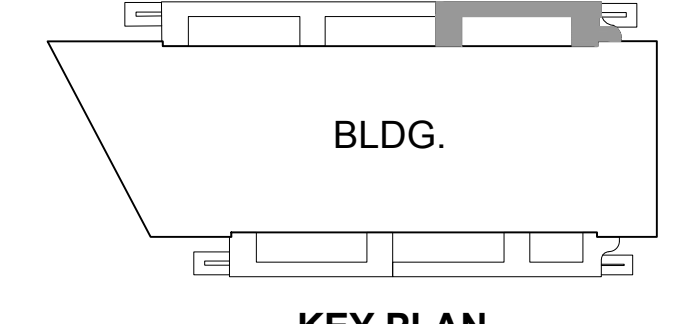
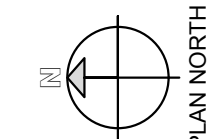
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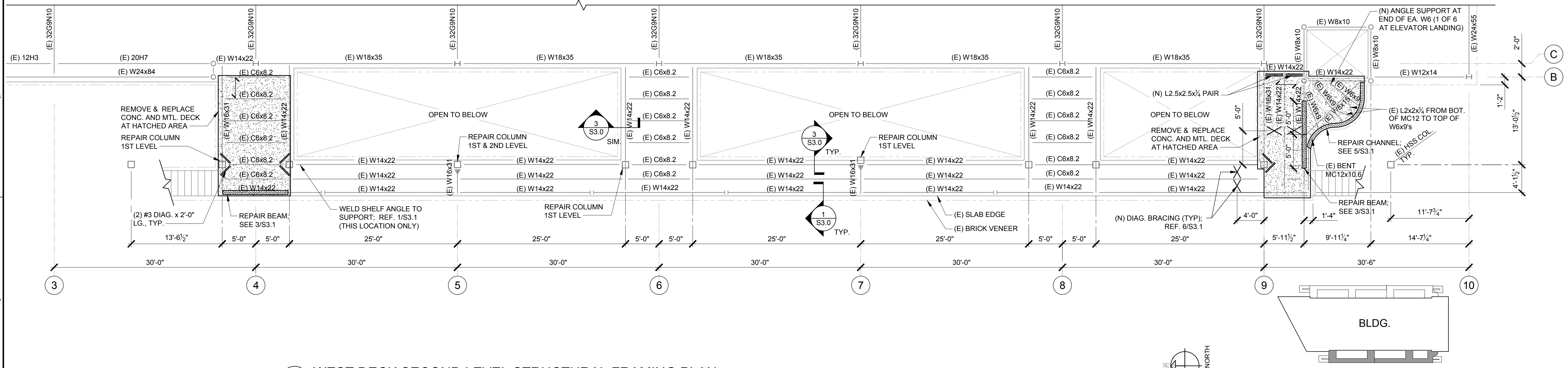
1 PARTIAL EAST DECK SECOND LEVEL STRUCTURAL FRAMING PLAN - GRID 1 THRU 7
 SCALE: 1/8" = 1'-0"



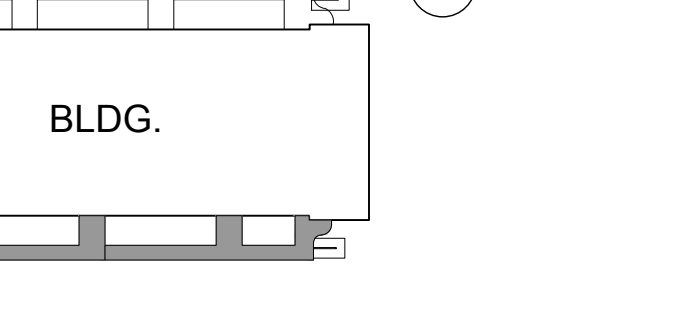
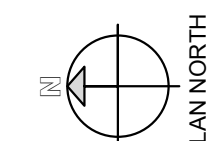
2 PARTIAL EAST DECK SECOND LEVEL STRUCTURAL FRAMING PLAN - GRID 7 THRU 10
 SCALE: 1/8" = 1'-0"



- SHEET NOTES:**
- NEW SLAB ON METAL DECK SHALL HAVE NOMINAL 3-1/2" TOTAL THICKNESS AND SHALL BE FINISHED FLUSH WITH ADJACENT CONCRETE. REINFORCEMENT SHALL BE W6xW6 - W4.0 x W4.0 W.W.F. (MESH SHALL BE RIGIDLY HELD IN POSITION 1" BELOW TOP OF SLAB). REFER TO GENERAL NOTES FOR ADDITIONAL METAL DECK AND REINFORCEMENT INFORMATION.
 - SEE S3.0 FOR TYPICAL DETAILS FOR NEW SLAB ON METAL DECK.
 - FOR COLUMN REPAIRS AT 1ST LEVEL, SEE 10/S3.0.
 - FOR COLUMN REPAIRS AT 2ND LEVEL, SEE 12/S3.0.
 - BEAM REPAIRS SHOWN ON PLANS ARE KNOWN AREAS WHERE REPAIR IS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR MEASURING SECTION LOSS DUE TO CORROSION AFTER REMOVAL OF WALL CLADDING AND SPECIFIED AREAS OF CONCRETE AND METAL DECK. REFER TO DETAILS FOR ADDITIONAL INSTRUCTION.
 - SECTIONS FOR SHELF ANGLE REPLACEMENT ARE SHOWN FOR ORIENTATION ONLY. CONTRACTOR IS RESPONSIBLE FOR MEASURING SECTION LOSS DUE TO CORROSION AFTER REMOVAL OF WALL CLADDING. REFER TO DETAILS FOR ADDITIONAL INSTRUCTION.
 - REFER TO ARCH. FOR FLOOR DRAIN REPLACEMENT LOCATIONS. SUPPORT FOR NEW DRAINS SHALL BE PER 14/S3.1.



3 WEST DECK SECOND LEVEL STRUCTURAL FRAMING PLAN
 SCALE: 1/8" = 1'-0"



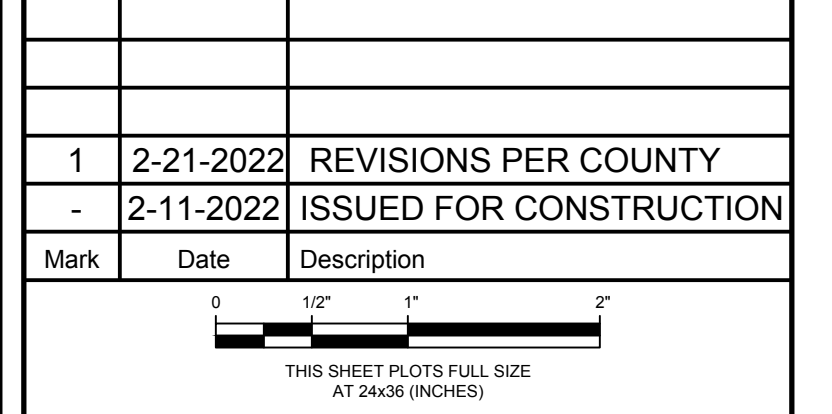
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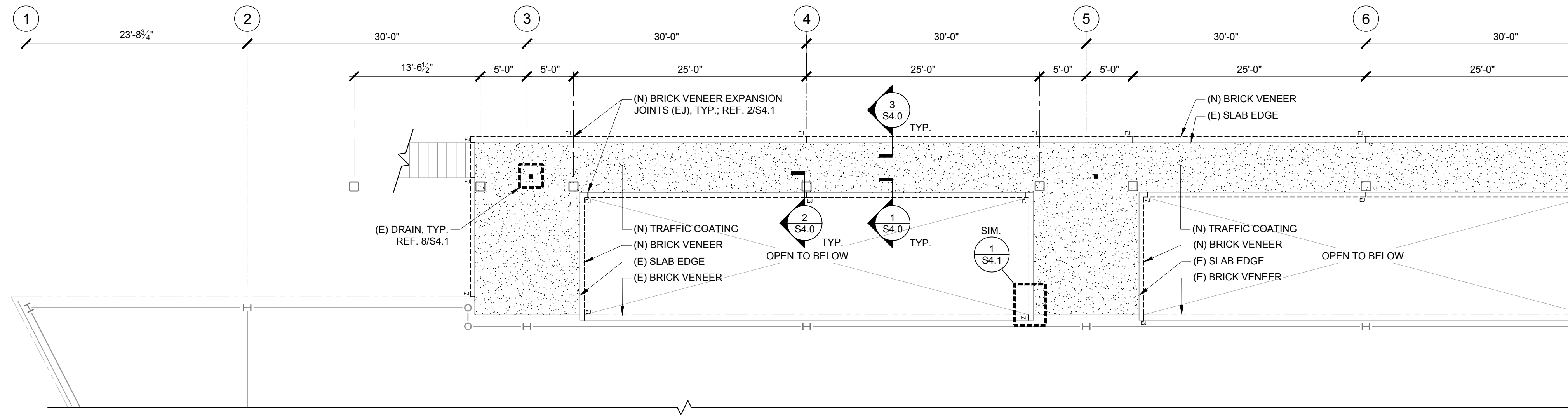
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STRUCTURAL PLANS
 Sheet Title
 Sheet No. **S2.0**

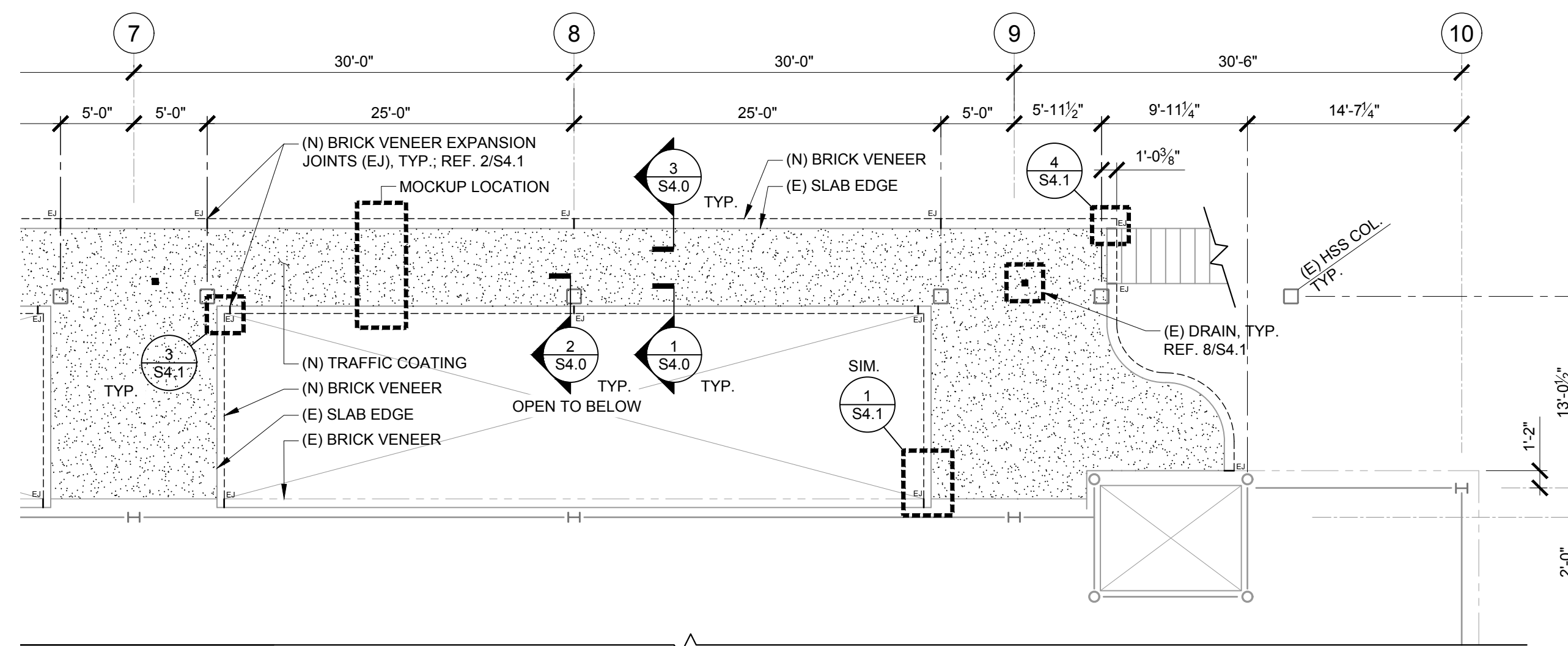
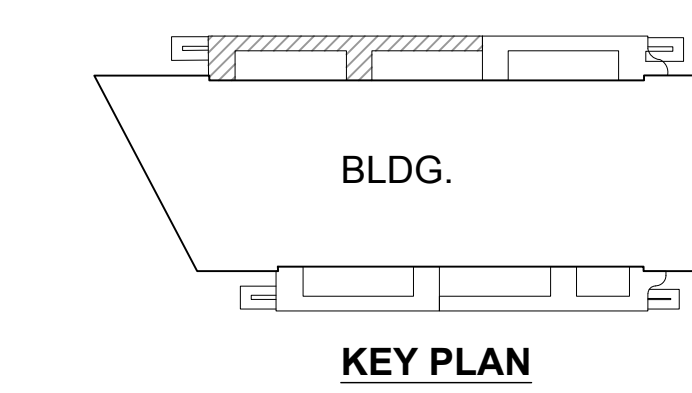
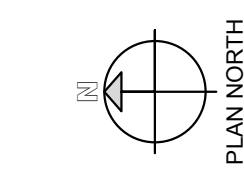
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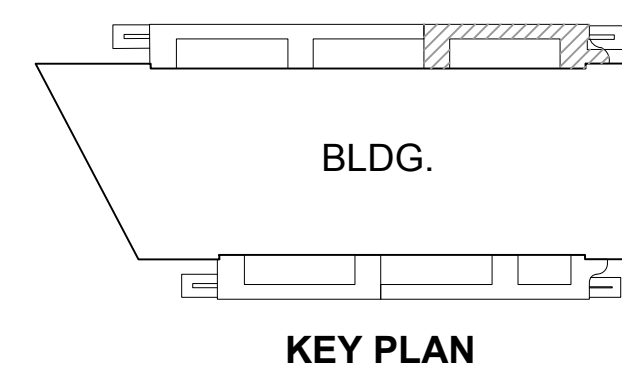
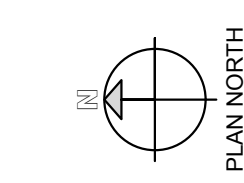
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1 PARTIAL EAST DECK SECOND LEVEL PLAN (GRID 1 THRU 7)
SCALE: 1/8" = 1'-0"

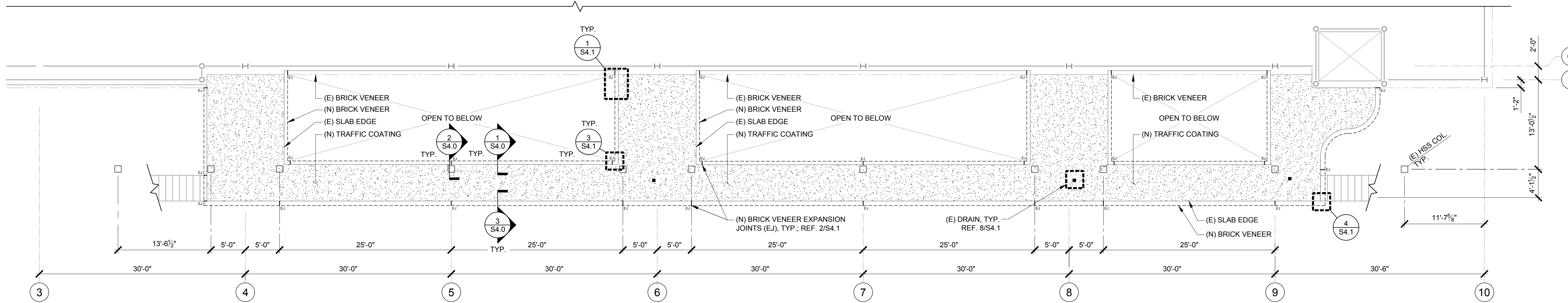


2 PARTIAL EAST DECK SECOND LEVEL PLAN (GRID 7 THRU 10)
SCALE: 1/8" = 1'-0"

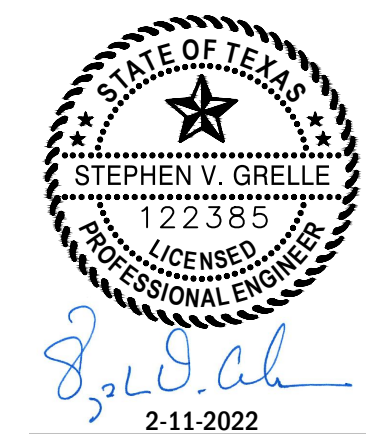
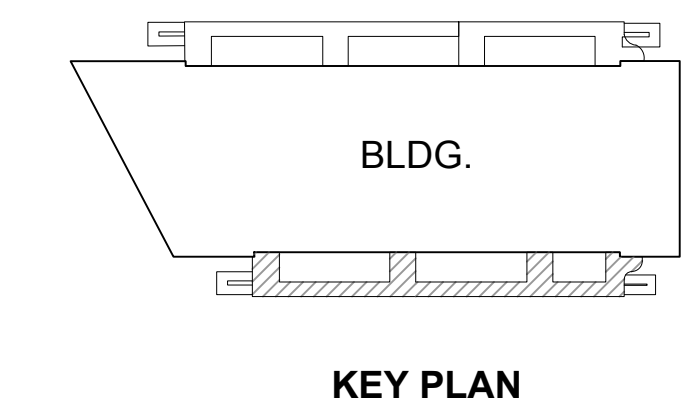
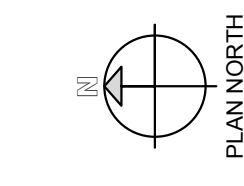


NOTES:

1. REMOVE, STORE, AND REINSTALL ALL (E) SIGNAGE, FIXTURES, AND OTHER SURFACE MOUNTED ITEMS ON REPLACED BRICK VENEER.
2. ROUTE AND SEAL ALL JOINTS AND CRACKS IN EXCESS OF 1/16" IN CONCRETE DECK PRIOR TO APPLICATION OF (N) TRAFFIC COATING (REF. 7/S4.1)
3. APPLY (N) TWO COAT SYSTEM ON (E) HANDRAILS, POSTS, COLUMNS, AND OTHER EXPOSED STEEL COMPONENTS AT WALKWAYS.



3 PARTIAL WEST DECK SECOND LEVEL PLAN (GRID 3 THRU 10)
SCALE: 1/8" = 1'-0"



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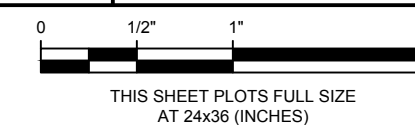
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Scale As Noted

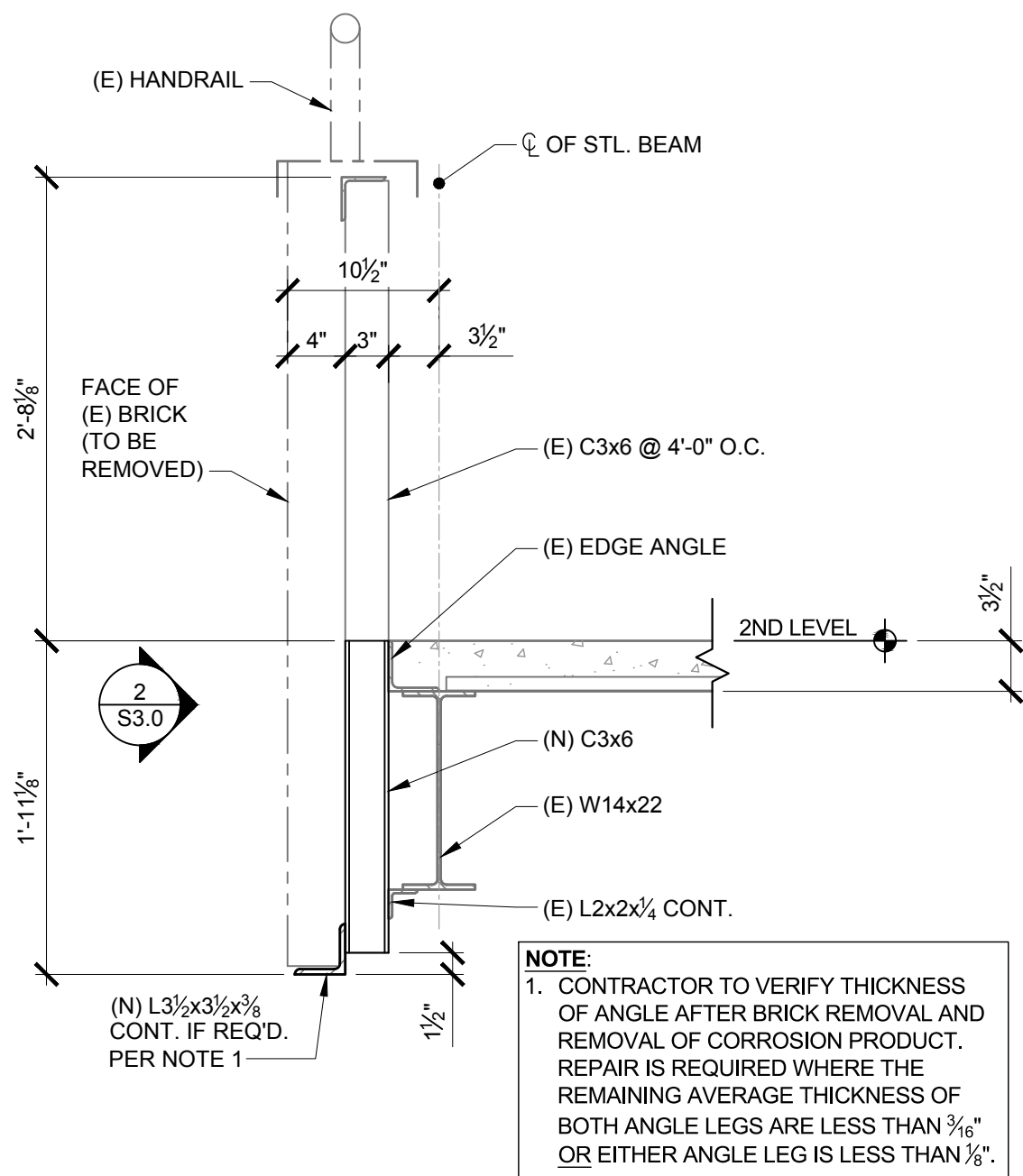
**WATERPROOFING
PLANS**

Sheet Title

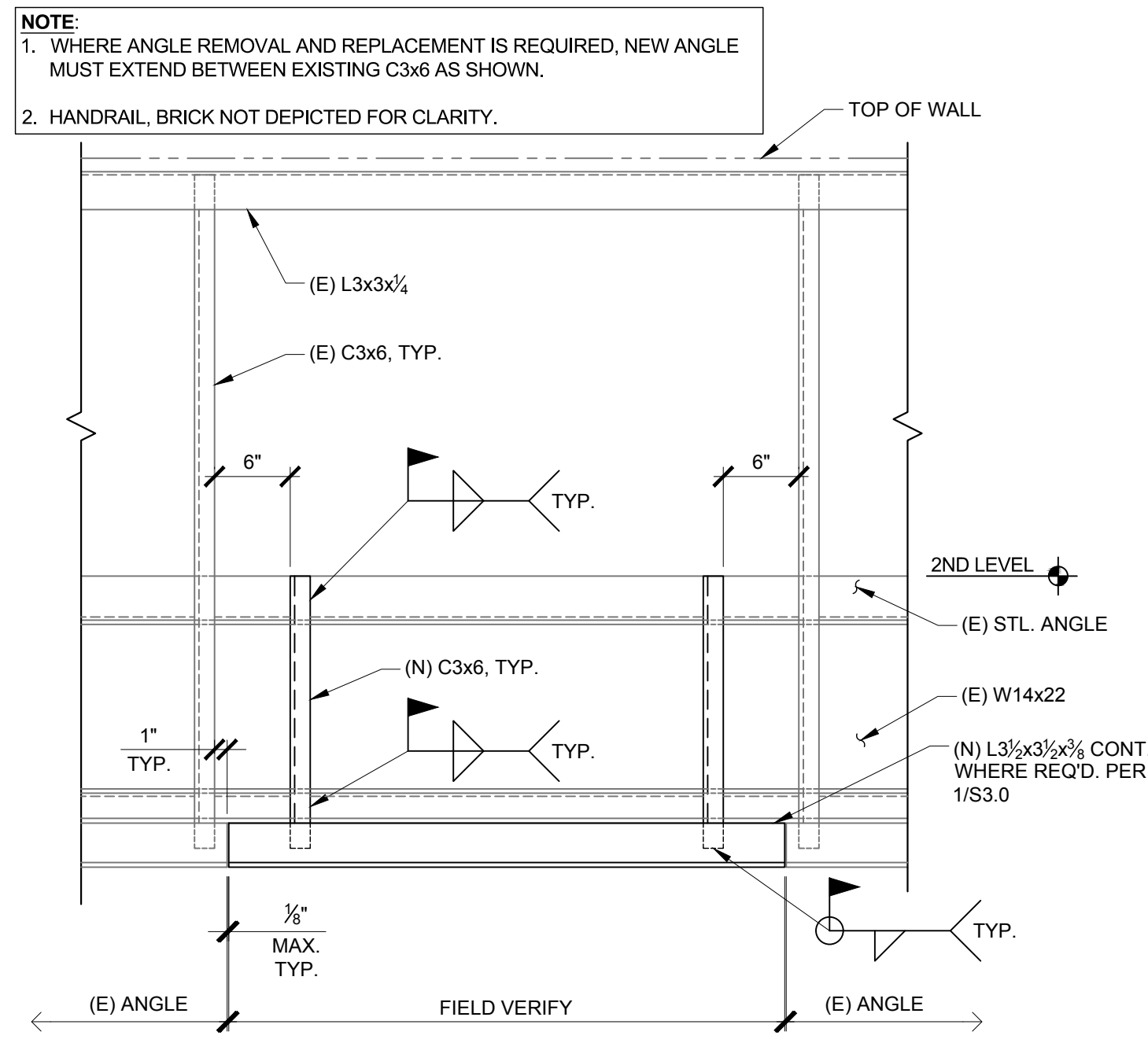
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S2.1

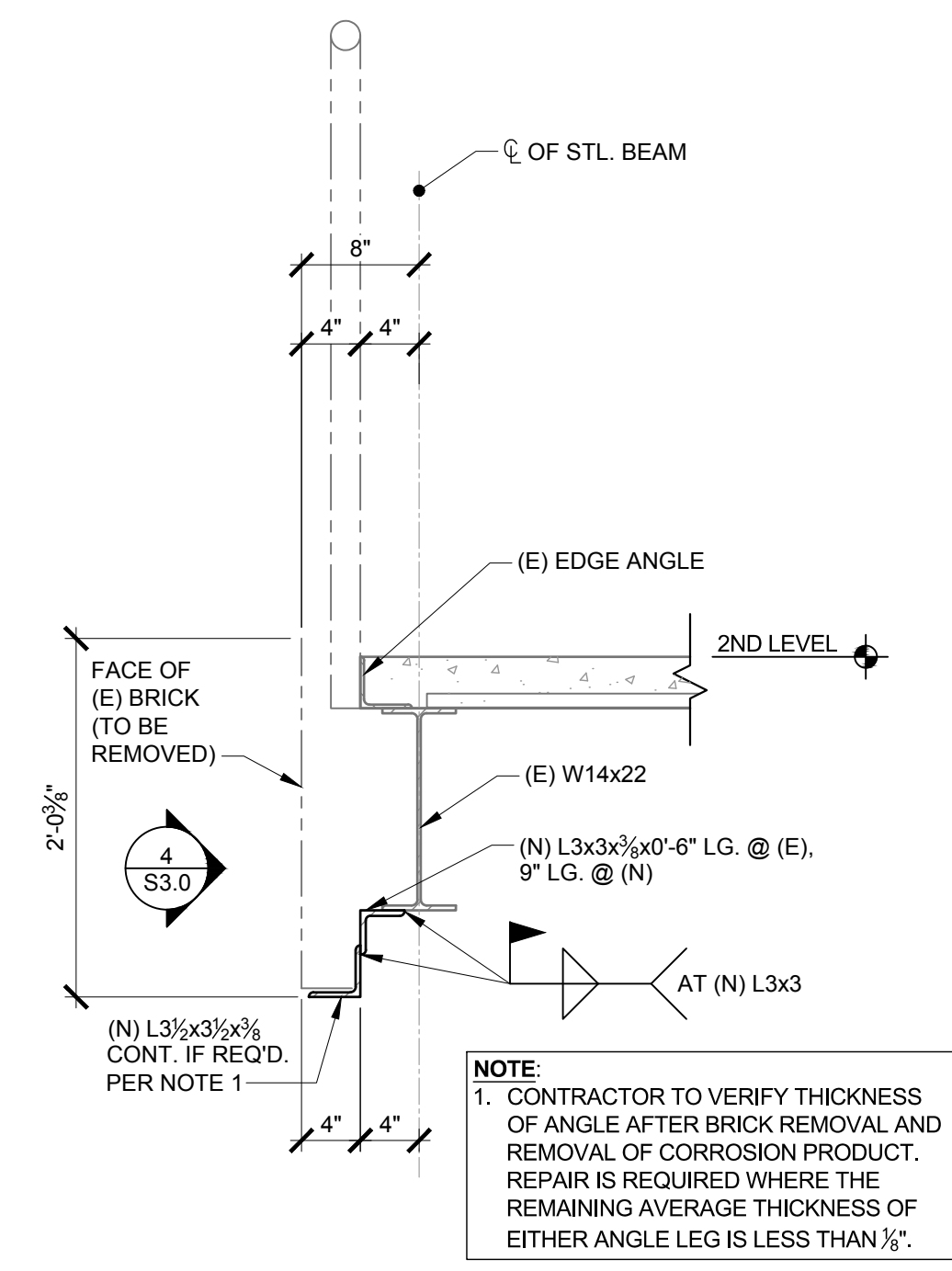
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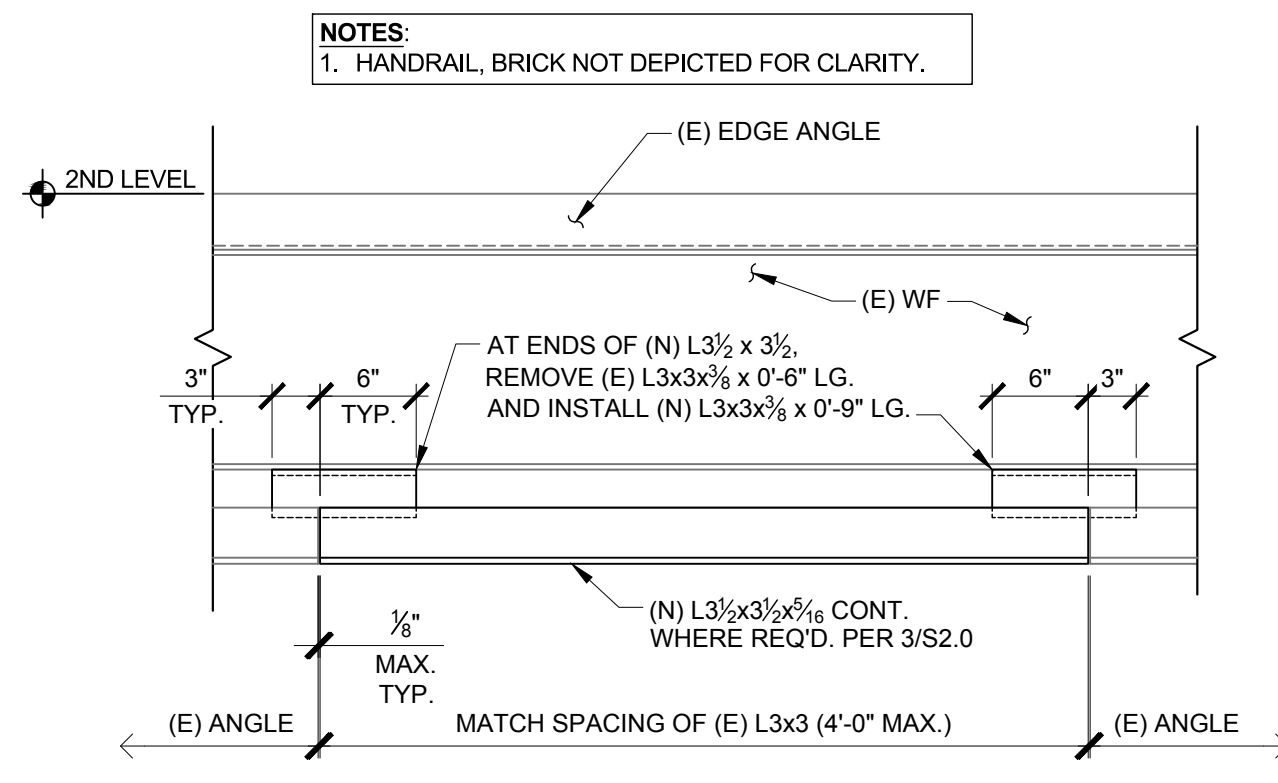
1 SECT. - SHELF ANGLE REPAIR @ WALKWAY EXT.
SCALE: 1" = 1'-0"



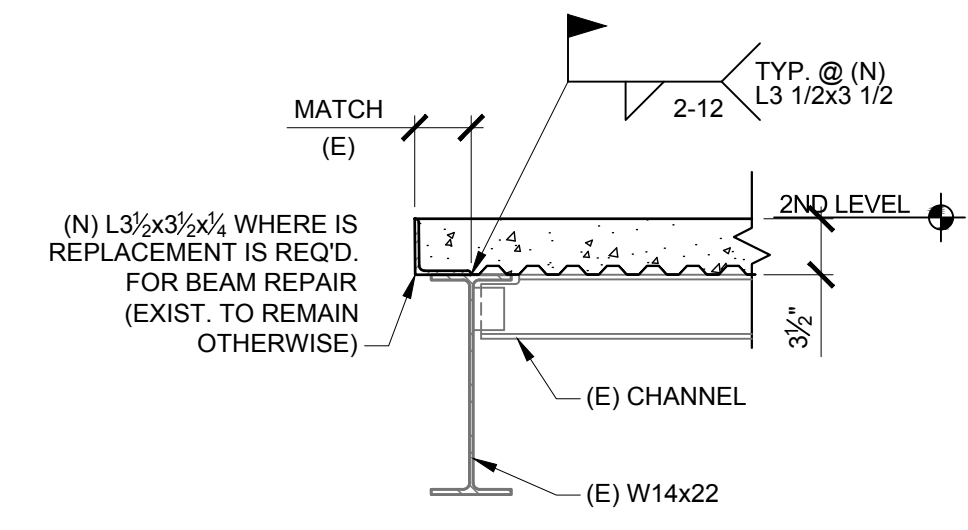
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SCALE: 1" = 1'-0"



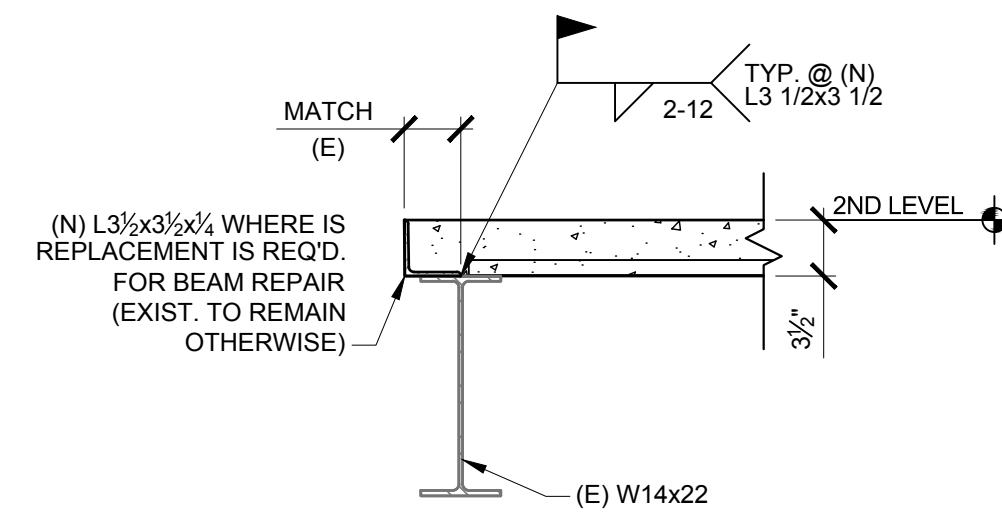
3 SECT. - SHELF ANGLE REPAIR @ WALKWAY INT.
SCALE: 1" = 1'-0"



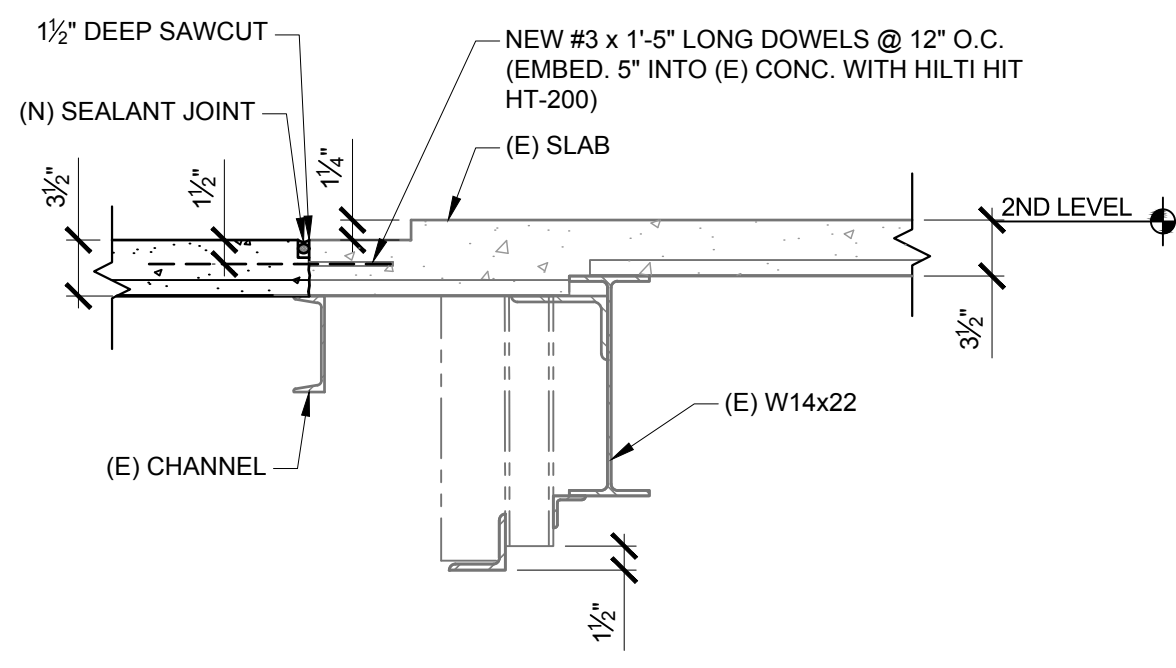
4 ELEV. - SHELF ANGLE REPAIR @ WALKWAY INT.
SCALE: 1" = 1'-0"



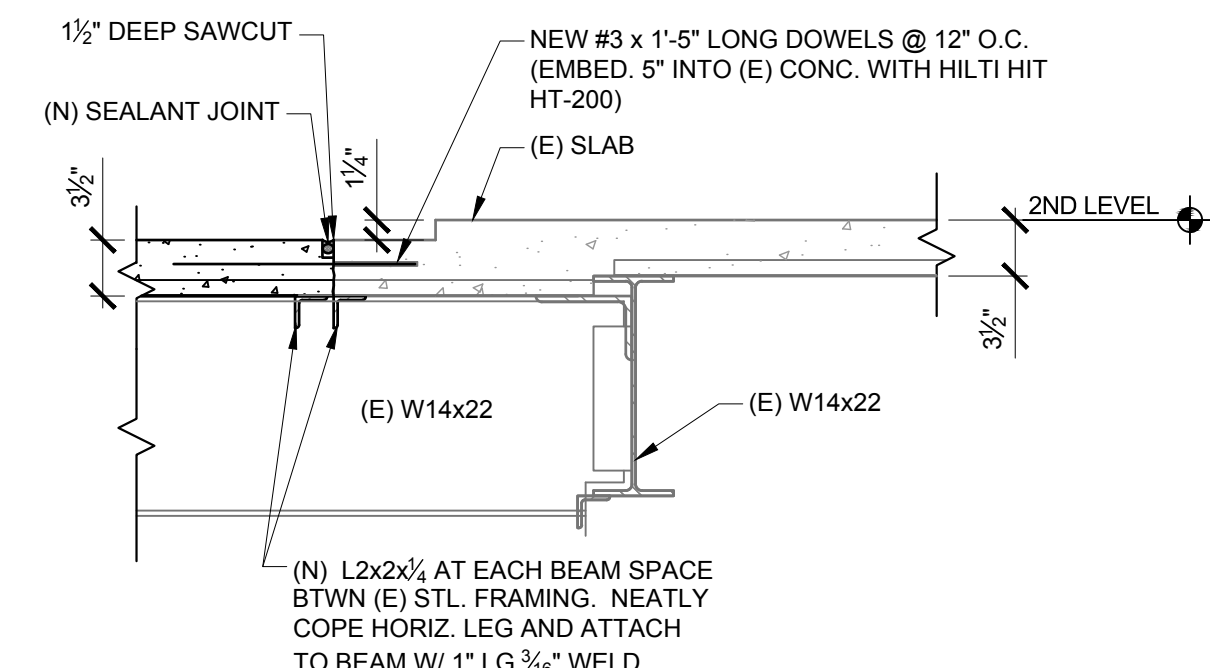
5 DECK REPLACEMENT - PERIMETER (DECK PARALLEL)
SCALE: 1" = 1'-0"



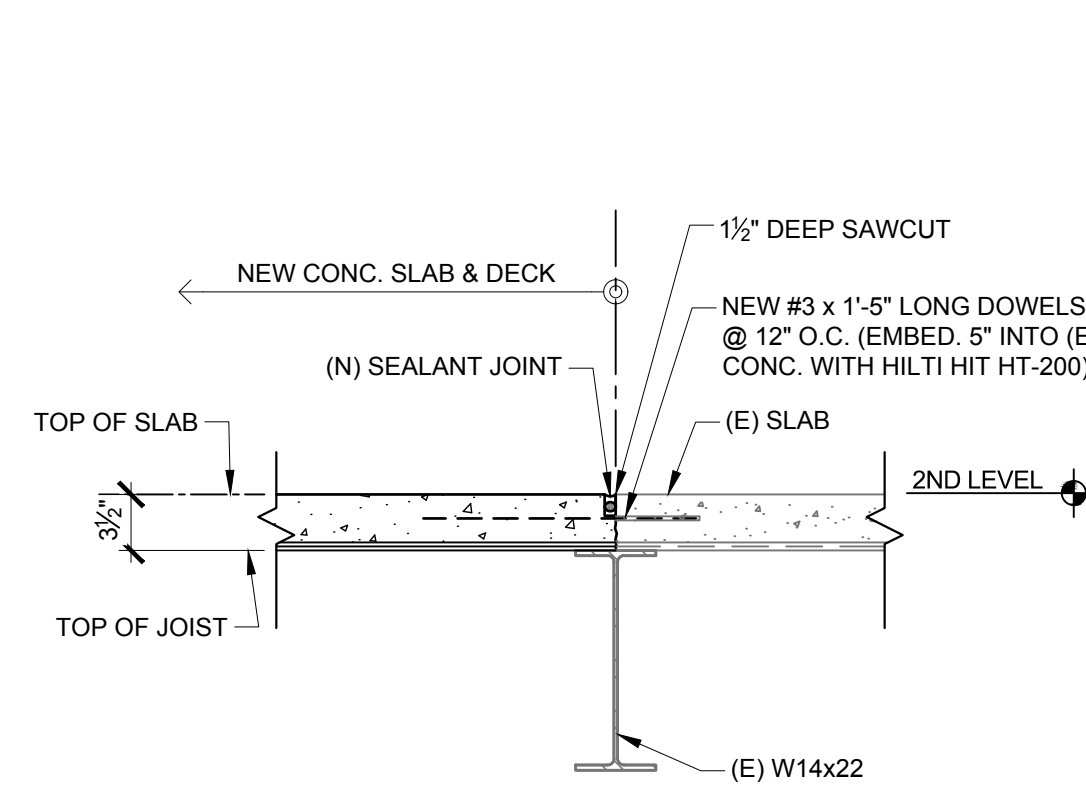
6 DECK REPLACEMENT - PERIMETER (DECK PERPENDICULAR)
SCALE: 1" = 1'-0"



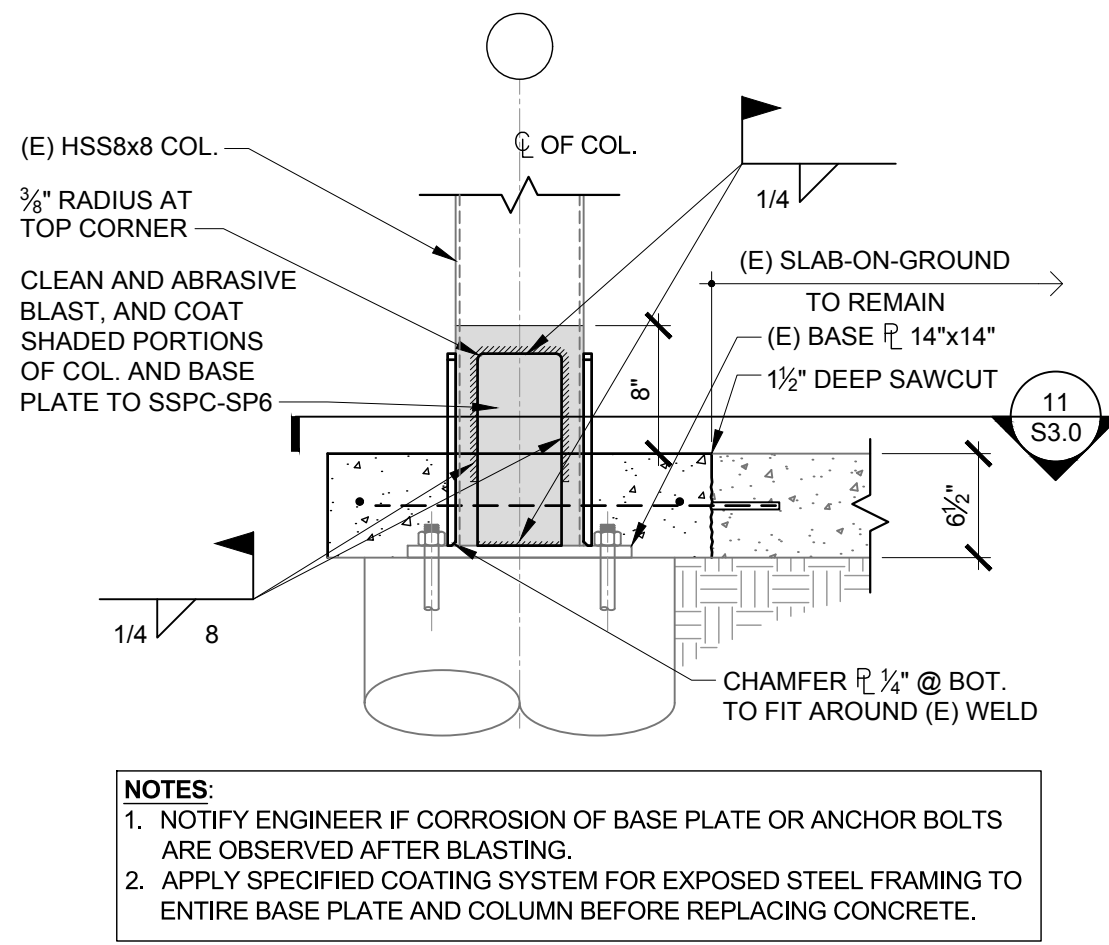
7 DECK REPLACEMENT @ FACE OF BUILDING (CHANNEL PARALLEL TO BLDG.)
SCALE: 1" = 1'-0"



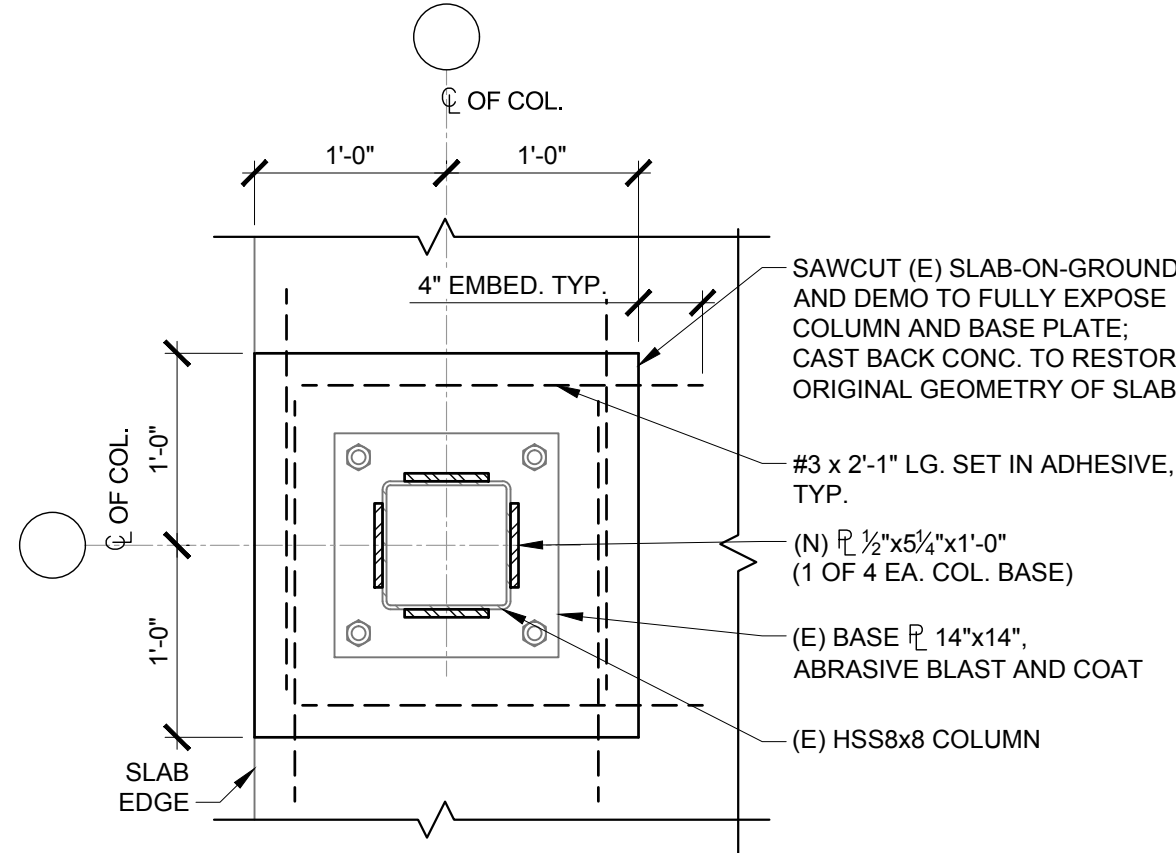
8 DECK REPLACEMENT @ FACE OF BUILDING (BEAM PERPENDICULAR TO BLDG.)
SCALE: 1" = 1'-0"



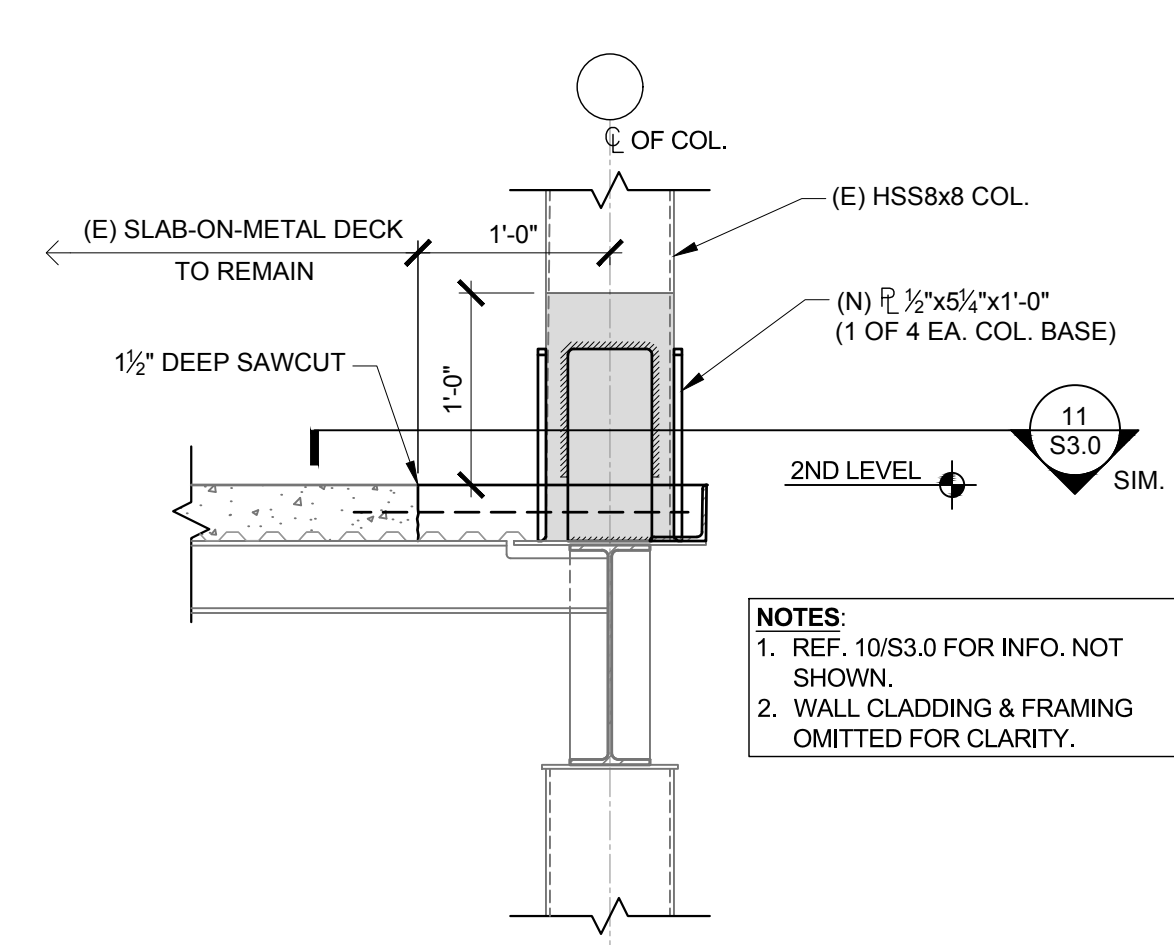
9 DECK REPLACEMENT - BEAM PARALLEL TO JOINT
SCALE: 1" = 1'-0"



10 COLUMN REPAIR - 1ST LEVEL SECTION
SCALE: 1" = 1'-0"



11 COLUMN REPAIR - 1ST LEVEL PLAN
SCALE: 1" = 1'-0"



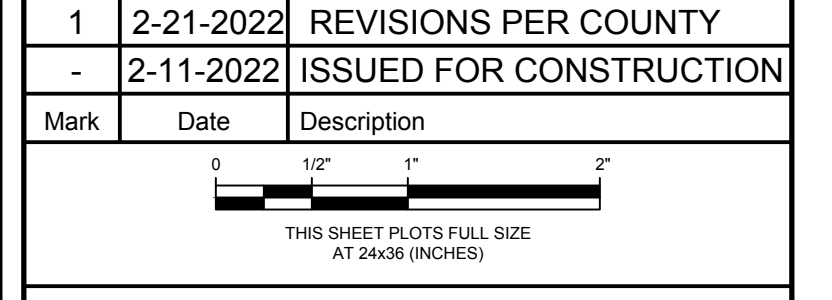
12 COLUMN REPAIR - 2ND LEVEL SECTION
SCALE: 1" = 1'-0"

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Consultants
 Project
Structural & Waterproofing Repairs to Exterior Walkway
 900 E. Park Blvd.
 Plano, TX 75074
 Client
Collin County, Texas
 4600 Community Avenue
 McKinney, TX 75071

Mark	Date	Description
1	2-21-2022	REVISIONS PER COUNTY
-	2-11-2022	ISSUED FOR CONSTRUCTION

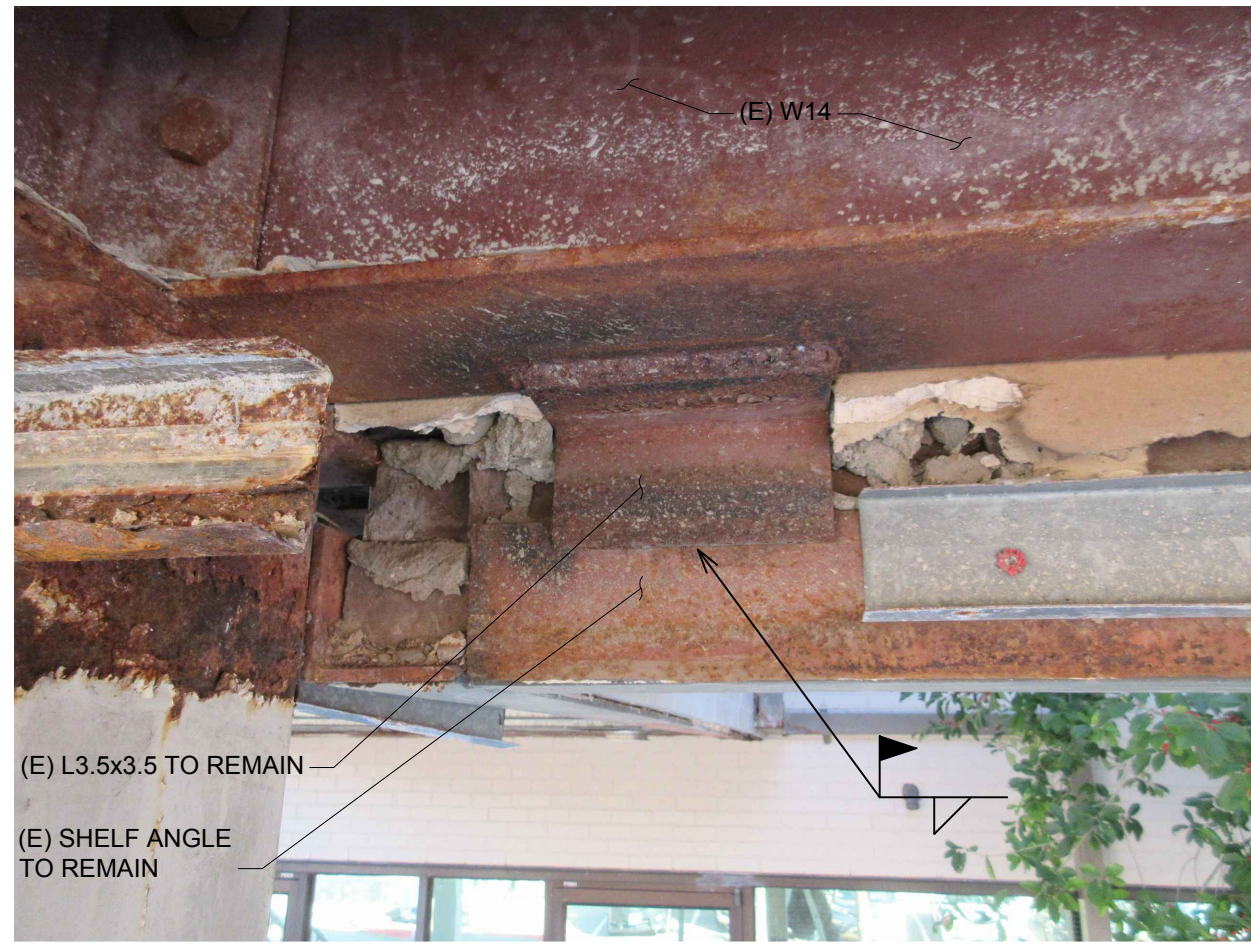


Project No. 2020.6756.1
 Date 2-11-2022
 Drawn TJH
 Checked SVG/PBL
 Scale As Noted

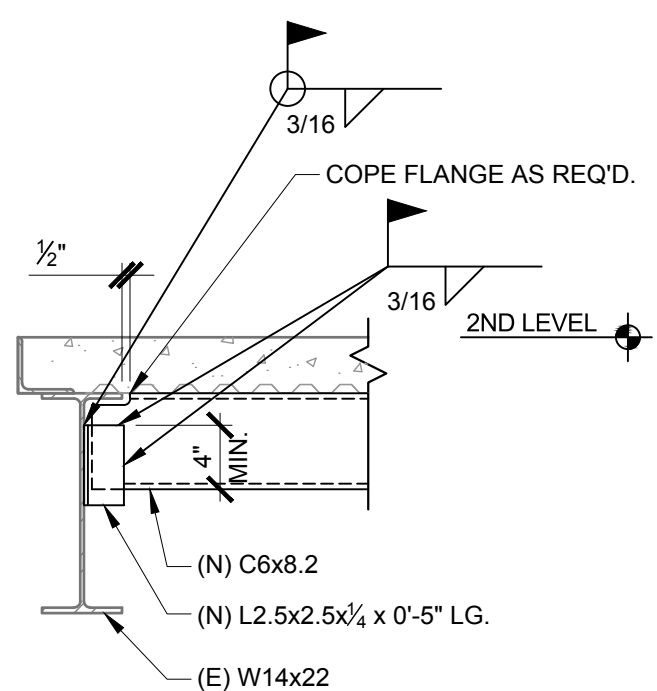
STRUCTURAL DETAILS
 Sheet Title
 Sheet No. **S3.0**

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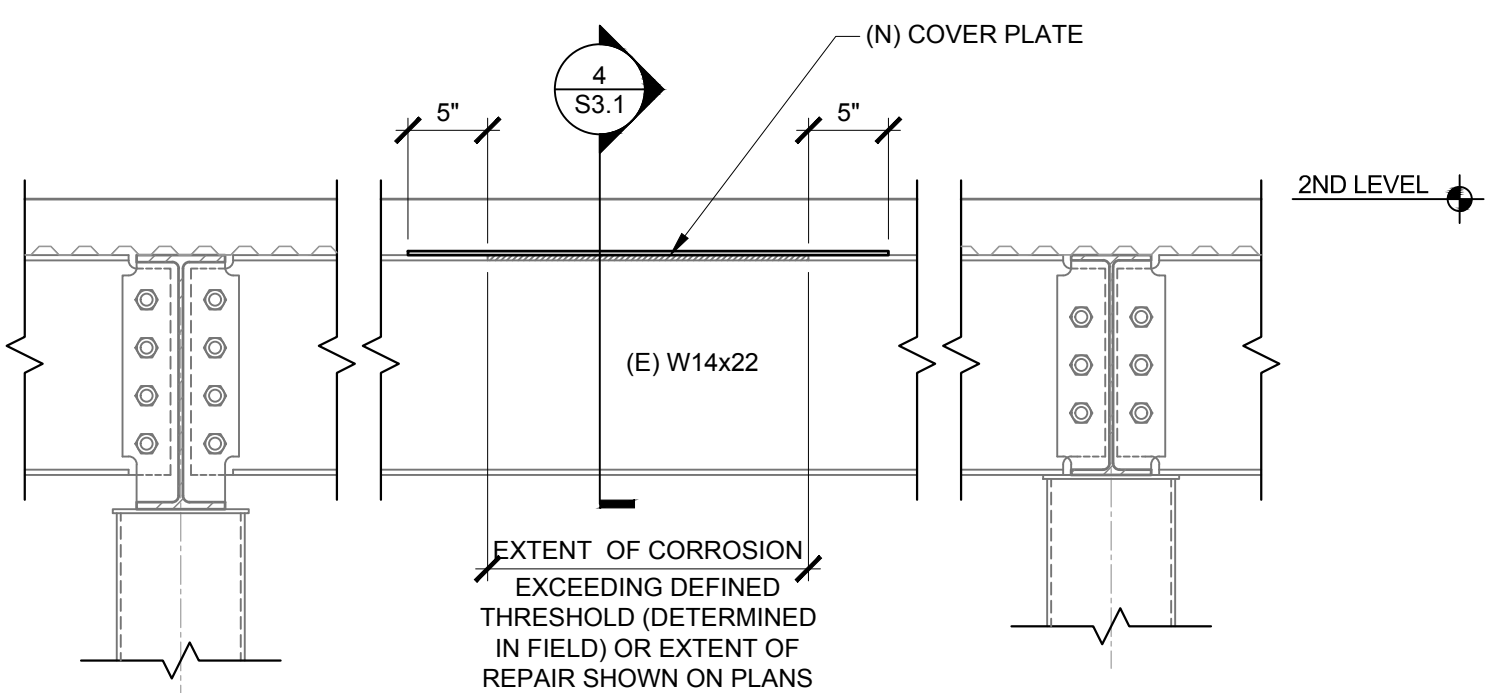
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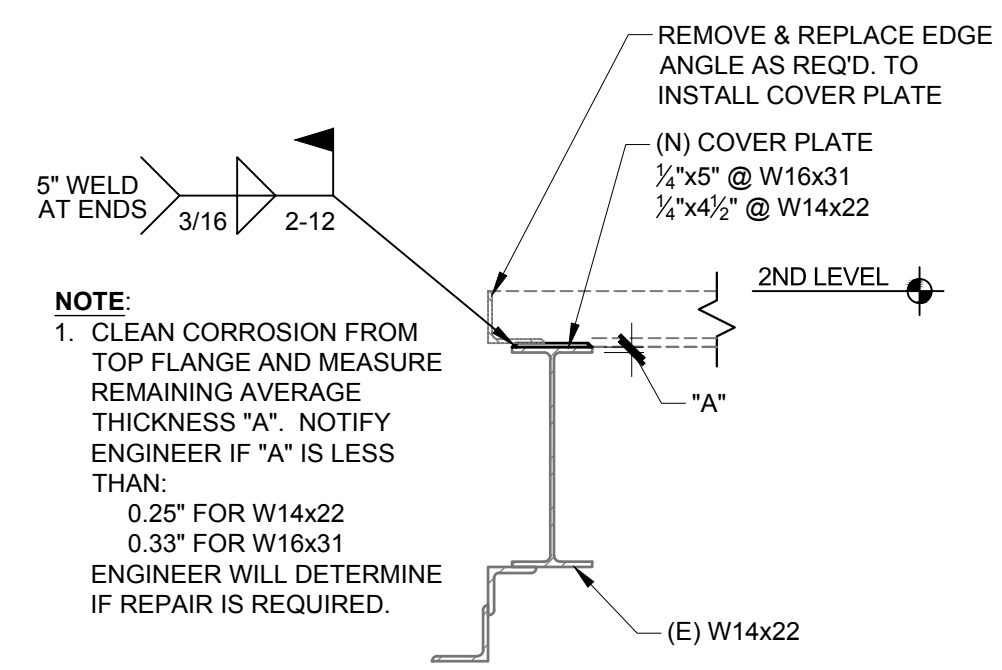
1 WELD AT UNWELDED SHELF ANGLE CONNECTION
SCALE: N.T.S.



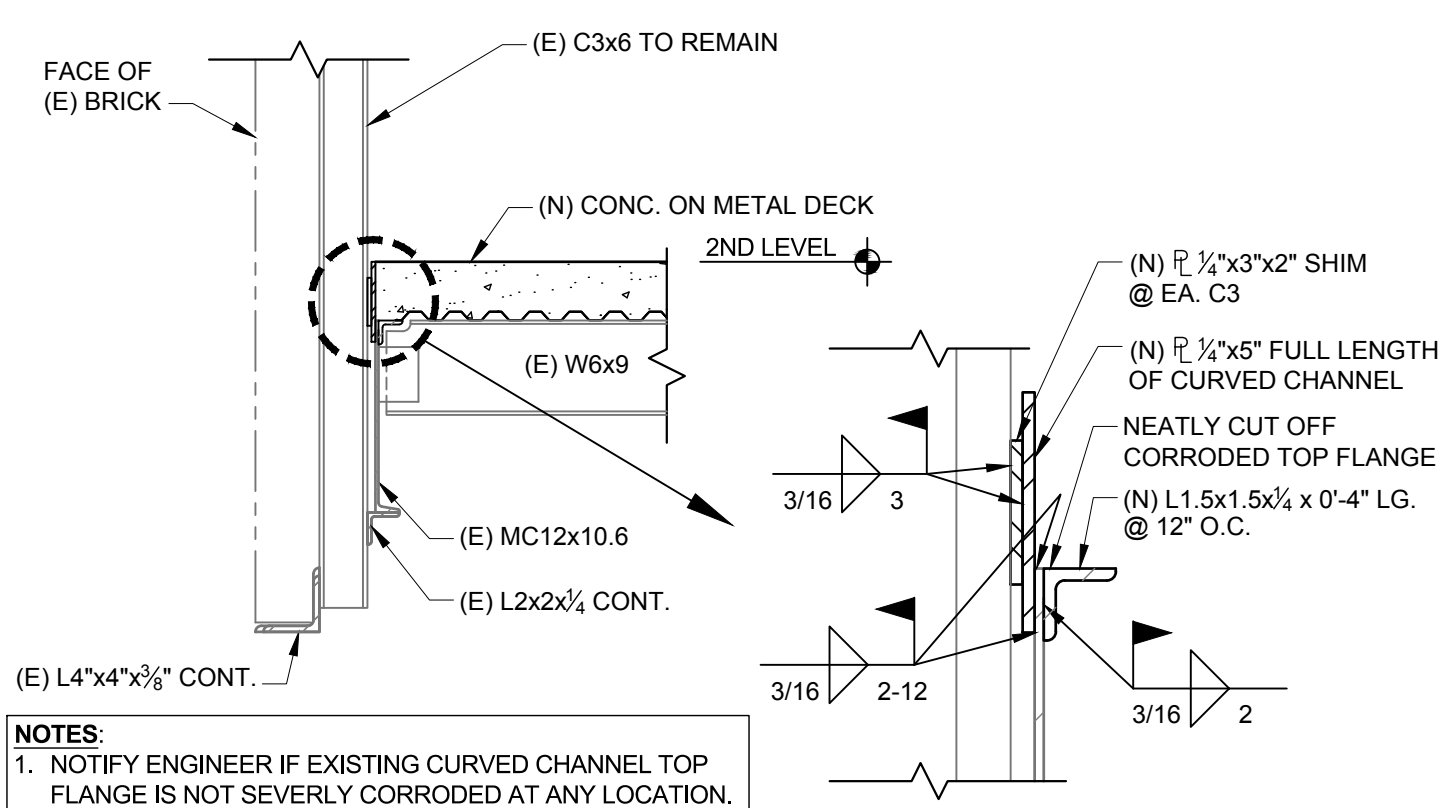
2 END CONNECTION @ NEW C6
SCALE: 1" = 1'-0"



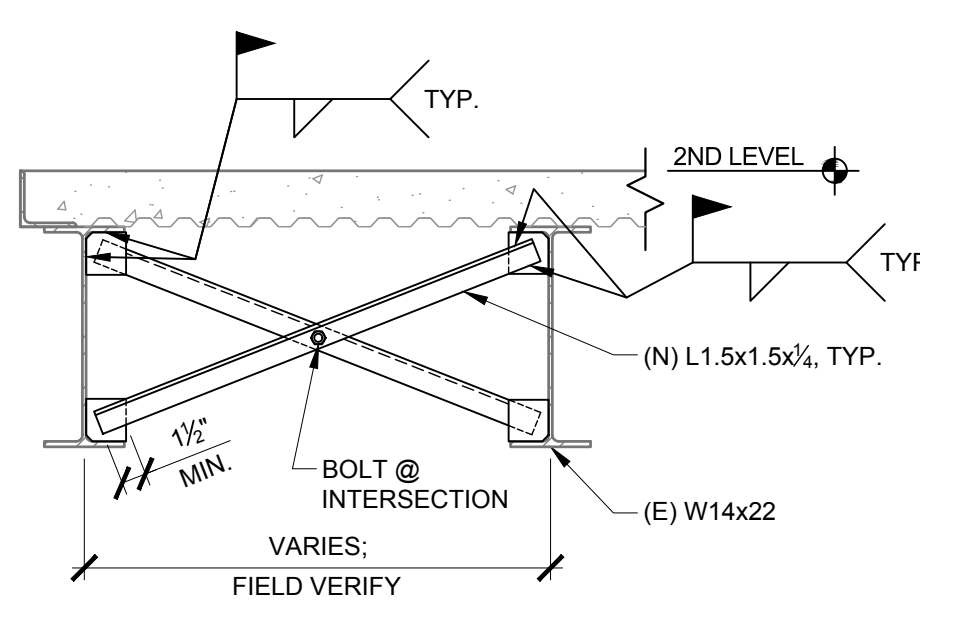
3 ELEV. - TYPICAL BEAM STRENGTHENING @ DECK TO BE REMOVED
SCALE: 1" = 1'-0"



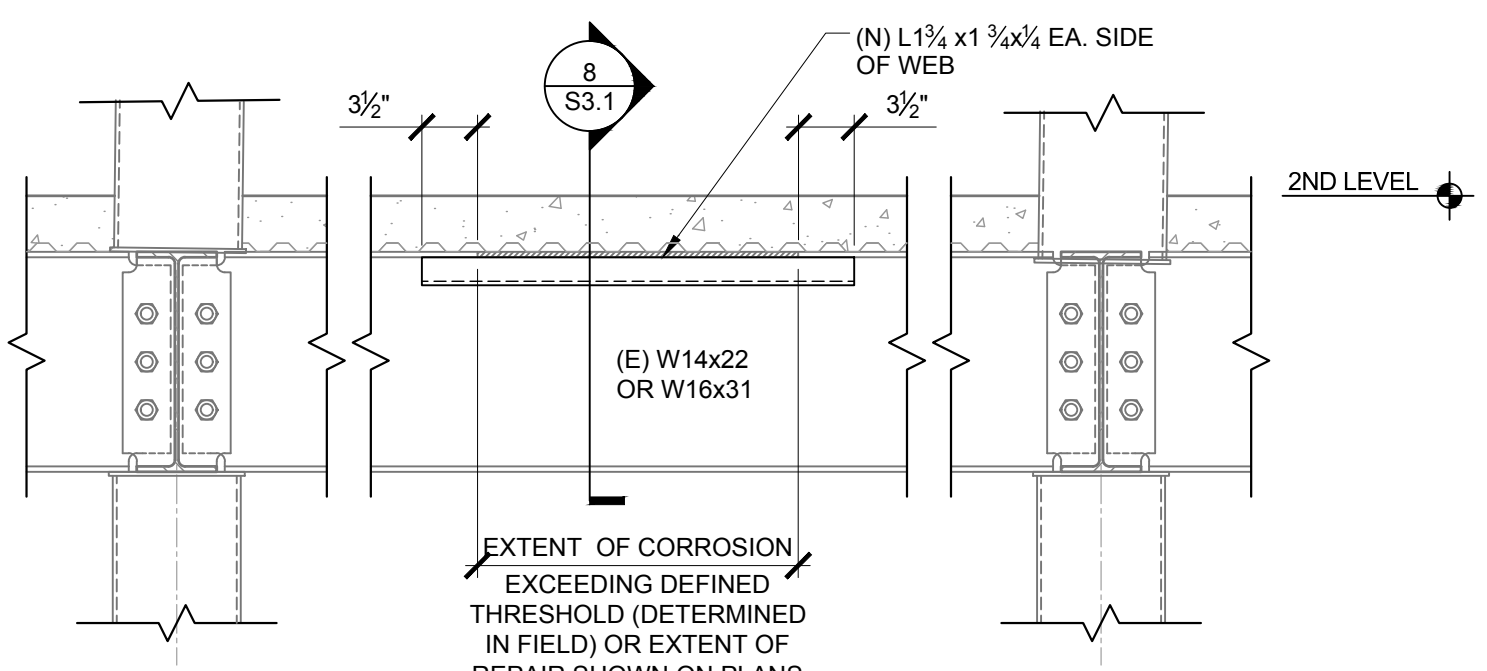
4 SECT. - TYPICAL BEAM STRENGTHENING @ DECK TO BE REMOVED
SCALE: 1" = 1'-0"



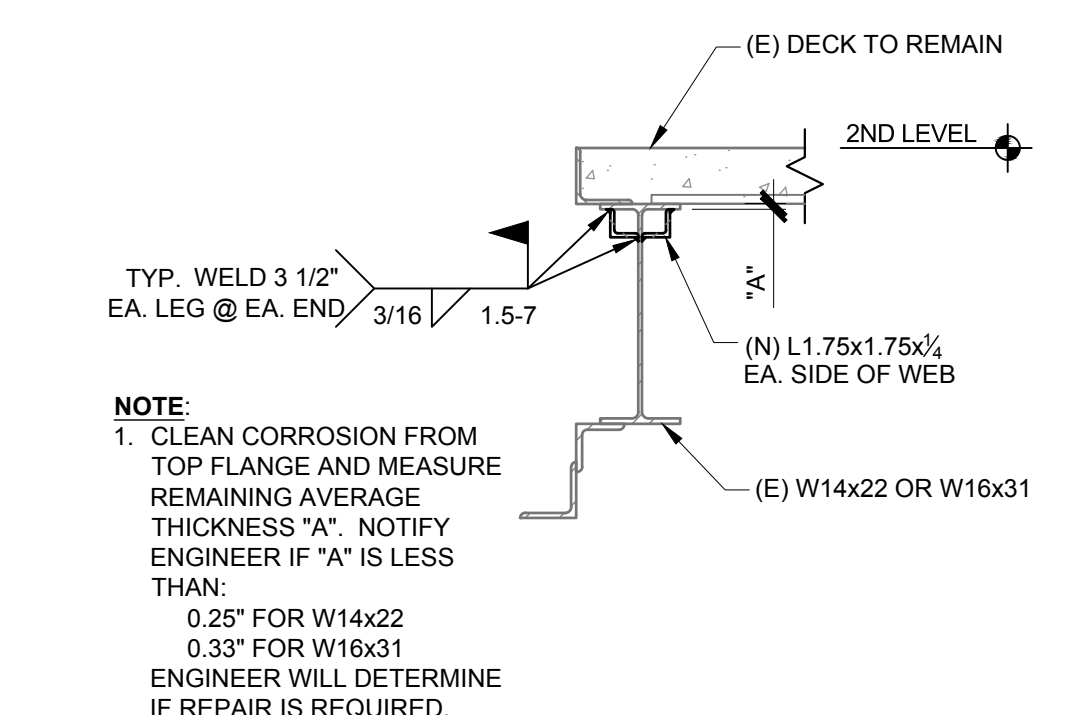
5 REPAIR @ CURVED CHANNEL - SOUTHWEST CORNER
SCALE: 1" = 1'-0"



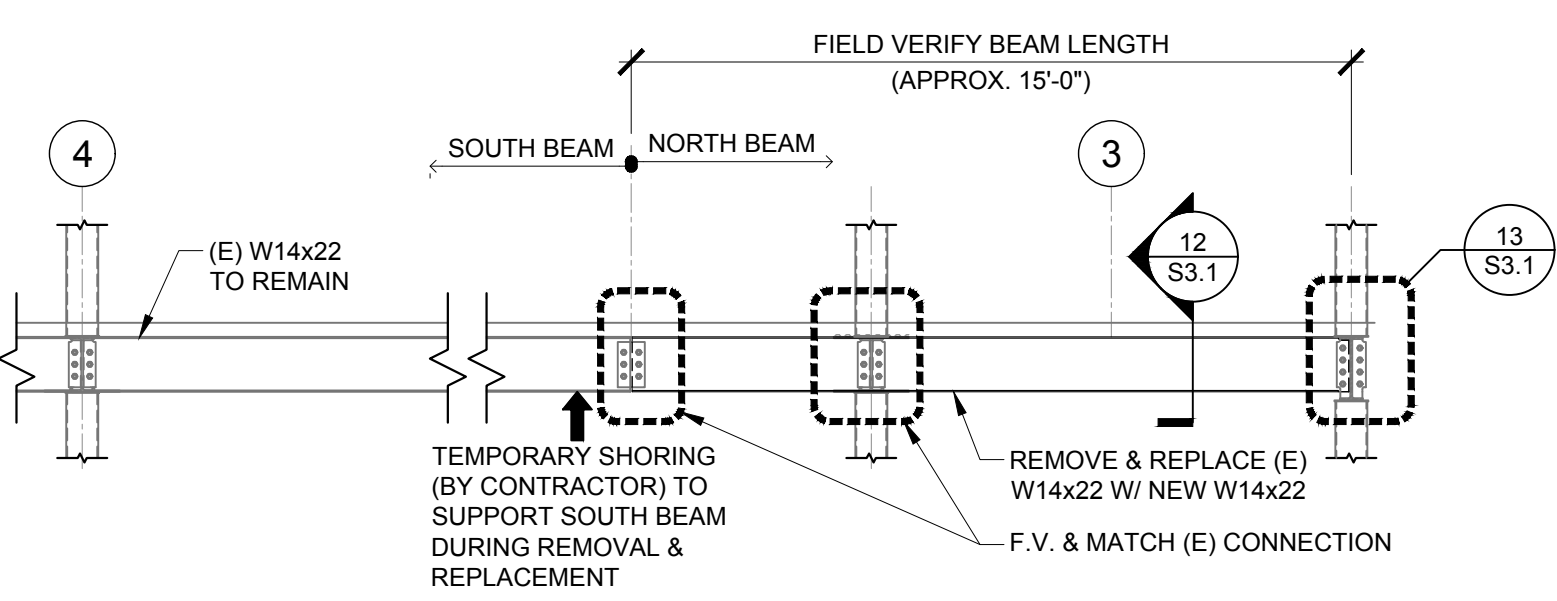
6 NEW BEAM BRACING
SCALE: 1" = 1'-0"



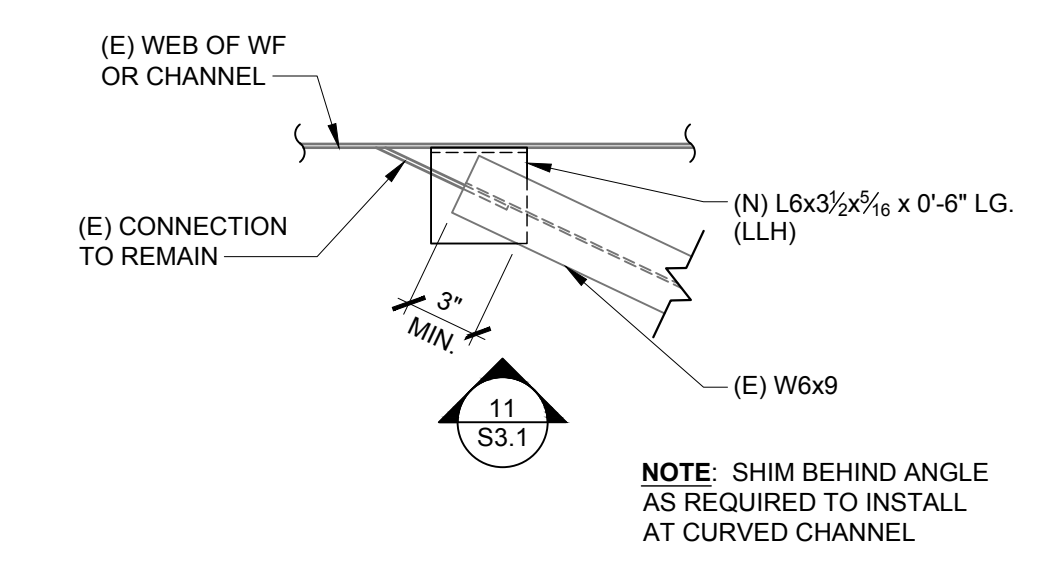
7 BEAM STRENGTHENING @ EXISTING DECK
SCALE: 1" = 1'-0"



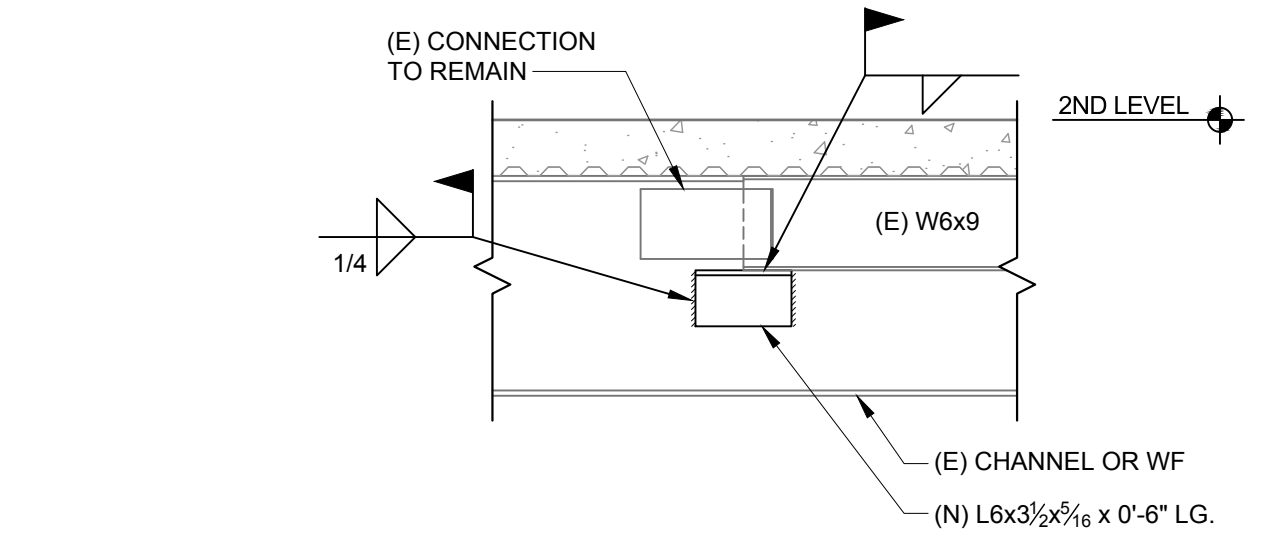
8 BEAM STRENGTHENING @ EXISTING DECK SECTION
SCALE: 1" = 1'-0"



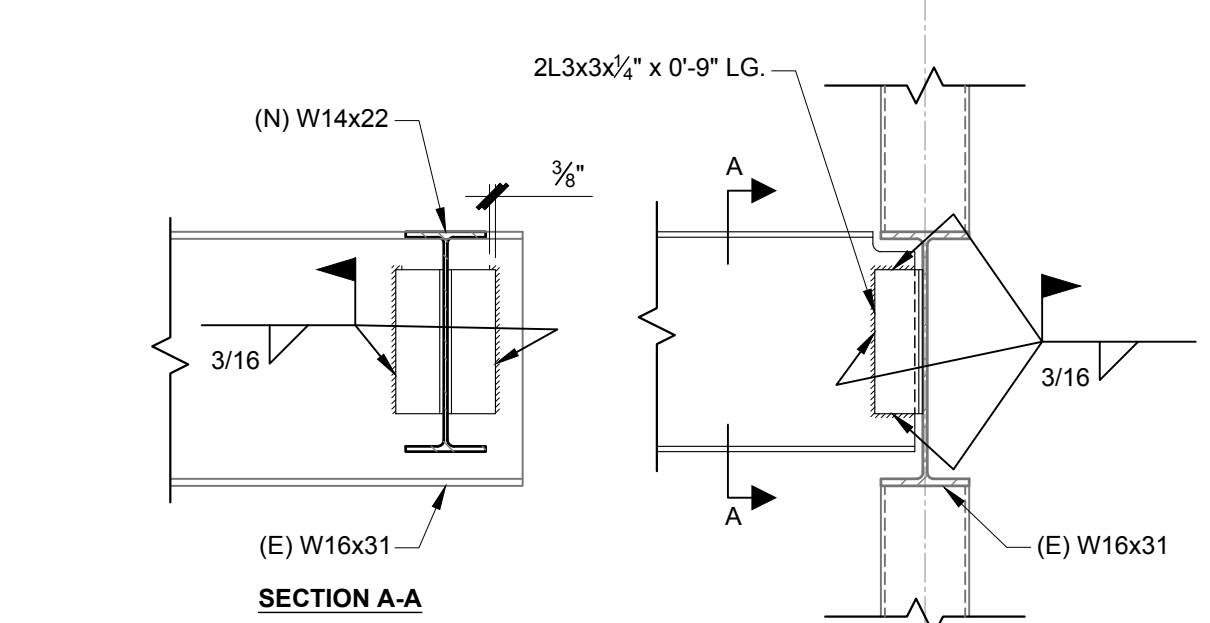
9 REPLACEMENT BEAM ELEVATION
SCALE: 1/4" = 1'-0"



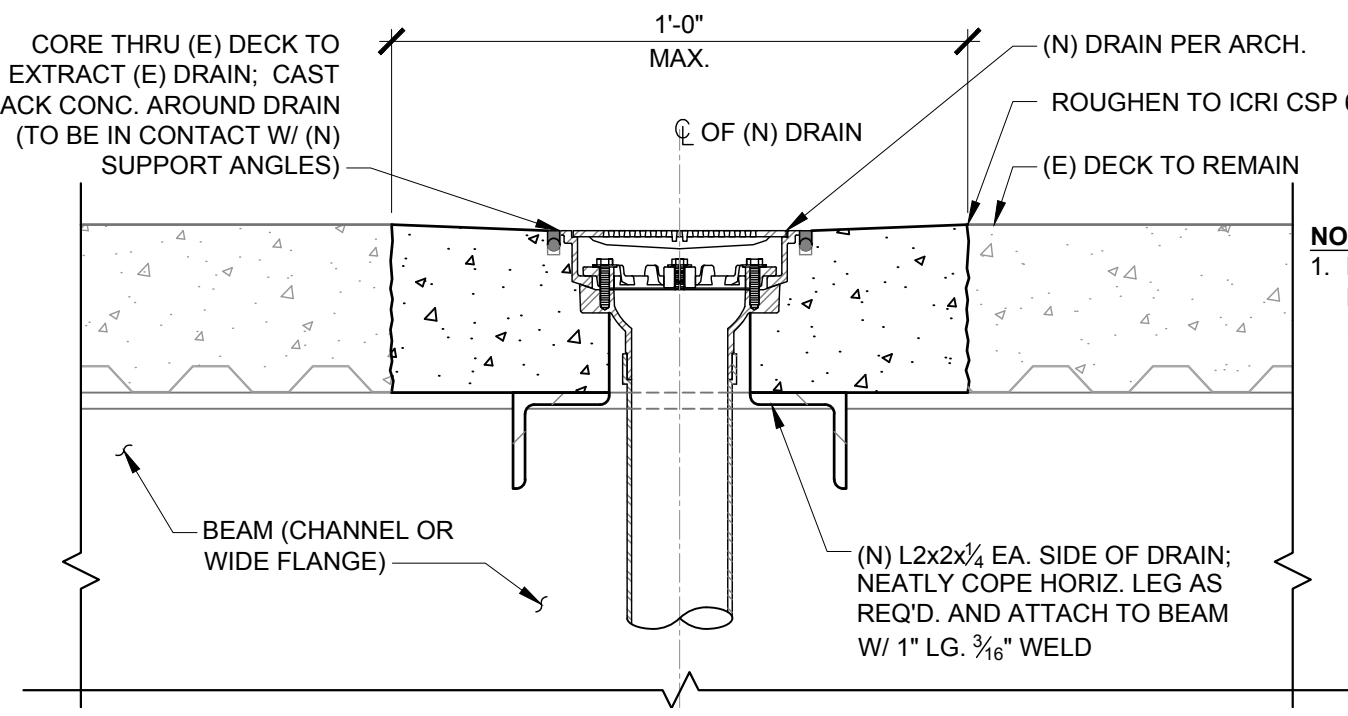
10 NEW STEEL ANGLE SUPPORT @ W6 BEAM PLAN
SCALE: 1" = 1'-0"



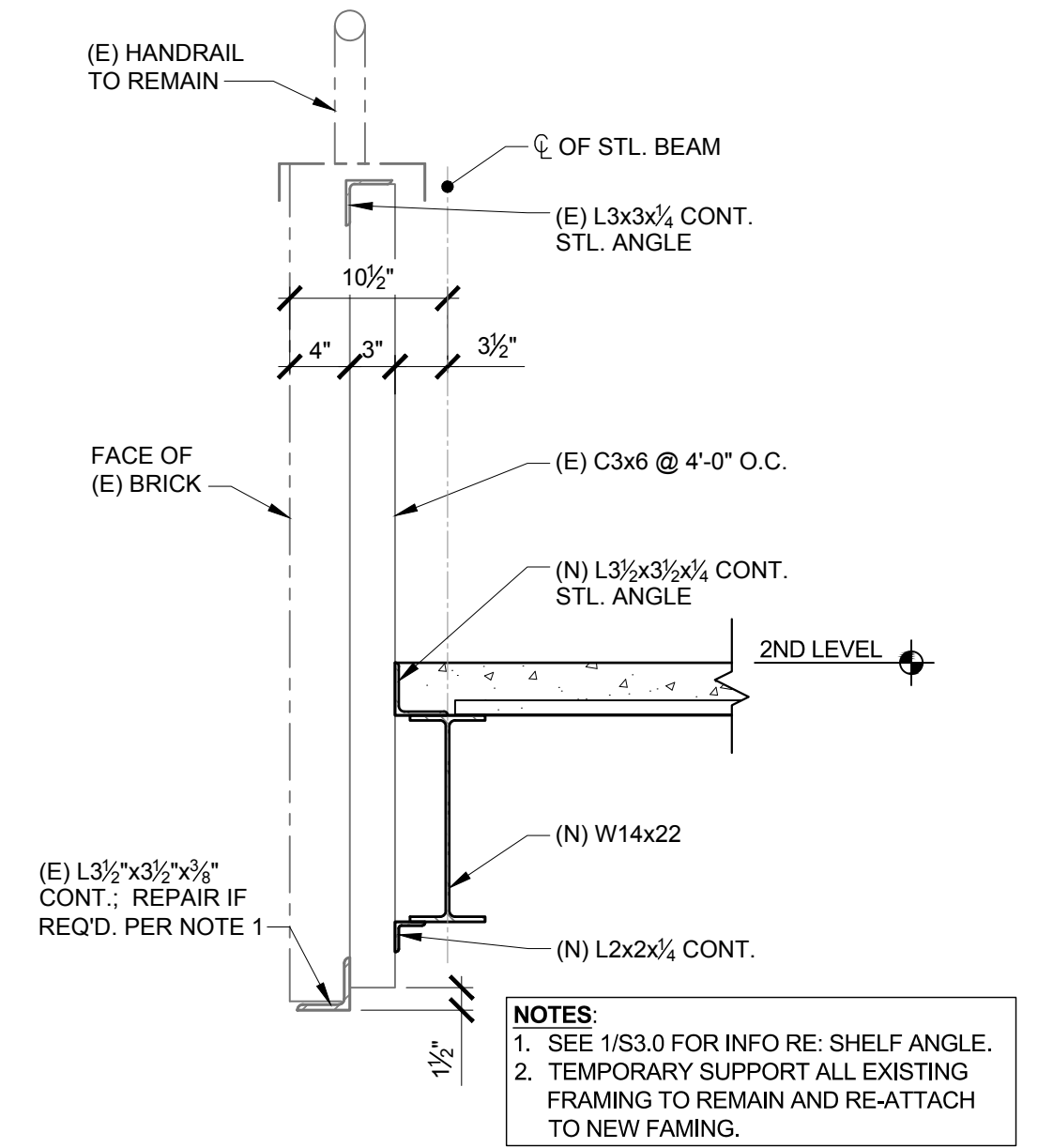
11 NEW STEEL ANGLE SUPPORT @ W6 BEAM ELEVATION
SCALE: 1" = 1'-0"



13 NEW BEAM-TO-EXISTING CONNECTION
SCALE: 1" = 1'-0"



14 SUPPORT FOR NEW DRAINS
SCALE: 3" = 1'-0"



12 NEW BEAM REPLACEMENT DETAIL
SCALE: 1" = 1'-0"

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Seal

Stephen V. Grelle
2-11-2022

Consultants

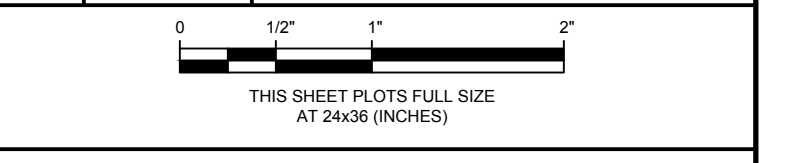
Project

Structural & Waterproofing Repairs to Exterior Walkway
900 E. Park Blvd.
Plano, TX 75074

Client

Collin County, Texas
4600 Community Avenue
McKinney, TX 75071

Mark	Date	Description
1	2-21-2022	REVISIONS PER COUNTY
-	2-11-2022	ISSUED FOR CONSTRUCTION



Project No. 2020.6756.1
Date 2-11-2022
Drawn TJH
Checked SVG/PBL
Scale As Noted

STRUCTURAL DETAILS

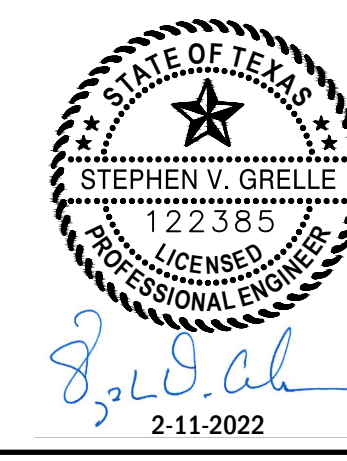
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Plano, TX 75074

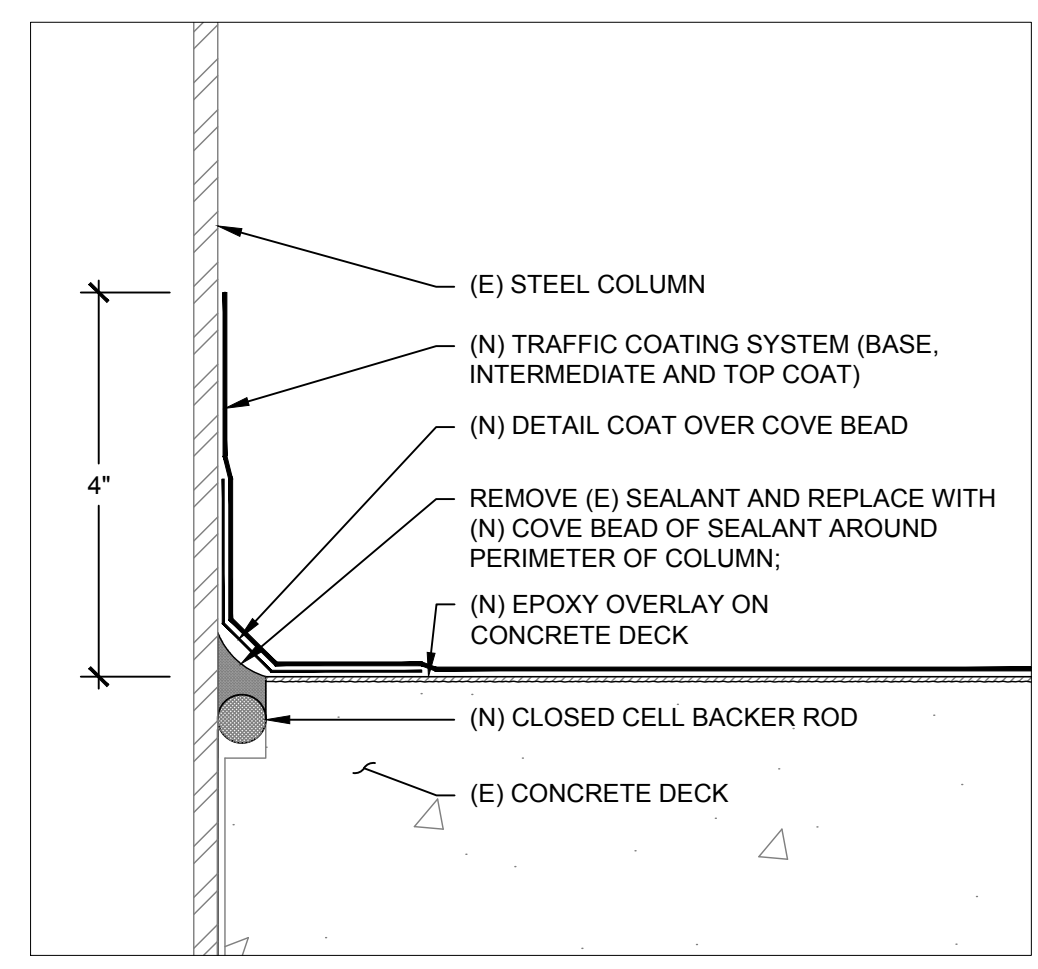
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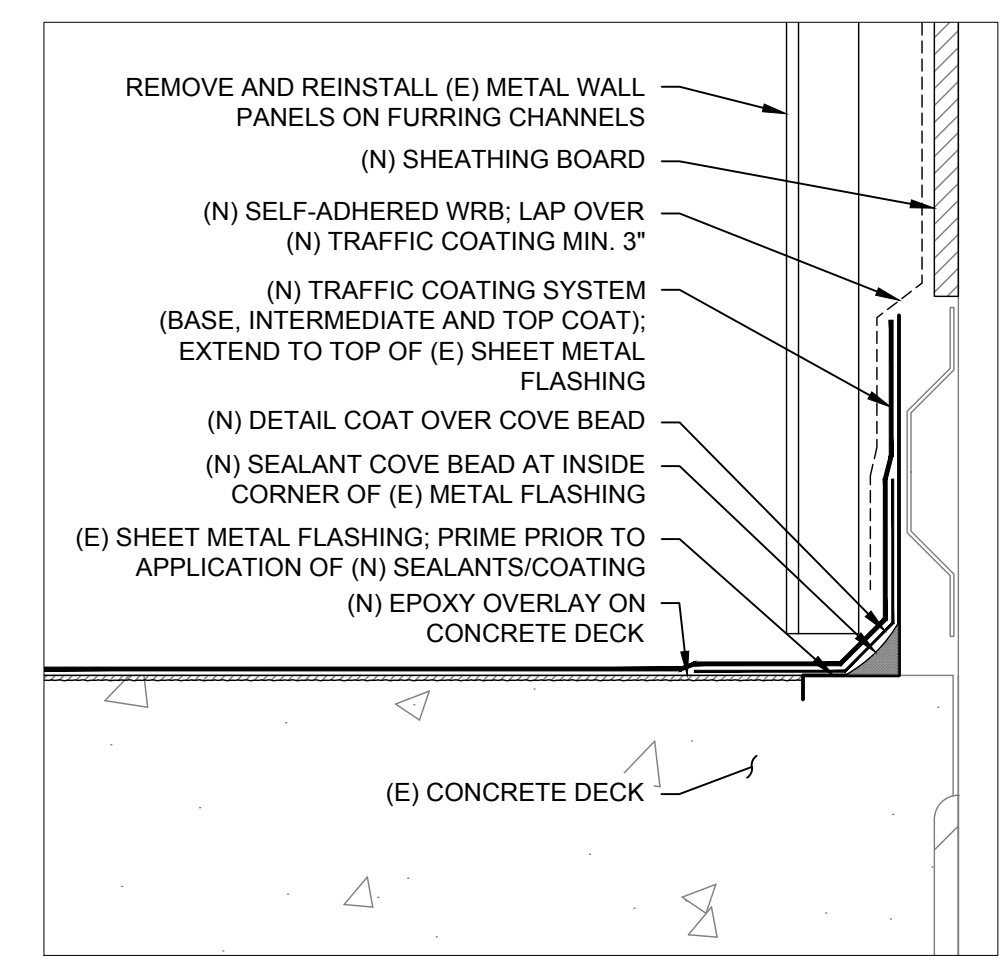
Project No. 2020.6756.1
Date 2-11-2022
Drawn TJH
Checked SVG/BCS
Scale As Noted

**WATERPROOFING
SECTIONS**

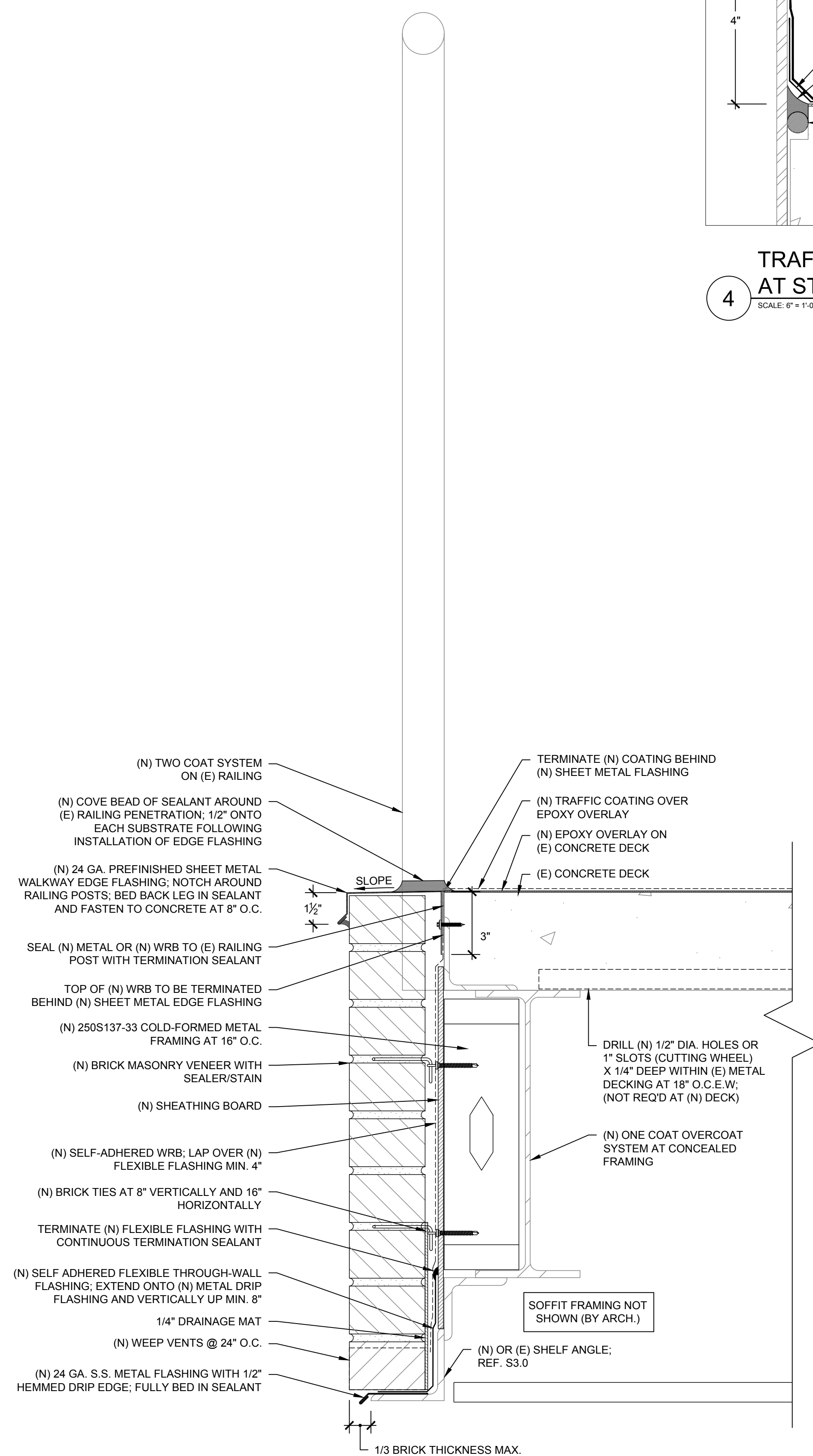
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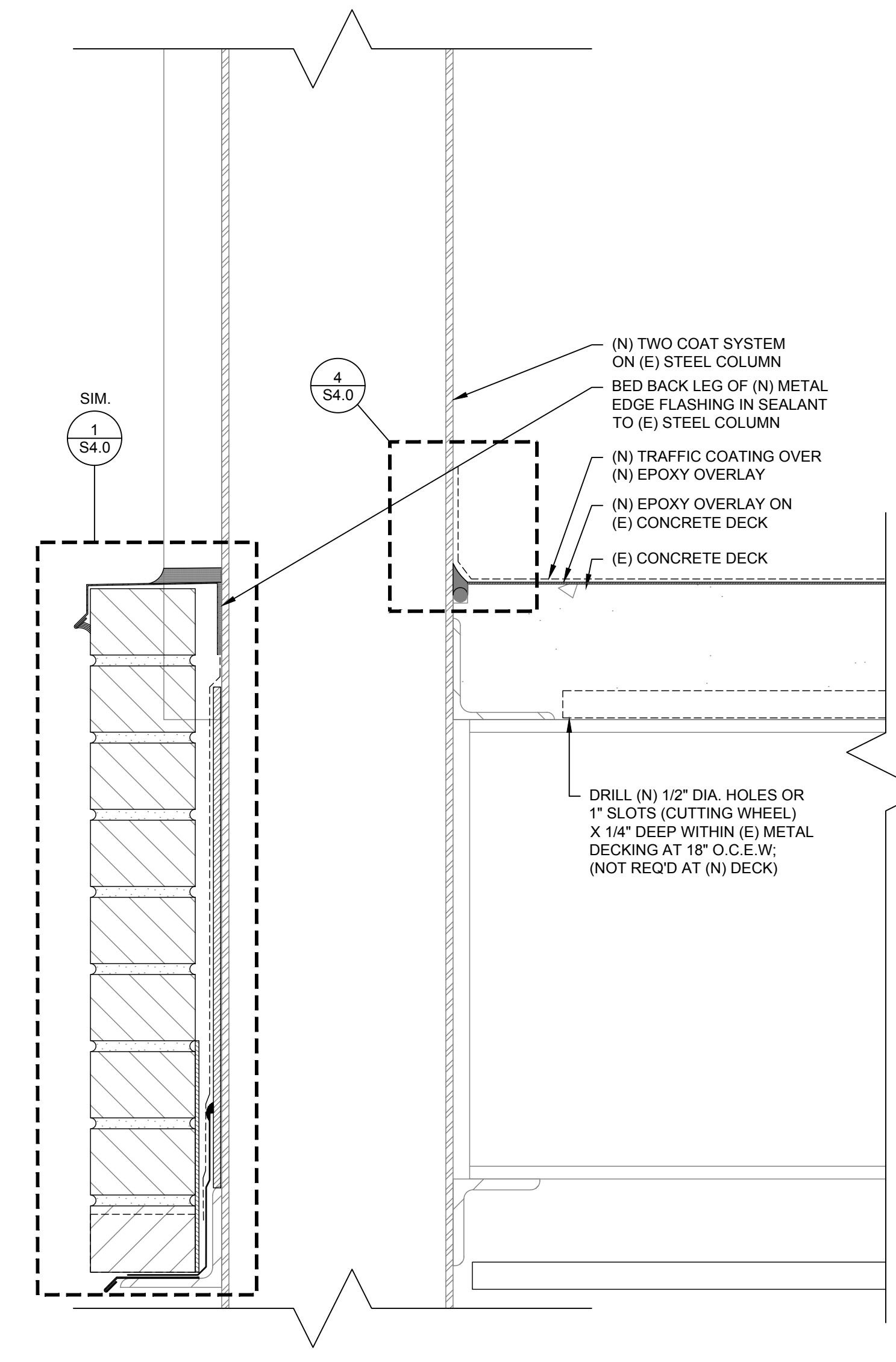
4 TRAFFIC COATING TERMINATION AT STEEL COLUMN
SCALE: 6" = 1'-0"



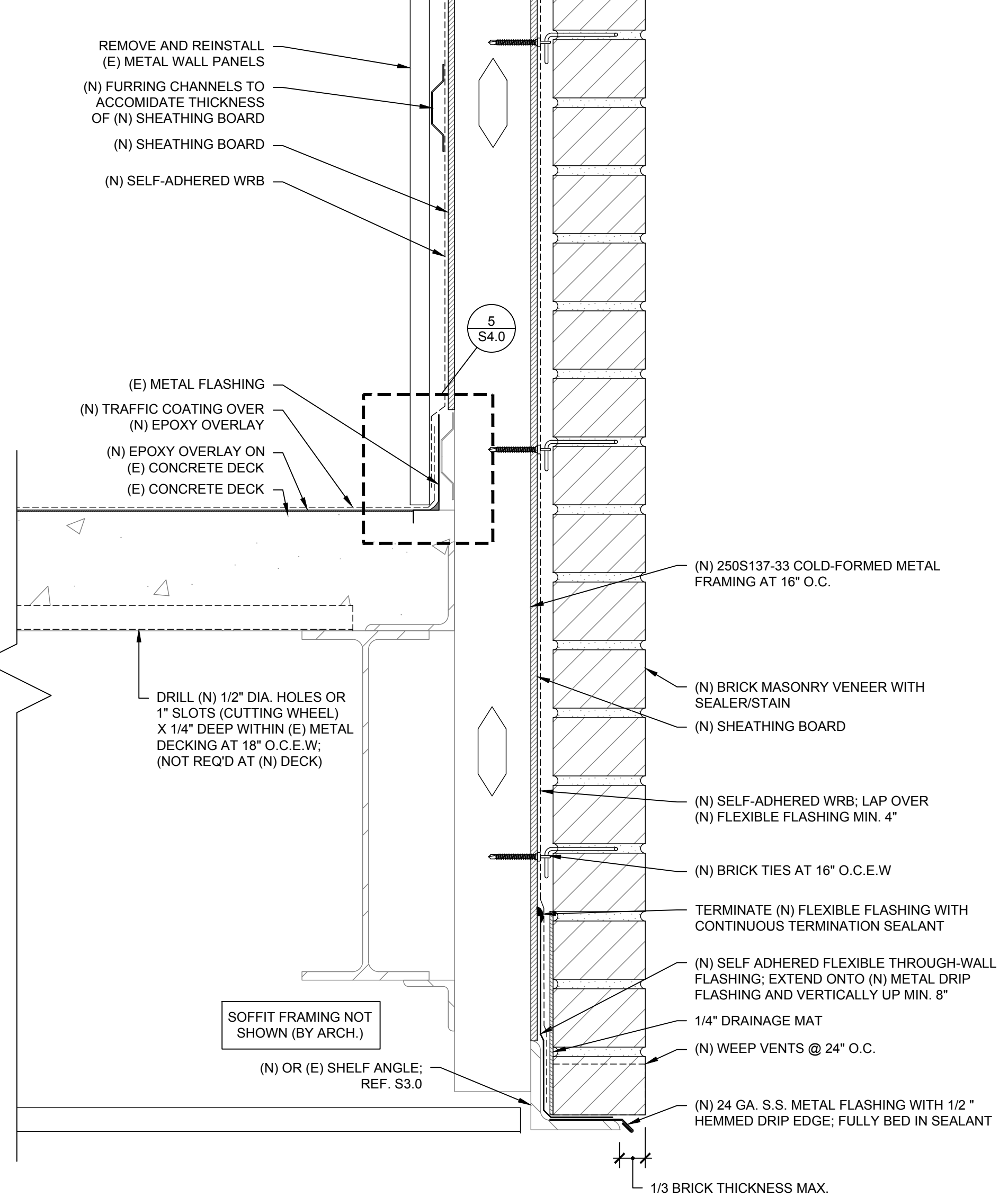
5 TRAFFIC COATING TERMINATION AT METAL PANELS
SCALE: 6" = 1'-0"



1 INNER WALKWAY SECTION
SCALE: 3" = 1'-0"



2 INSIDE WALKWAY SECTION AT COLUMN
SCALE: 3" = 1'-0"



3 OUTER WALKWAY SECTION
SCALE: 3" = 1'-0"

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Plotted: 2/22/2022 9:42 AM by Hussain, Tennessee File Name: P:\2020\2020\Temp\2020.0736.1 - 900 E PARK WALKWAY REPAIRS (S)(C)(Drawings by WJESheetsS4.1 ARCHITECTURAL DETAILS.dwg

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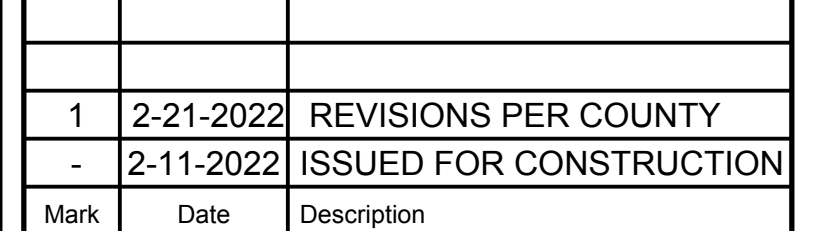
Project

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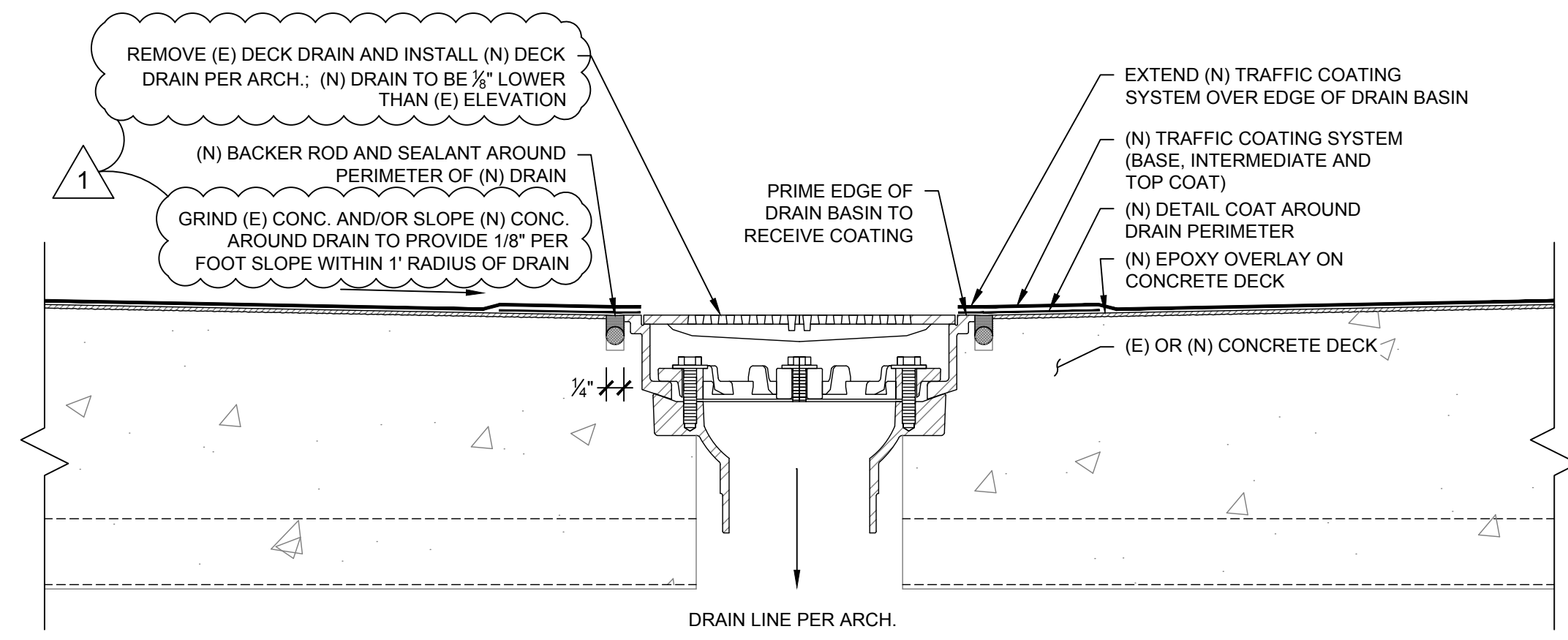
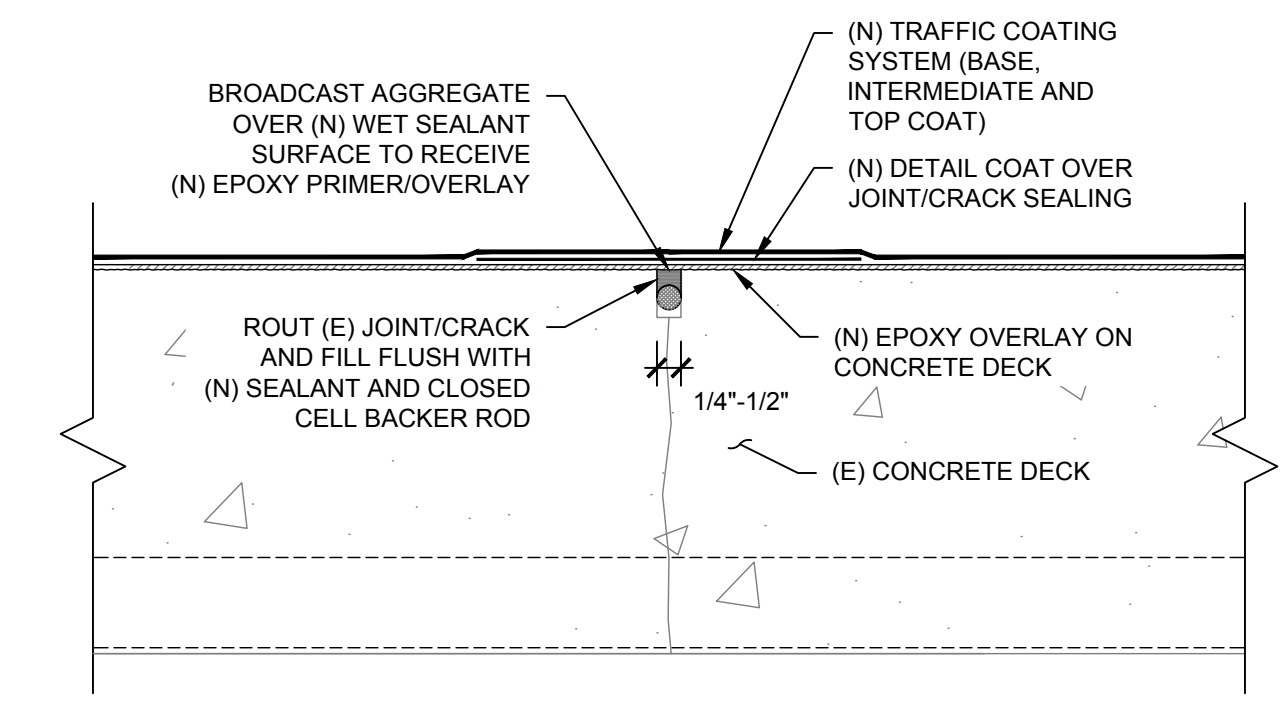
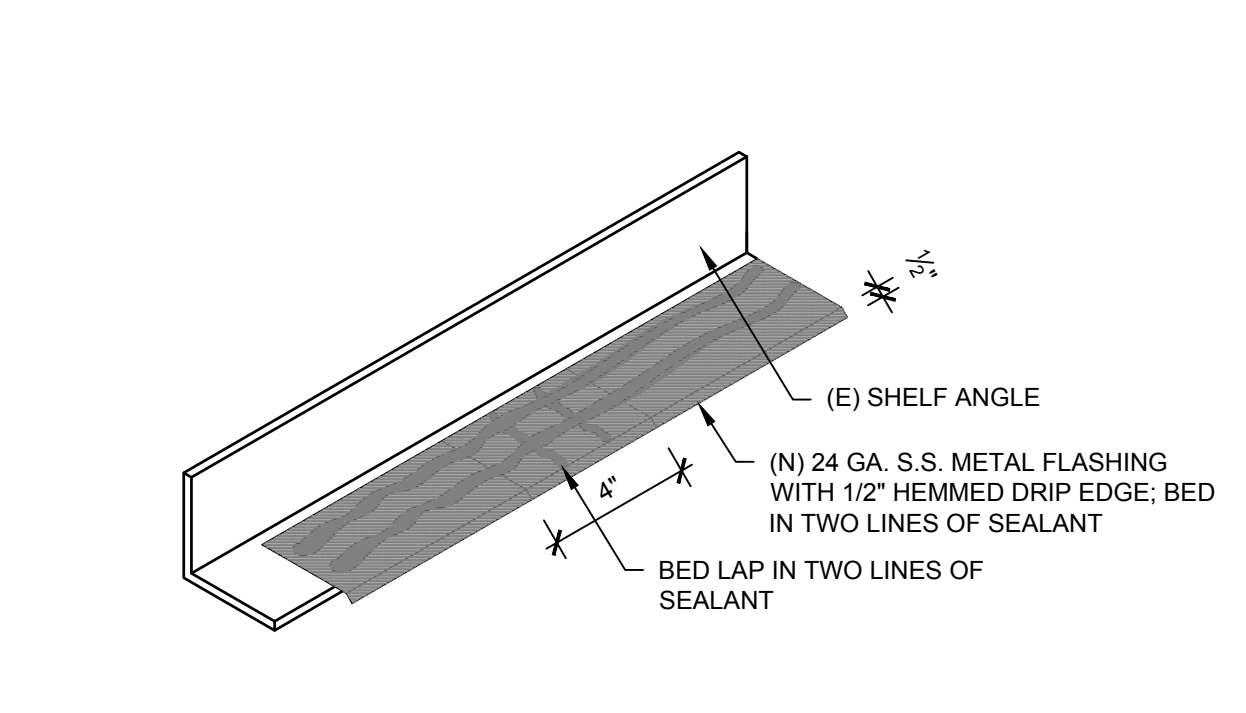
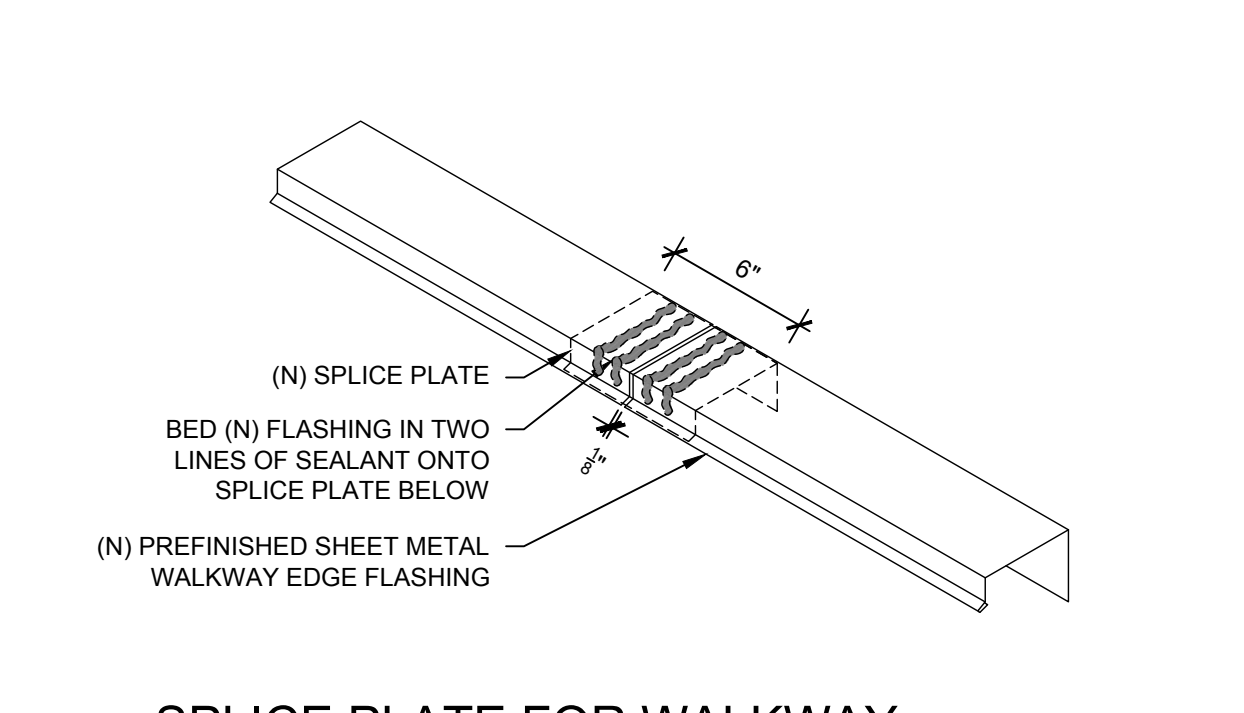
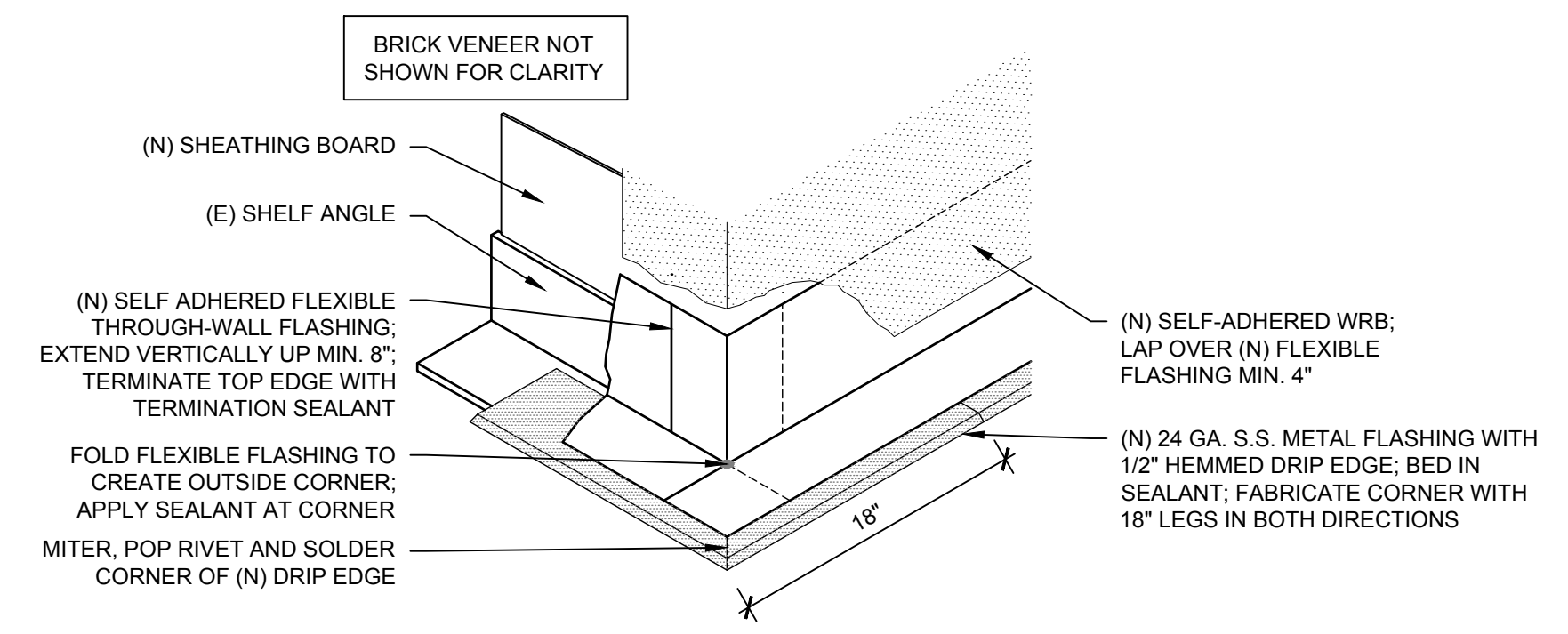
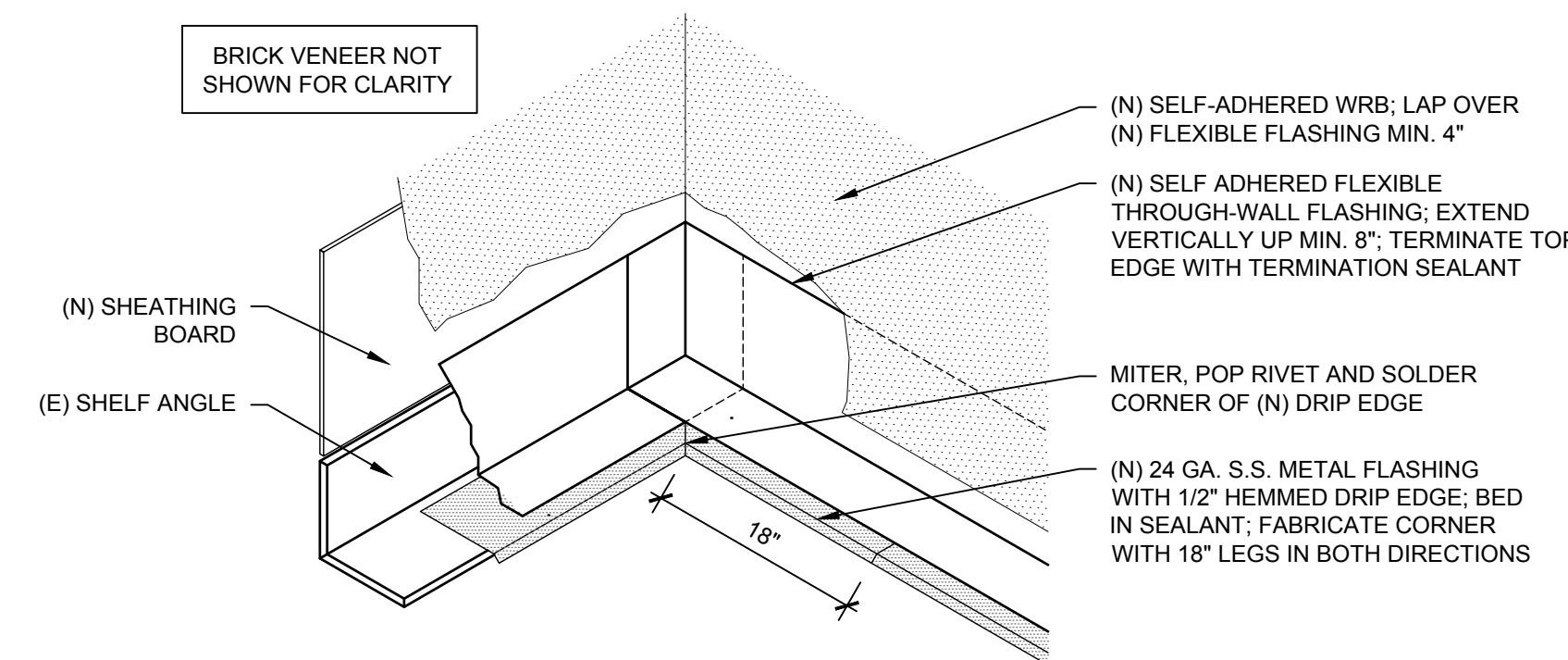
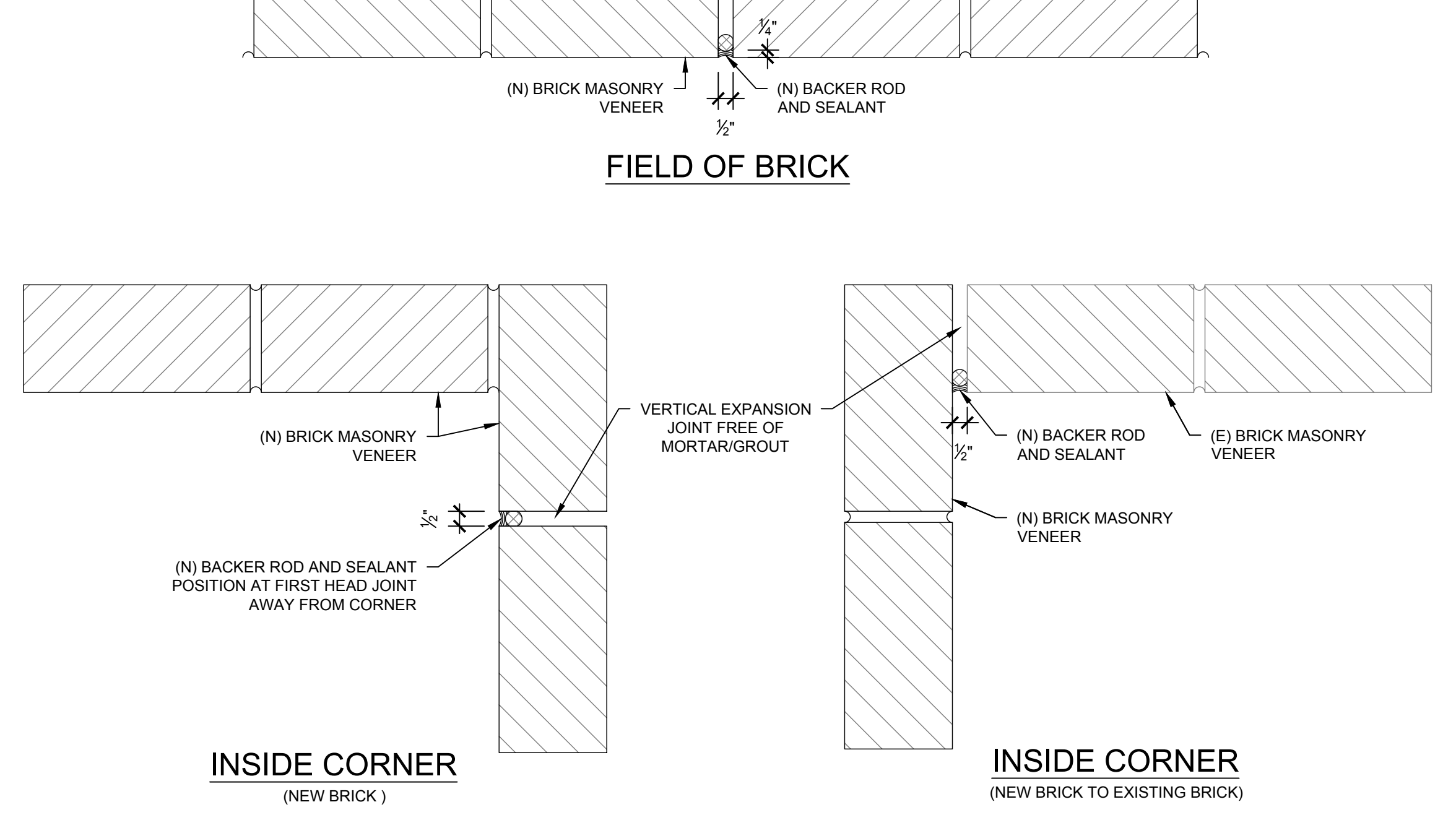
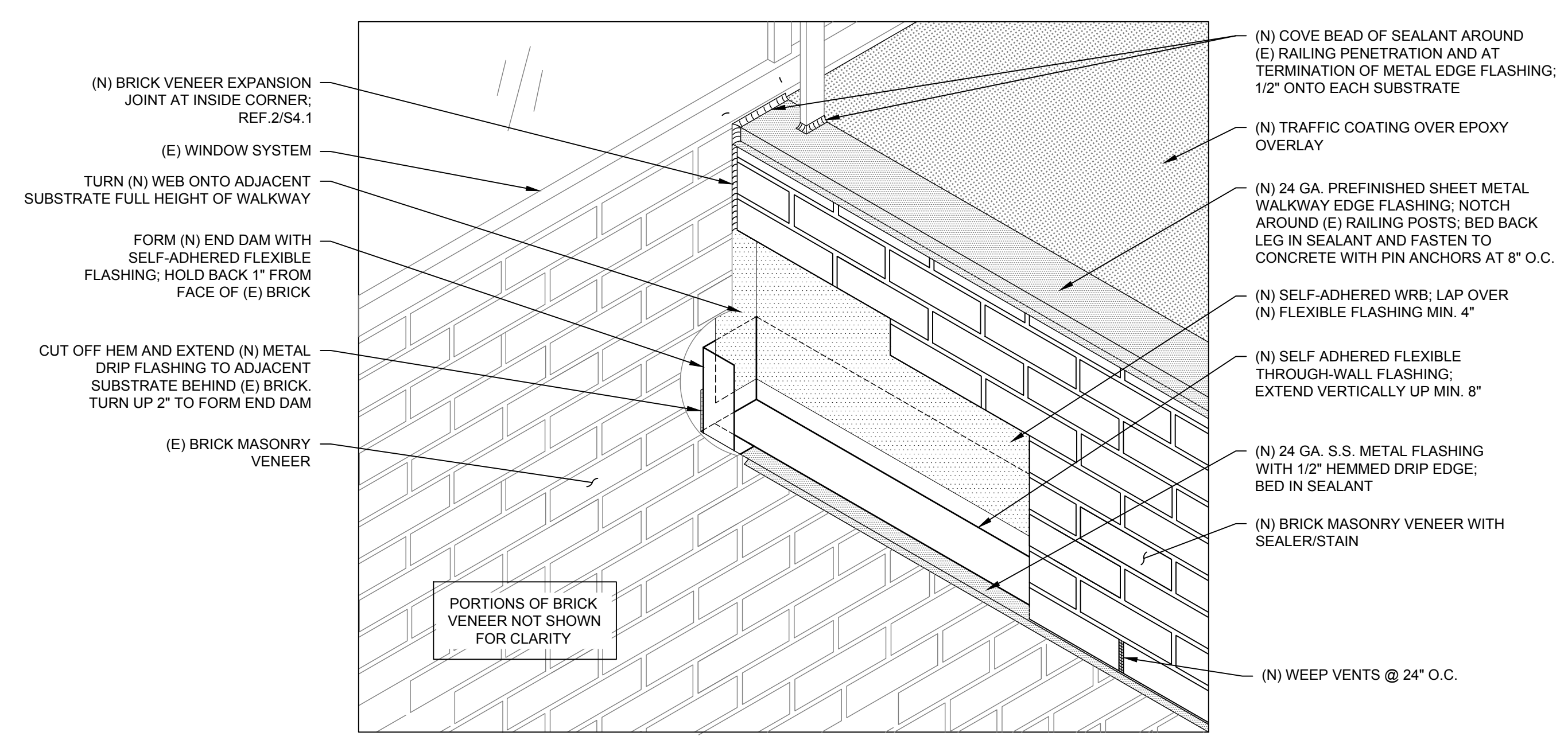
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Project No.	2020.6756.1
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Checked	SVG/BCS
Scale	As Noted
WATERPROOFING DETAILS	
Sheet Title	
Sheet No.	S4.1

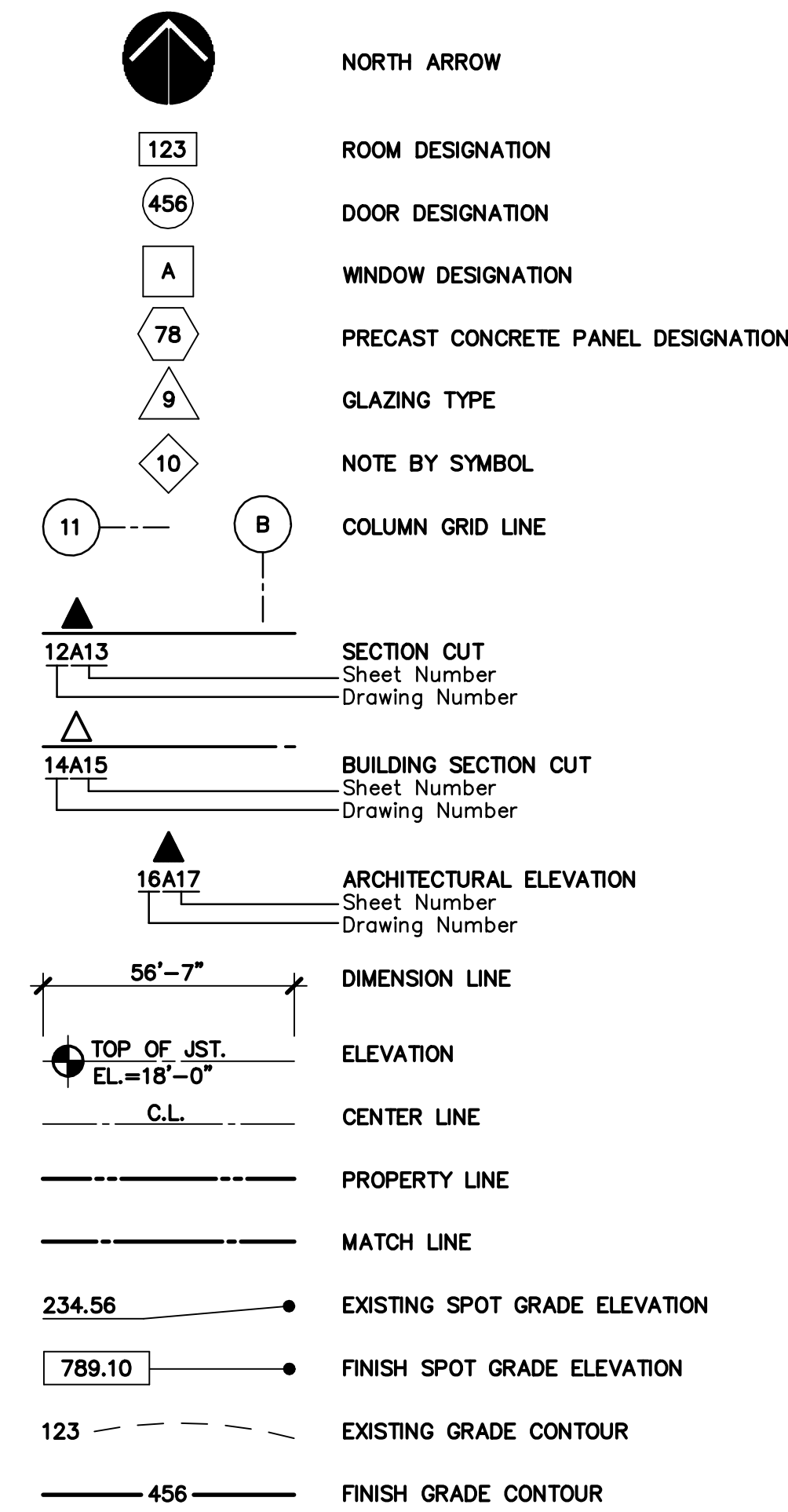


6 METAL DRIP FLASHING LAP
SCALE: 1 1/2" = 1'-0"

**7 TRAFFIC COATING - CONTROL JOINT AND
CRACK DETAIL**
SCALE: 6" = 1'-0"

8 TRAFFIC COATING TERMINATION AT DECK DRAIN
SCALE: 6" = 1'-0"

GRAPHIC CONVENTIONS



NOTE: ALL SYMBOLS INDICATED ABOVE MAY NOT APPEAR IN THIS PROJECT.

PROJECT DATA

OWNER: COLLIN COUNTY
4600 COMMUNITY AVENUE
MCKINNEY, TEXAS 75071
972-547-5370

DEVELOPMENT LOCATION: PARK CENTRE II ADDITION, LOT 1 BLOCK 1
900 E. PARK BOULEVARD
PLANO, TEXAS 75074

CODE AUTHORITY: 2018 IBC, IMC, IPC, IFC
2017 NATIONAL ELECTRIC CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE

ZONING: CC-CORRIDOR COMMERCIAL

OCCUPANCY: GENERAL: GROUP B-BUSINESS
THIS LEASE SPACE: COUNTY GOVT TAX OFFICE

CONSTRUCTION TYPE: TYPE II-B

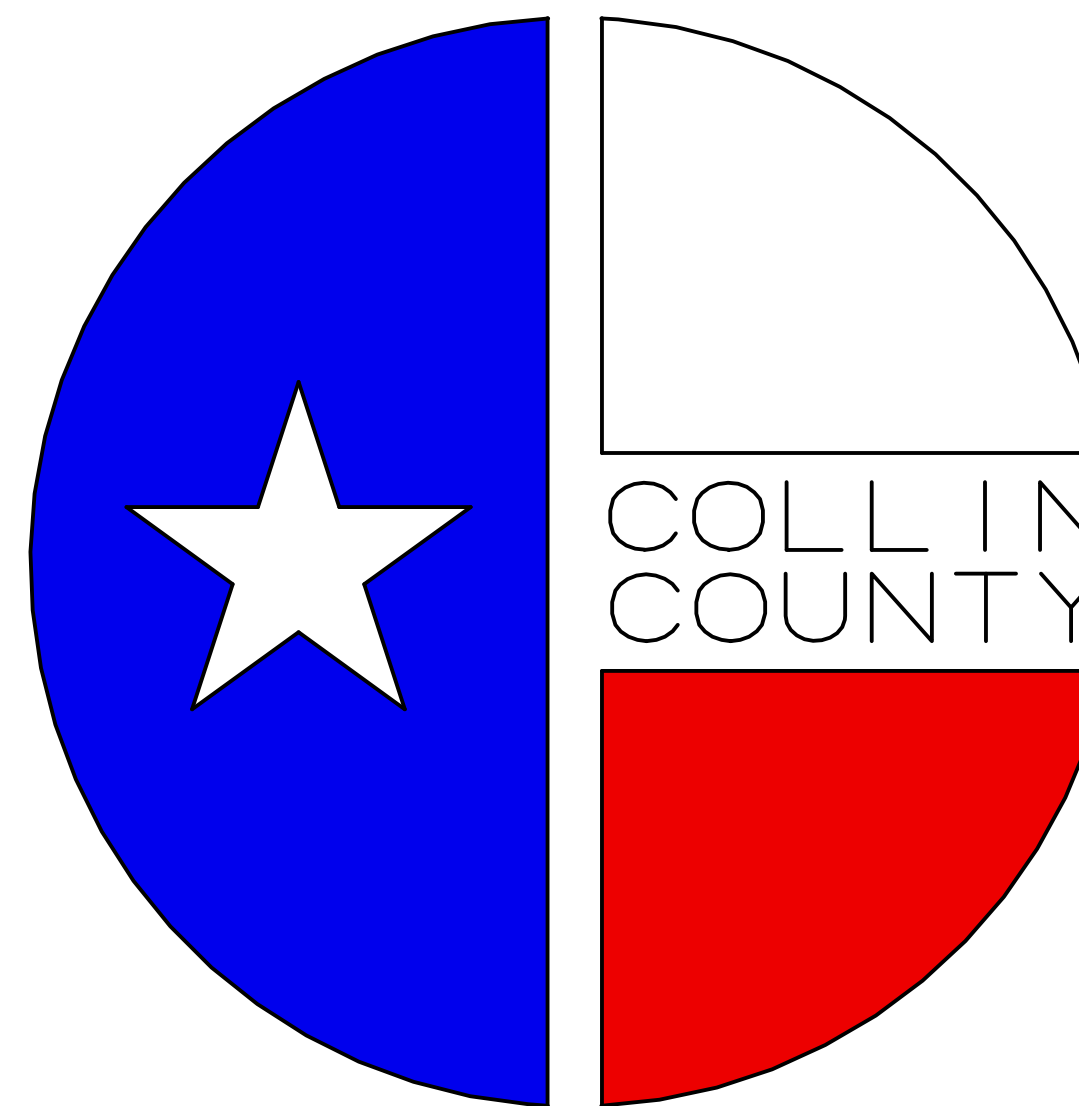
ALLOWABLE AREA: 69,000 SF
ACTUAL AREA: 40,627 SF
THIS LEASE SPACE: 6,414 SF

ALLOWABLE HEIGHT: 4 STORY
ACTUAL HEIGHT: 2 STORY

FIRE PROTECTION: AUTOMATIC SPRINKLER SYSTEM

ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	KD	KILN DRIED
AGG	AGGREGATE	KW	KILOWATT
A/C	AIR CONDITIONING	KD	KNOCKED DOWN
ALUM	ALUMINUM	LAV	LAVATORY
AMP	AMPERE	LH	LEFT HAND
ANGL or L	ANGLE	LHR	LEFT HAND REVERSE
APPROX	APPROXIMATE	LVL	LEVEL
ASPH	ASPHALT	LW	LIGHT WEIGHT
AVE	AVENUE	LF	LINEAR FEET
AVG	AVERAGE	LL	LIVE LOAD
BM	BEAM	LBR	LUMBER
BM	BENCH MARK	MFR	MANUFACTURER
BLK	BLOCK	MK	MARK
BLKG	BLOCKING	MAX	MAXIMUM
BD	BOARD	MED	MEDIUM
BRK	BRICK	MTL	METAL
BTU	BRITISH THERMAL UNIT	MTR	METER
CAB	CABINET	MIN	MINIMUM
CPT	CARPET	MIN or '	MINUTE
CLG	CEILING	NOM or "	NOMINAL
CEM	CEMENT	N	NORTH
CEM PLAS	CEMENT PLASTER	NO or #	NUMBER
CTR	CENTER	OCT	OCTAGONAL
CL or C	CENTER LINE	OFC	OFFICE
CER	CERAMIC	OC	ON CENTER
CT	CERAMIC TILE	OPNG	OPENING
CHAN	CHANNEL	OUNE	OUNCE
CKT	CIRCUIT	OD	OUTSIDE DIAMETER
CKT BKR	CIRCUIT BREAKER	OZ	OVERALL
CO	CLEAN OUT	PG	PAGE
CW	COLD WATER	PR	PAIR
COL	COLUMN	PKG	PARKING
CONC	CONCRETE	PKG d	PENNY (NAIL SIZE)
CONC BLK	CONCRETE BLOCK	%	PERCENT
CONN	CONNECTION	PLAS	PLASTER
CONTR	CONTRACTOR	PLAS LAM	PLASTIC LAMINATE
CONTR	CONTRACT	PL GL	PLATE GLASS
CF	CUBIC FEET/FOOT	PLMB	PLUMBING
CFM	CUBIC FEET PER MINUTE	PLYWD	PLYWOOD
CI	CUBIC INCH	PT	POINT
CY	CUBIC YARD	LB or #	POUND
CYL	CYLINDER	PL or #	PROPERTY LINE
DL	DEAD LOAD	PC	PULL CHAIN
DEG or °	DEGREE	PB	PUSH BUTTON
DTL	DETAIL	QTY	QUANTITY
DIAM or Ø	DIAMETER	QT	QUART
DIM	DIMENSION	R	RADIUS
DC	DIRECT CURRENT	REFL	REFLECTED
DISC	DISCONNECT	RET	RETURN
DWL	DOWEL	RH	RIGHT HAND
DN	DOWN	RHR	RIGHT HAND REVERSE
DS	DOWNSPOUT	R	RISER
DWG	DRAWING	RFG	ROOFING
DF	DRINKING FOUNTAIN	RD	ROOF DRAIN
EA	EACH	RO	ROUGH OPENING
E	EAST	RND or Ø	ROUND
ELEC	ELECTRIC or ELECTRICAL	SS	SANITARY SEWER
ENC	ELECTRIC WATER COOLER	SEC or "	SECOND
ELEV	ELEVATION	SECT	SECTION
ENCL	ENCLOSURE	SEL	SELECT
ENGR	ENGINEER	SEL	SEWER
EQUIP	EQUIPMENT	SWR	SHEATHING
EST	ESTIMATE	SHT	SHEET
EXT	EXTERIOR	SDG	SIDING
FAB	FABRICATE	S or SK	SINK
FT or '	FEET or FOOT	S	SOUTH
FRM	FEET PER MINUTE	SYP	SOUTHERN YELLOW PINE
FPS	FEET PER SECOND	SPCS	SPACES
FIN	FINISH	SPKR	SPEAKER
FIN FLR	FINISH FLOOR	SQ	SQUARE
FH	FIRE HYDRANT	SF	SQUARE FEET/FOOT
FIXT	FIXTURE	SS	STAINLESS STEEL
FLR	FLOOR	ST	STREET
FD	FLOOR DRAIN	STD	STANDARD
FTG	FOOTING	STA	STATION
GAL	GALLON	STL	STEEL
GPH	GALLONS PER HOUR	SUSP	SUSPENDED
GPM	GALLONS PER MINUTE	SW	SWITCH
GPS	GALLONS PER SECOND	TEL	TELEPHONE
GALV	GALVANIZED	TEMP	TEMPERATURE
GA	GAGE	TER	TERRAZZO
GL	GLASS	THK	THICK
GOVT	GOVERNMENT	T&G	TONGUE & GROOVE
GR	GRADE	TYP	TYPICAL
GRND	GROUND	UL	UNDERWRITER'S LABORATORY
GYP	GYP SUM	UR	URINAL
GWB	GYP SUM WALL BOARD	VCT	VINYL COMPOSITION TILE
HC	HANDICAP	VWC	VINYL WALL COVERING
HDW	HARDWARE	V	VOLT
HD	HEAD	VOL	VOLUMN
HTR	HEATER	WTR	WATER
HT	HEIGHT	WC	WATER CLOSET
HORIZ	HORIZONTAL	WH	WATER HEATER
HP	HORSE POWER	WP	WATERPROOF
HB	HOSE BIBB	W	WATT
HW	HOT WATER	WHR	WATT HOUR
IN or "	INCH	WF	WEATHERPROOF
INC	INCORPORATED	WT	WEIGHT
INFO	INFORMATION	W	WEST
ID	INSIDE DIAMETER	WP	WESTERN PINE
INSUL	INSULATION	W/	WITH
INT	INTERIOR	W/OUT	WITHOUT
INV	INVERT	WO	WOOD
JT	JOINT	WI	WROUGHT IRON
J-BOX	JUNCTION BOX	YD	YARD
		YP	YELLOW PINE

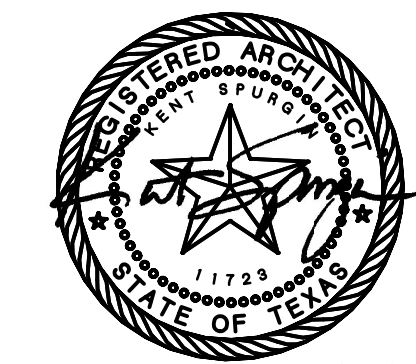
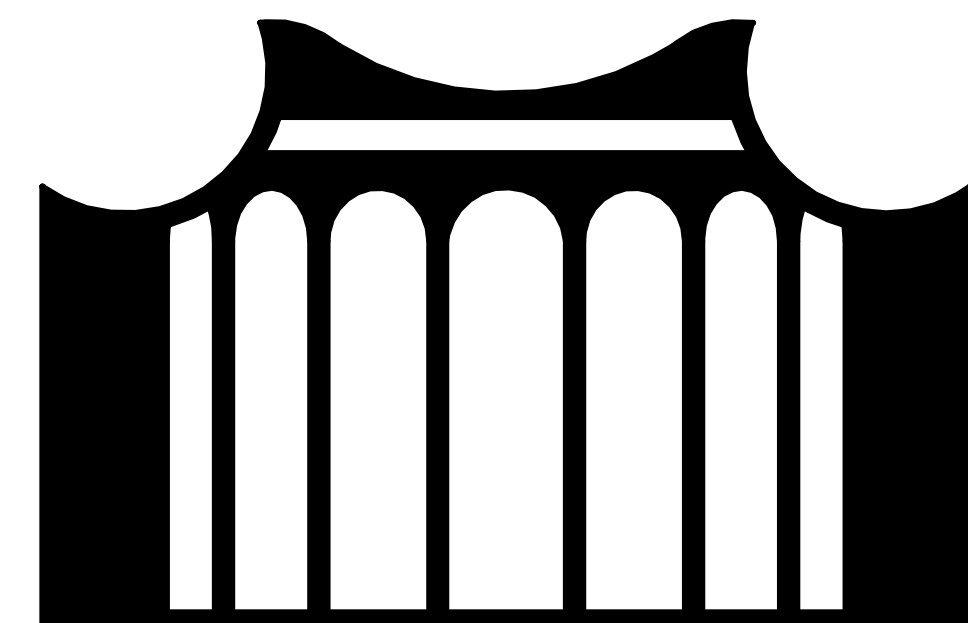


FIRST FLOOR SOFFIT REPAIRS

PARK PLAZA DEVELOPMENT
900 E. PARK BOULEVARD
PLANO, TEXAS 75074

CONSTRUCTION DOCUMENTS

SPURGIN & ASSOCIATES ARCHITECTS



03/31/22

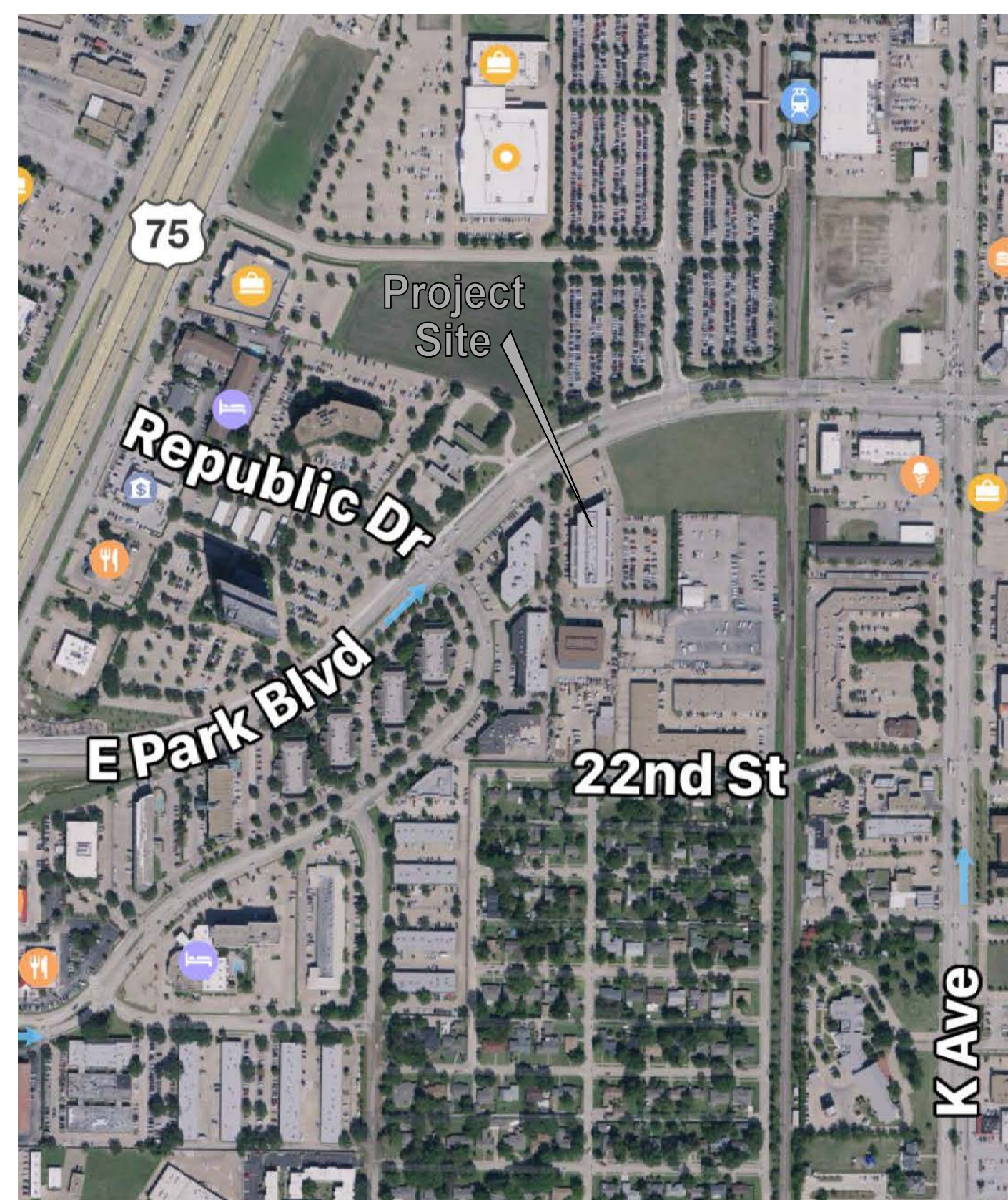
SPURGIN & ASSOCIATES ARCHITECTS
MCKINNEY, TEXAS 75069 ARCHITECT

COMMISSIONERS COURT

CHRIS HILL COUNTY JUDGE
SUSAN FLETCHER COMMISSIONER-PRECINCT 1
CHERYL WILLIAMS COMMISSIONER-PRECINCT 2
DARRELL HALE COMMISSIONER-PRECINCT 3
DUNCAN WEBB COMMISSIONER-PRECINCT 4

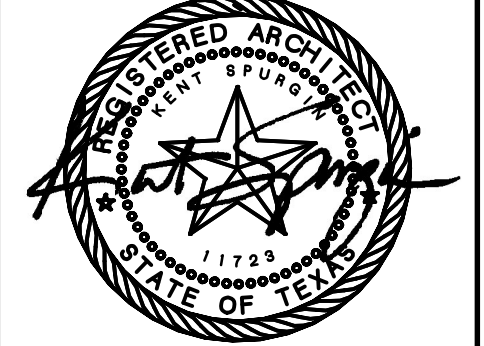
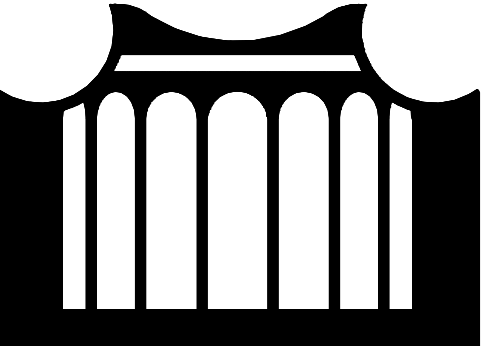
INDEX OF DRAWINGS

- A1 FIRST FLOOR SOFFIT PLAN, METAL PANEL SOFFIT DTLS & SIGN DETAILS
- A2 SECOND FLOOR BALCONY PLAN & FLOOR DRAIN PIPING DTLS



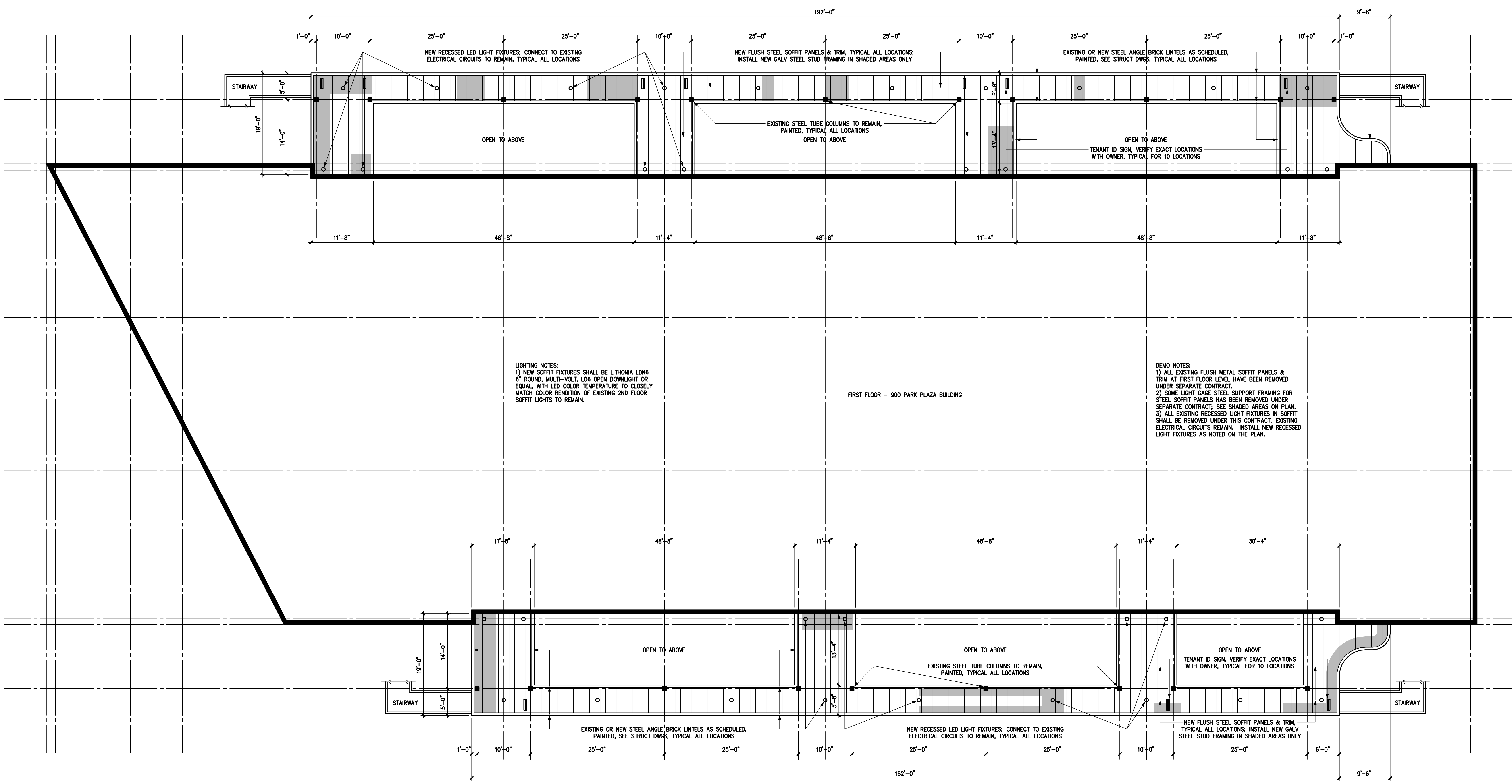
LOCATION MAP

PROJECT NUMBER: 2004
ISSUE DATE: MARCH 2022
SET NUMBER: _____



03/31/22

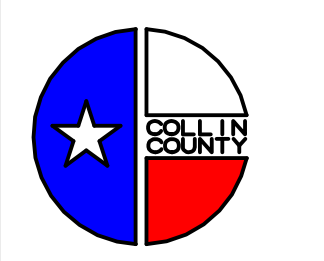
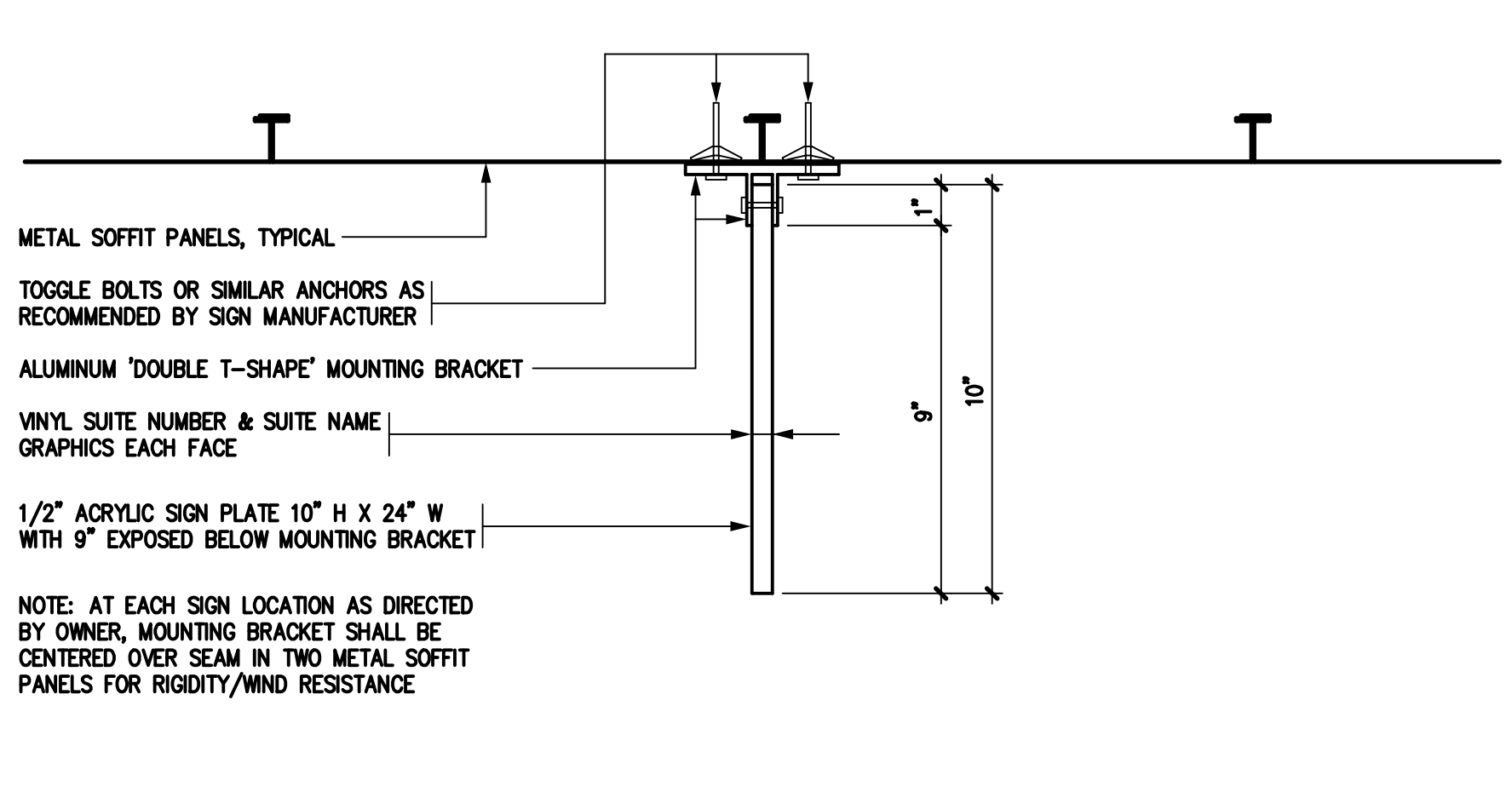
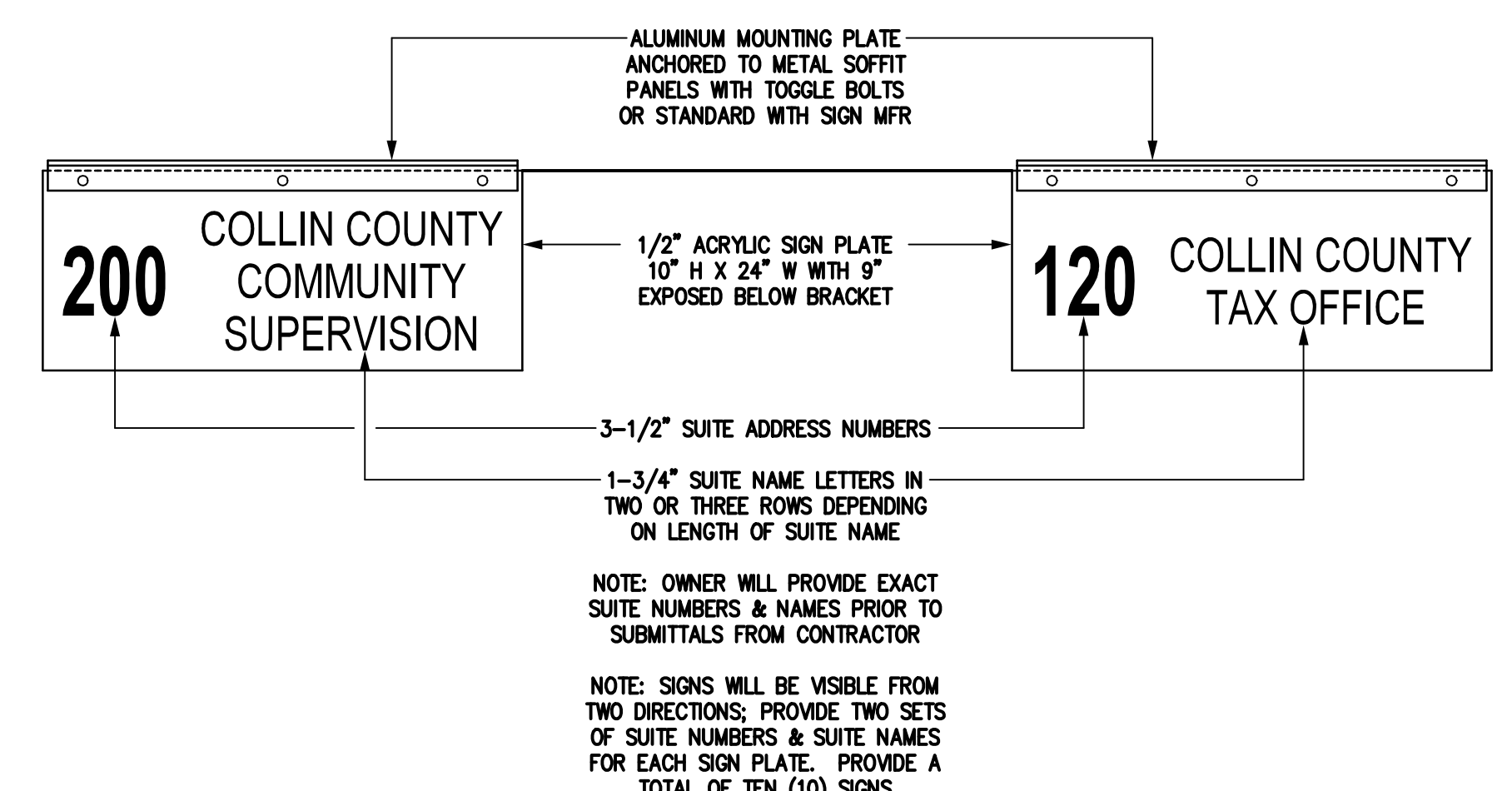
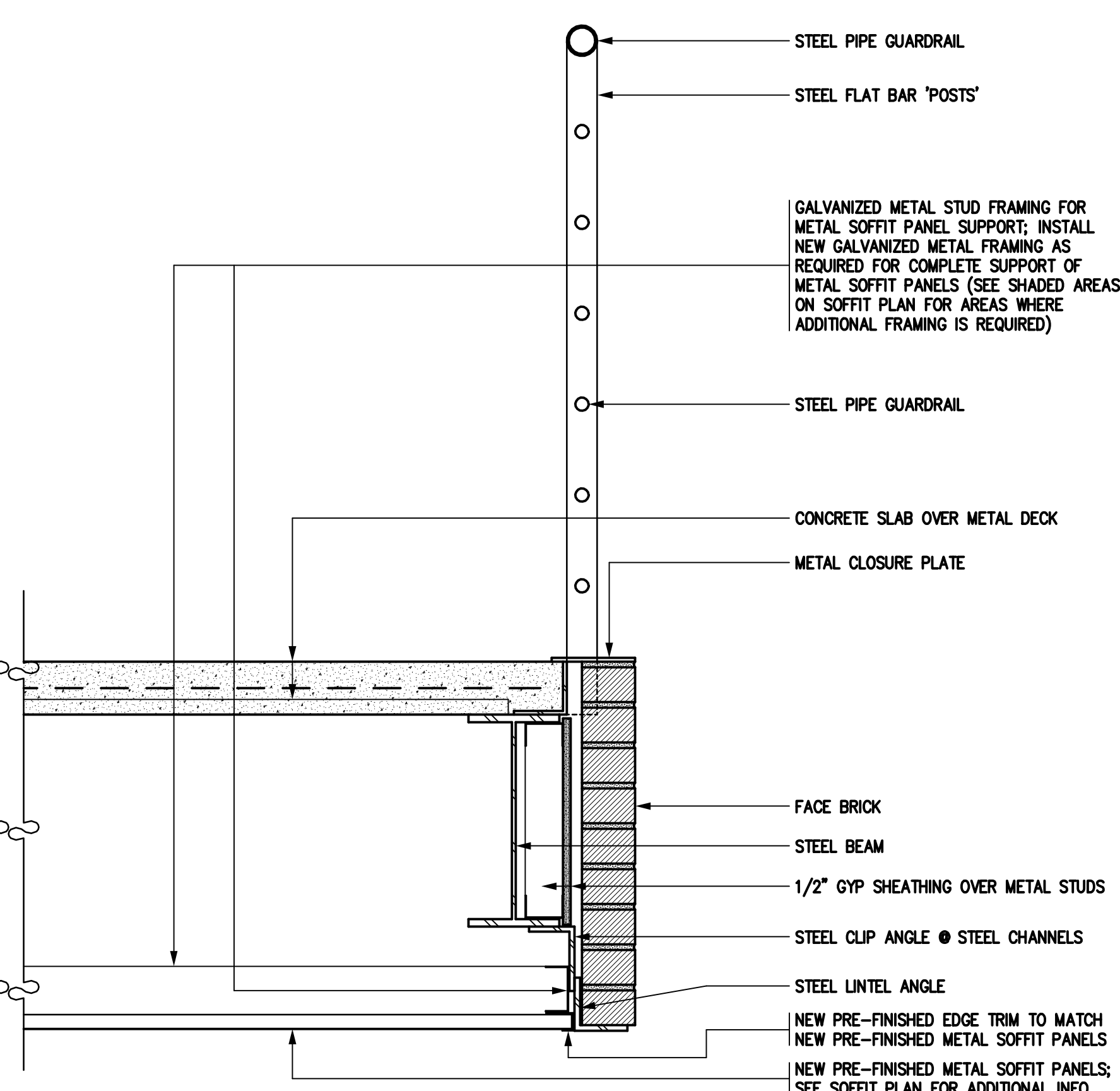
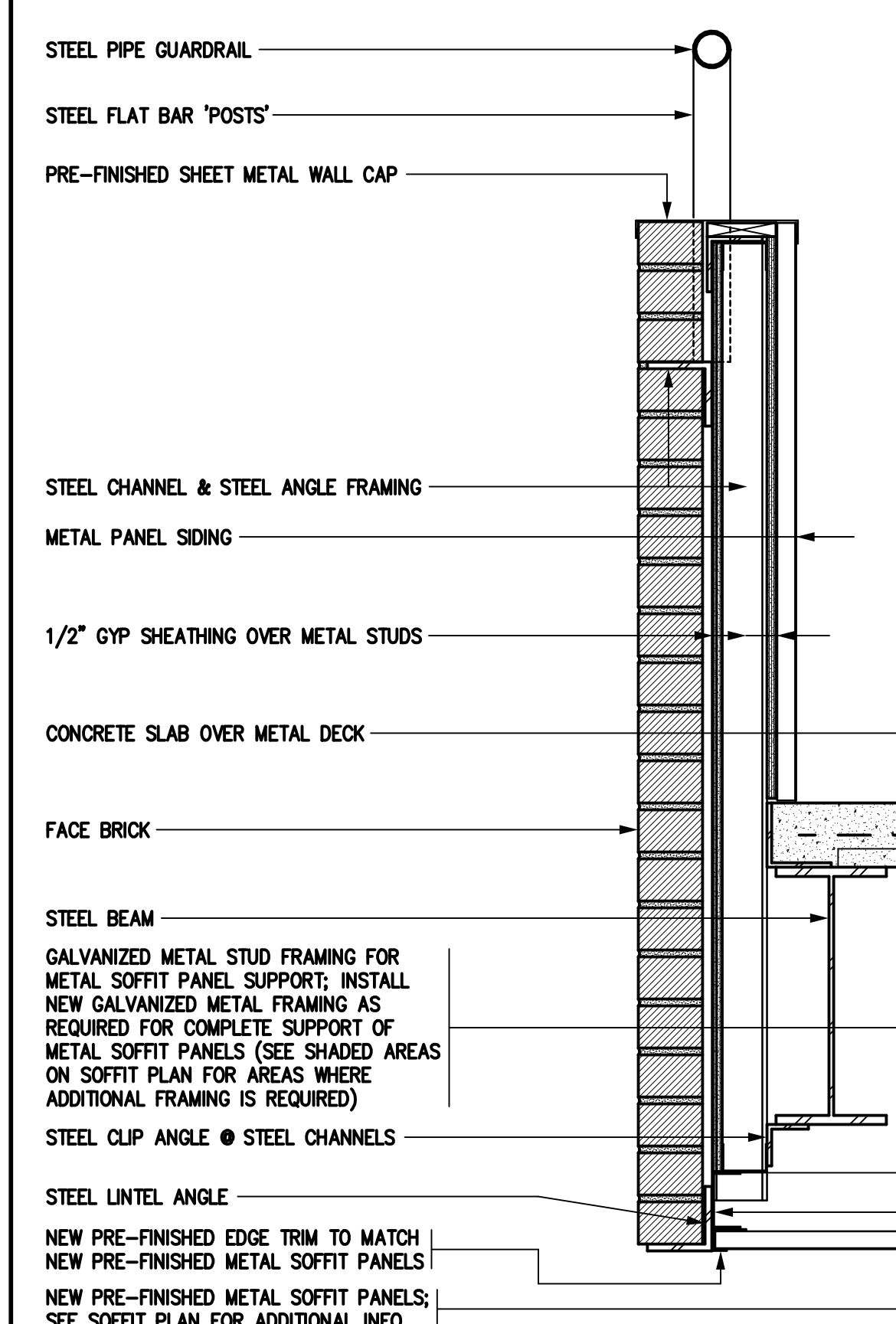
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LIGHTING NOTES:
 1) NEW SOFFIT FIXTURES SHALL BE LITHONIA L06 6" ROUND, MULTI-VOLT, LOG OPEN DOWNLIGHT OR EQUAL, WITH LED COLOR TEMPERATURE TO CLOSELY MATCH COLOR RENDITION OF EXISTING 2ND FLOOR SOFFIT LIGHTS TO REMAIN.

DEMO NOTES:
 1) ALL EXISTING FLUSH METAL SOFFIT PANELS & TRIM AT FIRST FLOOR LEVEL HAVE BEEN REMOVED UNDER SEPARATE CONTRACT.
 2) SOME LIGHT GAGE STEEL SUPPORT FRAMING FOR STEEL SOFFIT PANELS HAS BEEN REMOVED UNDER SEPARATE CONTRACT; SEE SHADED AREAS ON PLAN.
 3) ALL EXISTING RECESSED LIGHT FIXTURES IN SOFFIT SHALL BE REMOVED UNDER THIS CONTRACT; EXISTING ELECTRICAL CIRCUITS REMAIN. INSTALL NEW RECESSED LIGHT FIXTURES AS NOTED ON THE PLAN.

1 FIRST FLOOR SOFFIT PLAN
 1/8" = 1'-0"



FIRST FLOOR SOFFIT REPAIRS

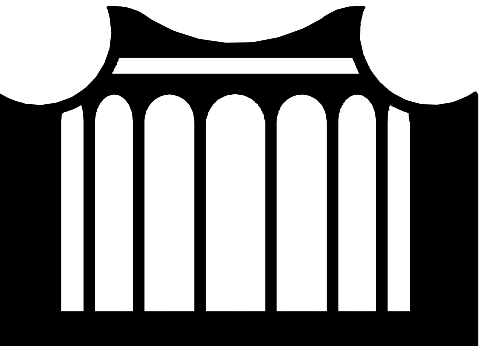
PARK PLAZA DEVELOPMENT
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 PLANO, TEXAS 75074

SHEET TITLE
FIRST FLOOR SOFFIT PLAN, METAL PANEL SOFFIT DETAILS & SIGN DETAILS

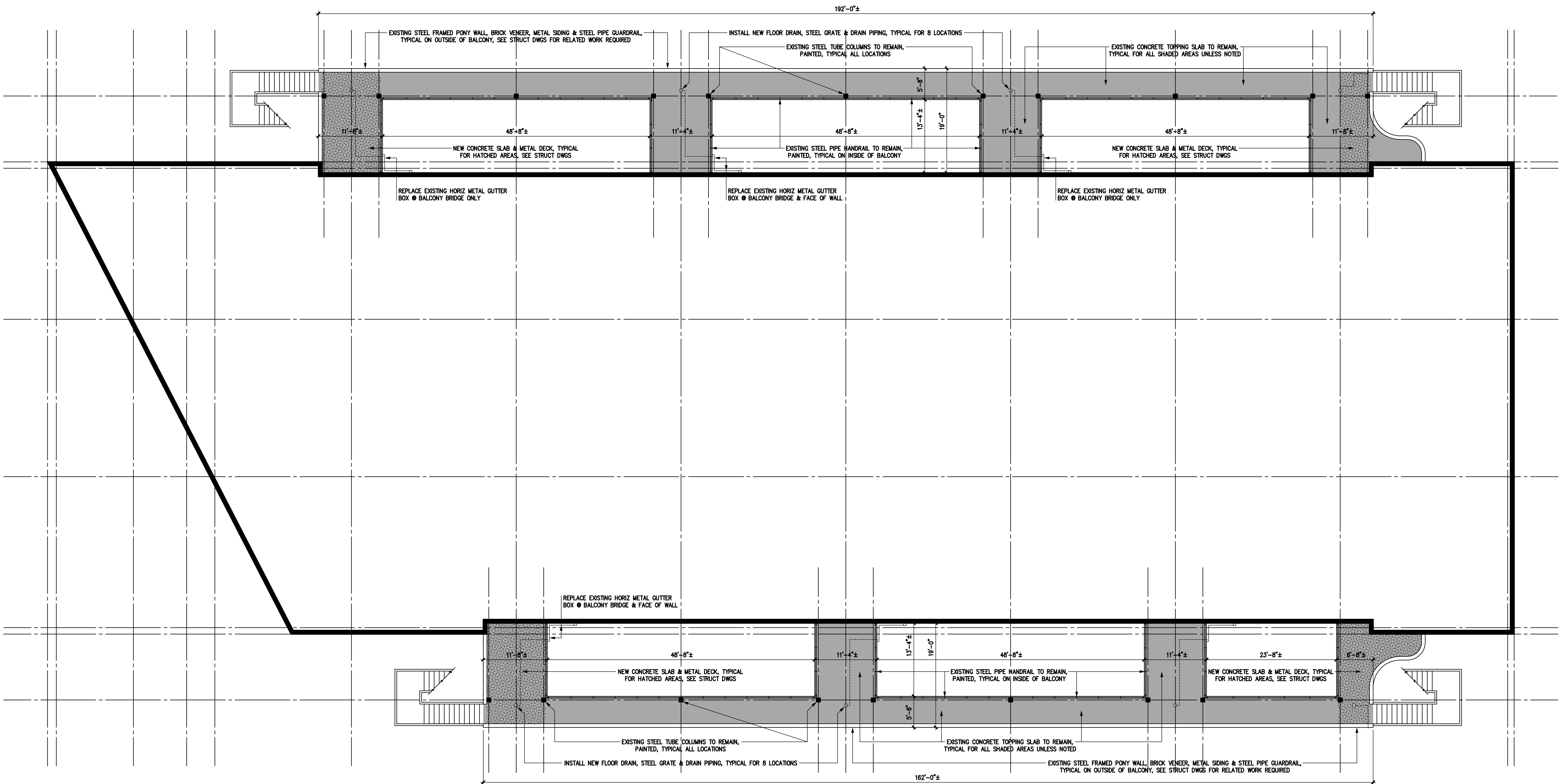
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A1

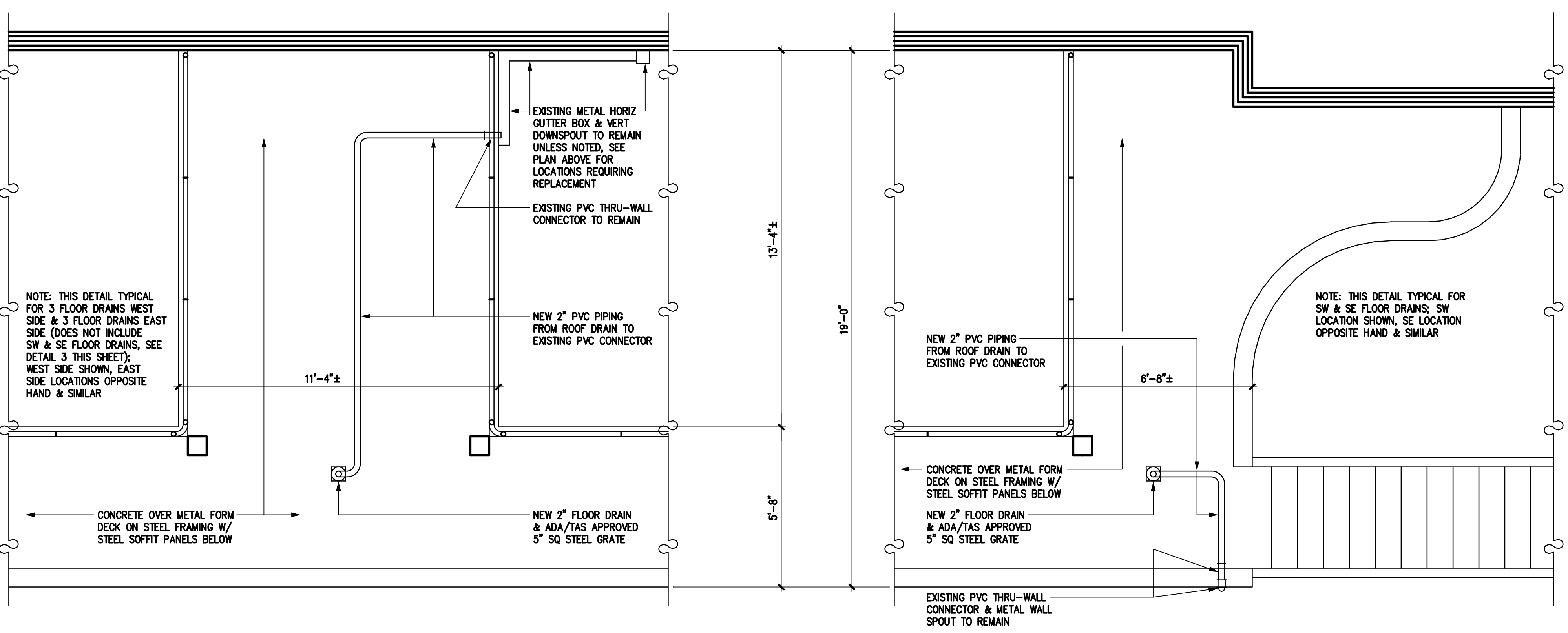
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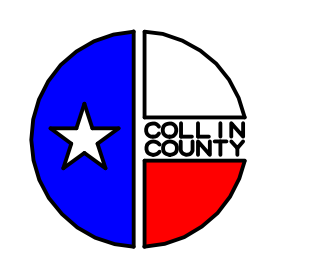


1 SECOND FLOOR BALCONY PLAN
1/8" = 1'-0"



2 FLOOR DRAIN PIPING DETAIL
1/2" = 1'-0"

3 FLOOR DRAIN PIPING DETAIL
1/2" = 1'-0"



FIRST FLOOR SOFFIT REPAIRS

PARK PLAZA DEVELOPMENT
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PLANO, TEXAS 75074

SHEET TITLE	SECOND FLOOR BALCONY PLAN & FLOOR DRAIN PIPING DETAILS
PROJECT NUMBER	2004
ISSUE DATE	MARCH 2022
REVISION DATE	
SHEET NUMBER	A2

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