

PROJECT MANUAL

HRA of Brainerd North Star Apartments & Additional Sites – 2020 Flatwork Upgrades

CONSTRUCTION DOCUMENTS

Date: February 25, 2020

Project No. 17686.000



11 East Superior Street, Suite 420
Duluth, MN 55802
218.724.8578
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DOCUMENT 00 01 01

PROJECT TITLE PAGE

1.01 PROJECT MANUAL VOLUME 1

A. Project Information: North Star Apartments & Additional Sites -
2020 Flatwork Upgrades

410 E. River Rd
Brainerd, MN 56401

B. Owner's Information: HRA of Brainerd
324 E. River Rd
Brainerd, MN 56401

C. Owner Project No. N/A.

D. Architect's Information: Wesley Stabs, AIA



TKDA
11 East Superior Street, Suite 420
Duluth, MN 55802
P. (218) 491-7362
E. Wesley.Stabs@tkda.com

E. Architect Project No. 17686.000.

F. Issued: February 25, 2020

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DULUTH, MINNESOTA

February 2020

HRA OF BRAINERD
**NORTH STAR APARTMENTS & ADDITIONAL SITES –
2020 FLATWORK UPGRADES**
BRAINERD, MINNESOTA
CERTIFICATIONS

I hereby certify that Divisions 00-33 of these Specifications, except where indicated as prepared by other design professionals, were prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Minnesota.

A blue ink signature of Wesley Stabs, written in a cursive style.

WESLEY STABS, AIA
Reg. No. 51237

I hereby certify that Divisions 31-33 of these Specifications were prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the laws of the State of Minnesota.

A black ink signature of William D. Derocher, written in a cursive style.

WILLIAM D. DEROCHE, PE
Reg. No. 54757

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DULUTH, MINNESOTA

February 2020

**NORTH STAR APARTMENTS & ADDITIONAL SITES –
2020 FLATWORK UPGRADES**
HOUSING AND REDEVELOPMENT AUTHORITY OF CROSBY

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END OF DOCUMENT

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LIST OF DRAWING SHEETS

1.01 LIST OF DRAWINGS

- A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Table of Contents page of the separately bound drawing set titled **NORTH STAR APARTMENTS & ADDITIONAL SITES - 2020 FLATWORK UPGRADES**, dated **2.25.2020**.

A000	TITLE SHEET
A001	NORTH STAR APARTMENTS – DEMOLITION SITE PLAN
A100	NORTH STAR APARTMENTS – SITE PLAN
A110	ADDITIONAL SITES – SITE PLAN
A120	ADDITIONAL SITES – SITE PLAN
A130	ADDITIONAL SITES – SITE PLAN
A200	CONSTRUCTION DETAILS
A201	CONSTRUCTION DETAILS

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DOCUMENT 00 11 13

ADVERTISEMENT FOR BIDS

1.01 PROJECT INFORMATION

- A. Notice to Bidders: Qualified bidders may submit bids for project as described in this Document. Submit bids according to the Instructions to Bidders.
 - 1. Bids will be received for the following Davis Bacon Wage project, which includes requirements of Section 3 of the HUD Act of 1968 for low income hiring, see the General Conditions for Construction Contracts (Section 00 72 00):
- B. Project Identification: North Star Apartments & Additional Sites – 2020 Flatwork Upgrades – 17686.000.
 - 1. Project Location: 410 E River Rd, Brainerd, MN 56401.
- C. Owner: HRA of Brainerd – 324 E River Rd, Brainerd, MN 56401.
 - 1. Owner's Representative: Terry Quick – 218.824.3434 or terry@brainerdhra.org
- D. Architect: Wesley Stabs, AIA – TKDA – 11 E. Superior Street, Suite 420, Duluth, MN 55802.
- E. Project Description: North Star Apartments was built approximately 50 years ago. Since then, the existing concrete entry and plaza flatwork, and sidewalks and plaza has weathered and moved through time. A majority of it was deteriorated and heaved and settled due to years of seasonal freeze and thaw cycles. In addition to the plaza and entrance flatwork, a small modular block retaining wall and additional sidewalk will be replaced on the northeast side of the apartment building. There are additional HRA single and multi-family dwelling sites within the Brainerd city limits that require minor exterior flatwork repair included within the project as well.
 - 1. Project cost range is anticipated to be under \$360,000.
- F. Construction Contract: Bids will be received for the following Work:
 - 1. General Contract (all trades).

1.02 BID SUBMITTAL AND OPENING

- A. Owner will receive sealed lump sum bids until the bid time and date at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:
 - 1. Bid Date: March 17, 2020.
 - 2. Bid Time: 3:00 p.m., local time.
 - 3. Location: Brainerd HRA, 410 E River Rd, Brainerd, MN 56401
- B. Bids will be thereafter publicly opened and read aloud.

1.03 BID SECURITY

- A. Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 60 days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.04 PREBID MEETING

- A. Pre-bid Meeting: See Document 002513 "Pre-bid Meetings."
- B. Pre-bid Meeting: A Pre-bid meeting for all bidders will be held at North Star Apartments at 410 E River Rd, Brainerd, MN 56401 on March 3rd, 2020 at 1:00 pm, local time. Prospective prime bidders are requested to attend.
 - 1. Bidders' Questions: Architect will provide responses at Pre-bid Meeting to bidders' questions received up to two business days prior to meeting.

1.05 DOCUMENTS

- A. Online Procurement and Contracting Documents: Obtain access after March 3rd, 2020, by contacting QuestCDN. Online access will be provided to all registered bidders and suppliers for a nonrefundable charge of \$25. QuestCDN project number is 6829267.
- B. Viewing Procurement and Contracting Documents: Examine after February 25th, 2020, at the locations below:
 - 1. Minnesota Builder's Exchange, Minneapolis, MN.
 - 2. St. Cloud Builder's Exchange, St. Cloud, MN

1.06 TIME OF COMPLETION AND LIQUIDATED DAMAGES

- A. Successful bidder shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time. Work is subject to liquidated damages.

1.07 BIDDER'S QUALIFICATIONS

- A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

END OF DOCUMENT

DOCUMENT 00 21 13
INSTRUCTIONS TO BIDDERS

1.01 INSTRUCTIONS TO BIDDERS

- A. AIA Document A701, "Instructions to Bidders," is hereby incorporated into the Procurement and Contracting Requirements by reference.
 - 1. A copy of AIA Document A701, "Instructions to Bidders," is bound in this Project Manual.

END OF DOCUMENT

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AIA[®] Document A701[™] – 2018

Instructions to Bidders

for the following Project:

(Name, location, and detailed description)

THE OWNER:

(Name, legal status, address, and other information)

THE ARCHITECT:

(Name, legal status, address, and other information)

TABLE OF ARTICLES

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- 6 POST-BID INFORMATION**
- 7 PERFORMANCE BOND AND PAYMENT BOND**
- 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS**

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612[™]–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount

of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
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.7 Addenda:

Number	Date	Pages
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.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

☐ AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017.)

☐ The Sustainability Plan:

Title	Date	Pages
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☐ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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.9 Other documents listed below:

(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

Additions and Deletions Report for **AIA® Document A701™ – 2018**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 16:08:21 ET on 02/21/2020.

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 16:08:21 ET on 02/21/2020 under Order No. 4446672795 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A701™ - 2018, Instructions to Bidders, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)

DOCUMENT 00 21 20

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

THE FOLLOWING SUPPLEMENTS MODIFY, CHANGE, DELETE FROM OR ADD TO THE INSTRUCTIONS TO BIDDERS, HUD-5369 AND HUD-5369A (10/2002). WHERE ANY ARTICLE OF THE INSTRUCTIONS TO BIDDERS IS MODIFIED OR ANY PARAGRAPH, SUBPARAGRAPH OR CLAUSE THEREOF IS MODIFIED OR DELETED BY THESE SUPPLEMENTS, THE UNALTERED PROVISIONS OF THAT ARTICLE, PARAGRAPH, SUBPARAGRAPH OR CLAUSE SHALL REMAIN IN EFFECT.

- 1.01 HUD-5369 ARTICLE 2. EXPLANATIONS AND INTERPRETATIONS TO PROSPECTIVE BIDDERS
- A. Requests for interpretations shall be made to the Architect's Office.
 - B. The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.
 - C. No substitution will be considered prior to receipts of Bids unless written request for approval has been received by the Architect at least ten (10) days prior to the date for receipt of Bids. Each such request shall include the name of the material or equipment for which it is to be substituted including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or other work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.
 - D. If the Architect approves any proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.
 - E. No substitutions will be considered after the Contract award unless specifically provided in the Contract Documents.
 - F. No Addenda will be issued later than five (5) days prior to the date for the receipt of Bids except one which includes postponement of the date for receipt of Bids.
 - G. Each Bidder shall ascertain prior to submitting its bid that they have received all Addenda issued, and shall acknowledge their receipt on the Form of Proposal.
- 1.02 HUD-5369 ARTICLE 4. RESPONSIBILITY OF PROSPECTIVE CONTRACTOR
- A. The Public Housing Authority (PHA) will require a Statement of Qualifications on the form furnished for that purpose, a copy of which is included in the Specification, of the bidder's financial resources, his construction work experience, and his organization and equipment available for the work contemplated. The PHA shall have the right to take such steps as it deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish the PHA all such information and data for this purpose as the PHA may request. The right is reserved to reject any bid where an investigation of the available evidence or information does not satisfy the PHA that the bidder is qualified to carry out properly the terms of the Specifications.

1.03 HUD-5369 ARTICLE 5. WITHDRAWAL OF BIDS

- A. No bid shall be withdrawn for a period of forty-five (45) calendar days subsequent to the opening of bids without written permission of the PHA.

1.04 HUD-5369 ARTICLE 7. SERVICE OF PROTEST

- A. Protests shall be served on the Contacting Officer at the Office of the Owner/Public Housing Authority located as designated on the title page of the specifications.

1.05 HUD-5369 ARTICLE 8. CONTRACT AWARD

- A. Owner may accept add or deduct alternates in any order that will be most advantageous to the PHA/IHA.

1.06 HUD-5369 ARTICLE 10. ASSURANCE OF COMPLETION

- A. The Performance and Payment Bond in a penal sum of 100 percent of the Contract Price shall be in the same form as that included in the Contract Documents. This bond shall be signed by a guaranty or surety company licensed to do business in the State of Minnesota.

1.07 HUD-5369 ADD ARTICLE 13. BIDDING DOCUMENTS

- A. Additional sets of Plans and Specifications may be secured upon payment of the advertised fee for each additional set.

1.08 HUD-5369 ADD ARTICLE 14. ALTERNATES (IF ANY)

- A. Alternates shall be held open and valid for forty-five (45) days after signing of the Contract by the Owner. The Owner may accept or reject Alternate(s) during the forty-five (45) day period.

1.09 HUD-5369 ADD ARTICLE 15. COMPLETION SCHEDULE

- A. The number of calendar days required to complete the project shall be specified in the Form of Proposal.

1.10 HUD-5369 ADD ARTICLE 16. PREBID CONFERENCE

- A. The contractors and subcontractors are invited to attend a prebid conference and tour scheduled for:

10:00 AM on March 19, 2019
Crosby HRA, Dellwood
Apartments 1st Floor Community
Club Room Crosby, MN 55441

- B. Architect will be present. Any clarifications/ modifications of Contract Documents will be made by addenda.

1.11 HUD-5369 ADD ARTICLE 17. TAXES

- A. The Contractor shall pay all sales, consumer, use and other similar taxes for the Work or portions thereof provided by the Contractor which are legally enacted at the time bids are received, whether or not yet effective.

END OF DOCUMENT

DOCUMENT 00 22 25

**REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF
BIDDERS - HUD-5369-A**

**SEE *HUD-5369-A, REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF
BIDDERS* BOUND IN THE PROJECT MANUAL.**

END OF DOCUMENT

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**U.S. Department of Housing
and Urban Development**
Office of Public and Indian Housing

**Representations, Certifications,
and Other Statements of Bidders**
Public and Indian Housing Programs

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a competitive proposal solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory--

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

[insert full name of person(s) in the bidder's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder deletes or modifies subparagraph (a)2 above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

[] [Contracting Officer check if following paragraph is applicable]

(d) Non-collusive affidavit. (applicable to contracts for construction and equipment exceeding \$50,000)

(1) Each bidder shall execute, in the form provided by the PHA/IHA, an affidavit to the effect that he/she has not colluded with any other person, firm or corporation in regard to any bid submitted in response to this solicitation. If the successful bidder did not submit the affidavit with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the affidavit by that date may render the bid nonresponsive. No contract award will be made without a properly executed affidavit.

(2) A fully executed "Non-collusive Affidavit" [] is, [] is not included with the bid.

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

"Bona fide employee" means a person, employed by a bidder and subject to the bidder's supervision and control as to time, place, and manner of performance, who neither exerts, nor proposes to exert improper influence to solicit or obtain contracts nor holds out as being able to obtain any contract(s) through improper influence.

"Improper influence" means any influence that induces or tends to induce a PHA/IHA employee or officer to give consideration or to act regarding a PHA/IHA contract on any basis other than the merits of the matter.

(b) The bidder represents and certifies as part of its bid that, except for full-time bona fide employees working solely for the bidder, the bidder:

(1) [] has, [] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [] has, [] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(c) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder shall make an immediate and full written disclosure to the PHA/IHA Contracting Officer.

(d) Any misrepresentation by the bidder shall give the PHA/IHA the right to (1) terminate the contract; (2) at its discretion, deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

3. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (applicable to contracts exceeding \$100,000)

(a) The definitions and prohibitions contained in Section 1352 of title 31, United States Code, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The bidder, by signing its bid, hereby certifies to the best of his or her knowledge and belief as of December 23, 1989 that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of a contract resulting from this solicitation;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its bid, OMB standard form LLL, "Disclosure of Lobbying Activities;" and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(d) Indian tribes (except those chartered by States) and Indian organizations as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) are exempt from the requirements of this provision.

4. Organizational Conflicts of Interest Certification

The bidder certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities:

- (a) Result in an unfair competitive advantage to the bidder; or,
- (b) Impair the bidder's objectivity in performing the contract work.

[] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

(a) By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government, HUD, or the State in which this contract is to be performed; or,

(2) Participate in HUD programs pursuant to 24 CFR Part 24.

(b) The certification in paragraph (a) above is a material representation of fact upon which reliance was placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal contract programs.

6. Minimum Bid Acceptance Period

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the PHA/IHA for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The PHA/IHA requires a minimum acceptance period of [Contracting Officer insert time period] calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the PHA's/IHA's minimum requirement. The bidder allows the following acceptance period: calendar days.

(e) A bid allowing less than the PHA's/IHA's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

7. Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it --

(a) [] is, [] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) [] is, [] is not a women-owned business enterprise. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [] is, [] is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- | | |
|------------------------|------------------------------|
| [] Black Americans | [] Asian Pacific Americans |
| [] Hispanic Americans | [] Asian Indian Americans |
| [] Native Americans | [] Hasidic Jewish Americans |

8. Indian-Owned Economic Enterprise and Indian Organization Representation (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

The bidder represents and certifies that it:

(a) [] is, [] is not an Indian-owned economic enterprise. "Economic enterprise," as used in this provision, means any commercial, industrial, or business activity established or organized for the purpose of profit, which is at least 51 percent Indian owned. "Indian," as used in this provision, means any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act.

(b) [] is, [] is not an Indian organization. "Indian organization," as used in this provision, means the governing body of any Indian tribe or entity established or recognized by such governing body. Indian "tribe" means any Indian tribe, band, group, pueblo, or

community including Native villages and Native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

9. Certification of Eligibility Under the Davis-Bacon Act (applicable to construction contracts exceeding \$2,000)

(a) By the submission of this bid, the bidder certifies that neither it nor any person or firm who has an interest in the bidder's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of the contract resulting from this solicitation shall be subcontracted to any person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

10. Certification of Nonsegregated Facilities (applicable to contracts exceeding \$10,000)

(a) The bidder's attention is called to the clause entitled **Equal Employment Opportunity** of the General Conditions of the Contract for Construction.

(b) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(c) By the submission of this bid, the bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The bidder agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in the contract.

(d) The bidder further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) prior to entering into subcontracts which exceed \$10,000 and are not exempt from the requirements of the Equal Employment Opportunity clause, it will:

(1) Obtain identical certifications from the proposed subcontractors;

(2) Retain the certifications in its files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause of the prime contract. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Note: The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

11. Clean Air and Water Certification (applicable to contracts exceeding \$100,000)

The bidder certifies that:

(a) Any facility to be used in the performance of this contract [] is, [] is not listed on the Environmental Protection Agency List of Violating Facilities:

(b) The bidder will immediately notify the PHA/IHA Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the bidder proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and,

(c) The bidder will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

12. Previous Participation Certificate (applicable to construction and equipment contracts exceeding \$50,000)

(a) The bidder shall complete and submit with his/her bid the Form HUD-2530, "Previous Participation Certificate." If the successful bidder does not submit the certificate with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the certificate by that date may render the bid nonresponsive. No contract award will be made without a properly executed certificate.

(b) A fully executed "Previous Participation Certificate" [] is, [] is not included with the bid.

13. Bidder's Signature

The bidder hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

(Company Address)

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SUPPLEMENTARY REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS FOR BIDDERS

THE FOLLOWING SUPPLEMENTS MODIFY, CHANGE, DELETE FROM OR ADD TO THE REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF BIDDERS, HUD 5369-A, (11/92). WHERE ANY ARTICLE OF THE REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF BIDDERS IS MODIFIED OR ANY PARAGRAPH, SUBPARAGRAPH OR CLAUSE THEREOF IS MODIFIED OR DELETED BY THESE SUPPLEMENTS, THE UNALTERED PROVISIONS OF THAT ARTICLE, PARAGRAPH, SUBPARAGRAPH OR CLAUSE SHALL REMAIN IN EFFECT.

1.01 HUD-5369-A ARTICLE 6. MINIMUM BID ACCEPTANCE PERIOD

- A. The PHA/LHA requires a minimum acceptance period of forty-five (45) calendar days.

1.02 HUD-5369-A ARTICLE 7. SMALL, MINORITY, WOMEN-OWNED BUSINESS CONCERN REPRESENTATION

- A. Bidders are requested to solicit bids from minority and/or women-owned businesses on this project.
- B. The Contractor is responsible for evaluating the solicited firms for this project.
- C. The successful bidder, upon request of the PHA contracting officer, may be required to submit additional information regarding the response of the minority firms solicited, including but not limited to list of firms submitting a bid, bid prices submitted, and the reason for the rejection of those bids, if rejected.
- D. Bidders shall enter, in the applicable blanks of bid form, the names of minority or female owned firms which they have solicited for bids and to which they may subcontract work or buy materials for this project, together with applicable dollar amounts.

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PREBID MEETINGS

1.01 PREBID MEETING

A. Architect will conduct a Prebid meeting as indicated below:

1. Meeting Date: March 3rd, 2020.
2. Meeting Time: 1:00 pm, local time.
3. Location: North Star Apartments at 410 East River Rd, Brainerd, MN 56401

B. Attendance:

1. Prime Bidders: Attendance at Prebid meeting is recommended.
2. Subcontractors: Attendance at Prebid meeting is recommended.

C. Bidder Questions: Submit written questions to be addressed at Prebid meeting minimum of two business days prior to meeting.

D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:

1. Procurement and Contracting Requirements:

- a. Advertisement for Bids.
- b. Instructions to Bidders.
- c. Bidder Qualifications.
- d. Bonding.
- e. Insurance.
- f. Bid Security.
- g. Bid Form and Attachments.
- h. Bid Submittal Requirements.
- i. Bid Submittal Checklist.
- j. Notice of Award.

2. Communication during Bidding Period:

- a. Obtaining documents.
- b. Access to Project Web site.
- c. Bidder's Requests for Information.
- d. Bidder's Substitution Request
- e. Bidder's Prior Approval Request.
- f. Addenda.

3. Contracting Requirements:

- a. Agreement.
- b. The General Conditions.
- c. The Supplementary Conditions.
- d. Other Owner requirements.

4. Construction Documents:
 - a. Scopes of Work.
 - b. Temporary Facilities.
 - c. Use of Site.
 - d. Work Restrictions.
 - e. Alternates, Allowances, and Unit Prices.
 - f. Substitutions following award.
 5. Separate Contracts:
 - a. Work by Owner.
 - b. Work of Other Contracts.
 6. Schedule:
 - a. Project Schedule.
 - b. Contract Time.
 - c. Liquidated Damages.
 - d. Other Bidder Questions.
 7. Site visit or facility walkthrough.
 8. Post Meeting Addendum.
- E. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes to attendees. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.
1. Sign-in Sheet: Minutes will include list of meeting attendees.
 2. List of Plan-holders: Minutes will include list of plan-holders.

END OF DOCUMENT

DOCUMENT 00 26 00

PROCUREMENT SUBSTITUTION PROCEDURES

1.01 DEFINITIONS

- A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.02 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.03 PROCUREMENT SUBSTITUTIONS

- A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
 - 1. Extensive revisions to the Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
 - 3. The request is fully documented and properly submitted.

1.04 SUBMITTALS

- A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing by prime contract Bidder only in compliance with the following requirements:
 - 1. Requests for substitution of materials and equipment will be considered if received no later than 10 days prior to date of bid opening.
 - 2. Submittal Format: Submit three copies of each written Procurement Substitution Request, using form bound in Project Manual or CSI Substitution Request Form 1.5C.
 - 3. Submittal Format: Submit Procurement Substitution Request, using format provided on Project Web site.
 - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.

- b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
 - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
 - 2) Copies of current, independent third-party test data of salient product or system characteristics.
 - 3) Samples where applicable or when requested by Architect.
 - 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - 6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from ICC-ES.
 - 7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.
- c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
- d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:

- 1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

- C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM – STIPULATED SUM

1.01 BID INFORMATION

- A. Bidder: _____.
- B. Project Name: North Star Apartments & Additional Sites - 2020 Flatwork Upgrades.
- C. Project Location: 410 East River Rd, Brainerd, MN 56401.
- D. Owner: HRA of Brainerd.
- E. Owner Project Number: NA
- F. Architect: Wesley Stabs, AIA.
- G. Architect Project Number: 17686.000.

1.02 CERTIFICATIONS AND BASE BID

- A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by TKDA and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
 - 1. _____ Dollars (\$_____).

1.03 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within 60 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:
 - 1. _____ Dollars (\$_____).
- B. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.04 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work by August 28th, 2020.

1.05 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1 (If issued), dated _____.
2. Addendum No. 2 (if issued), dated _____.
3. Addendum No. 3 (if issued), dated _____.

1.06 BID SUPPLEMENTS

A. The following supplements are a part of this Bid Form and are attached hereto.

1. Bid Form Supplement - Bid Bond Form (AIA Document A310).

1.07 ALTERNATES

A. For the change/s in the Work described in Section 01 23 00 as Deduct Alternate No. 1 deduct from the Base Bid, the lump sum of:

_____ Dollars (\$ _____)

1.08 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in Minnesota, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.09 SUBMISSION OF BID

Respectfully submitted this ____ day of _____, 2020.

Submitted By: _____

Authorized Signature: _____

Signed By: _____
Print Name

Title: _____
Owner/Partner/President

Witness Signature: _____

Signed By: _____
Print Name

Title: _____
Corporate Secretary/Partner/Vice President

Street Address _____

City, State, Zip _____

Phone: _____

License No.: _____

Federal ID No.: _____

END OF DOCUMENT

SECTION 00 41 20

STATEMENT OF CONTRACTOR'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate sheets. The Bidder may submit any additional information he/she desires.

1. Name of Contractor

2. Permanent Main office address, including City, State & Zip Code _____

3. Name all Corporate Officers & give their Social Security Number.

4. When organized

5. If a Corporation, where incorporated

6. How many years have you been engaged in construction under your present firm or trade name? _____ years.
7. Contracts on hand: (Schedule these, showing gross amounts of each contract and the appropriate anticipated dates of completion).

8. General character of work performed by your company

9. Have you ever failed to complete any work awarded to you? If so, where and why?

10. Have you ever defaulted on a contract? If so, where and why? _____

11. List the more important contracts recently completed by you, stating type of work, approximate gross cost, and the month and year completed. List the company name, address, person to be contacted and telephone number.

12. List your major equipment available for this contract and whether owned or leased.

13. Experience in construction work similar in importance to this project. _____

14. Background and experience of the principal members of your organization, including the officers:

15. Credit Available:

\$ _____

16. Give bank reference: List bank name, address, person to contact and telephone number.

17. Please include a detailed financial statement with this document.

18. (a) Have you ever been a party to or otherwise involved in any action or legal proceeding involving matters related to race, color, nationality, sex or religion? If so, give full details:

(b) Have you ever been accused of discrimination based upon race, color, nationality, sex or religion in any action or legal proceedings, including any proceeding related to any Federal Agency? If so, give full details:

(a) Have you ever been a party to or otherwise involved in any action or legal proceedings involving matters related to the violation of the Copeland Act, Federal Labor Standards or Davis-Bacon Act? If so, give full details:

(c) Have you ever been accused of violating the Copeland Act, Davis-Bacon Act or Federal Labor Standards? If so, give full details:

The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Local Housing Authority in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated at _____ this _____ day of _____, 2016

_____(Name of Bidder)

By: _____ Title: _____

State of: _____

County of: _____

being duly sworn, deposes and says that he/she is the _____ of

(Name of Organization)

and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this _____ day of _____, 2019

(Notary Public)

My Commission Expires: _____

END OF SECTION

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DOCUMENT 00 43 13

BID SECURITY FORMS

1.01 BID FORM SUPPLEMENT

- A. A completed bid bond form is required to be attached to the Bid Form.

1.02 BID BOND FORM

- A. AIA Document A310, "Bid Bond," is the recommended form for a bid bond. A bid bond acceptable to Owner, or other bid security as described in the Instructions to Bidders, is required to be attached to the Bid Form as a supplement.
- B. Copies of AIA standard forms may be obtained from The American Institute of Architects; www.aia.org/contractdocs/purchase/index.htm; email: docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT

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DOCUMENT 00 45 50

STATE OF MINNESOTA – RESPONSIBLE CONTRACTOR ACT COMPLIANCE

PART 1 - GENERAL

1.01 REQUIREMENT

- A. On January 1, 2015 all construction contracts with a State or Federal Agency or using State or Federal funds, must include a certification via a sworn affidavit that bidding contractors and their sub-contractors comply with Minnesota Law (Minn. Stat. §16C.285) "The Responsible Contractor Requirement".
- B. A construction contract for this project will not be signed prior to January 1, 2015 and the construction amount is anticipated to be in excess of \$50,000, therefore this law will be applicable to this project.
- C. The Prime Contractor must submit with their bid, the attached "Responsible Contractor Verification and Certification of Compliance Form" (Attachment A).
- D. The Prime Contractor is required to obtain from all of their Subcontractors copies of the same "Responsible Contractor Verification and Certification of Compliance Form" (Attachment A) and keep them on file.
- E. The Prime Contractor is required to submit Attachment A-1 First-Tier Subcontractor List with their bid (add extra pages if needed).
- F. The Prime Contractor will be required to update the original certification to include the identification of all additional sub-contractors & sub-sub-contractors on the project using form Attachment A-2. The Prime Contractor is to keep these on file and provide the updated forms to the Owner along with all original certifications from all sub-contractors and all sub-sub-contractors.
- G. The Prime Contractor and all sub-contractors and sub-sub-contractors (at any level) are responsible for compliance with this law.
- H. Contractors may register or verify registration at the DOLI website to ensure compliance.
- I. DOCUMENT INCLUDES THE FOLLOWING ATTACHMENTS:
- J. Attachment A: Responsible Contractor Verification and Certification of Compliance Form (3 pages).
- K. Attachment A-1: First Tier Subcontractors List (1 page -add additional if nec.)
- L. Attachment A-2: Additional Subcontractor List plus certification (2 pages).

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF DOCUMENT

ATTACHMENT A

RESPONSIBLE CONTRACTOR VERIFICATION AND CERTIFICATION OF COMPLIANCE

PROJECT: _____

Minn. Stat. § 16C.285, Subd. 7. **IMPLEMENTATION.** ... any prime contractor or subcontractor that does not meet the minimum criteria in subdivision 3 or fails to verify that it meets those criteria is not a responsible contractor and is not eligible to be awarded a construction contract for the project or to perform work on the project...

Minn. Stat. § 16C.285, Subd. 3. **RESPONSIBLE CONTRACTOR, MINIMUM CRITERIA.** "Responsible contractor" means a contractor that conforms to the responsibility requirements in the solicitation document for its portion of the work on the project and verifies that it meets the following minimum criteria:

- | | |
|-----|---|
| (1) | <p>The Contractor:</p> <ul style="list-style-type: none">(i) is in compliance with workers' compensation and unemployment insurance requirements;(ii) is currently registered with the Department of Revenue and the Department of Employment and Economic Development if it has employees;(iii) has a valid federal tax identification number or a valid Social Security number if an individual; and(iv) has filed a certificate of authority to transact business in Minnesota with the Secretary of State if a foreign corporation or cooperative. |
| (2) | <p>The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 177.24, 177.25, 177.41 to 177.44, 181.13, 181.14, or 181.722, and has not violated United States Code, title 29, sections 201 to 219, or United States Code, title 40, sections 3141 to 3148. For purposes of this clause, a violation occurs when a contractor or related entity:</p> <ul style="list-style-type: none">(i) repeatedly fails to pay statutorily required wages or penalties on one or more separate projects for a total underpayment of \$25,000 or more within the three-year period;(ii) has been issued an order to comply by the commissioner of Labor and Industry that has become final;(iii) has been issued at least two determination letters within the three-year period by the Department of Transportation finding an underpayment by the contractor or related entity to its own employees;(iv) has been found by the commissioner of Labor and Industry to have repeatedly or willfully violated any of the sections referenced in this clause pursuant to section 177.27;(v) has been issued a ruling or findings of underpayment by the administrator of the Wage and Hour Division of the United States Department of Labor that have become final or have been upheld by an administrative law judge or the Administrative Review Board; or(vi) has been found liable for underpayment of wages or penalties or misrepresenting a construction worker as an independent contractor in an action brought in a court having jurisdiction. Provided that, if the contractor or related entity contests a determination of underpayment by the Department of Transportation in a contested case proceeding, a violation does not occur until the contested case proceeding has concluded with a determination that the contractor or related entity underpaid wages or penalties;* |

(3)	The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 181.723 or chapter 326B. For purposes of this clause, a violation occurs when a contractor or related entity has been issued a final administrative or licensing order;*
(4)	The contractor or related entity has not, more than twice during the three-year period before submitting the verification, had a certificate of compliance under section 363A.36 revoked or suspended based on the provisions of section 363A.36, with the revocation or suspension becoming final because it was upheld by the Office of Administrative Hearings or was not appealed to the office;*
(5)	The contractor or related entity has not received a final determination assessing a monetary sanction from the Department of Administration or Transportation for failure to meet targeted group business, disadvantaged business enterprise, or veteran-owned business goals, due to a lack of good faith effort, more than once during the three-year period before submitting the verification;*
	* Any violations, suspensions, revocations, or sanctions, as defined in clauses (2) to (5), occurring prior to July 1, 2014, shall not be considered in determining whether a contractor or related entity meets the minimum criteria.
(6)	The contractor or related entity is not currently suspended or debarred by the federal government or the state of Minnesota or any of its departments, commissions, agencies, or political subdivisions; and
(7)	All subcontractors that the contractor intends to use to perform project work have verified to the contractor through a signed statement under oath by an owner or officer that they meet the minimum criteria listed in clauses (1) to (6).

Minn. Stat. § 16C.285, Subd. 5. **SUBCONTRACTOR VERIFICATION.**

A prime contractor or subcontractor shall include in its verification of compliance under subdivision 4 a list of all of its first-tier subcontractors that it intends to retain for work on the project.

If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors.

A prime contractor shall submit to the contracting authority upon request copies of the signed verifications of compliance from all subcontractors of any tier pursuant to subdivision 3, clause (7). A prime contractor and subcontractors shall not be responsible for the false statements of any subcontractor with which they do not have a direct contractual relationship. A prime contractor and subcontractors shall be responsible for false statements by their first-tier subcontractors with which they have a direct contractual relationship only if they accept the verification of compliance with actual knowledge that it contains a false statement.

Minn. Stat. § 16C.285, Subd. 4. **VERIFICATION OF COMPLIANCE.**

A contractor responding to a solicitation document of a contracting authority shall submit to the contracting authority a signed statement under oath by an owner or officer verifying compliance with each of the minimum criteria in subdivision 3 at the time that it responds to the solicitation document.

A contracting authority may accept a sworn statement as sufficient to demonstrate that a contractor is a responsible contractor and shall not be held liable for awarding a contract in reasonable reliance on that statement. Failure to verify compliance with any one of the minimum criteria or a false statement under oath in a verification of compliance shall render the prime contractor or subcontractor that makes the false statement ineligible to be awarded a construction contract on the project for which the verification was submitted.

A false statement under oath verifying compliance with any of the minimum criteria may result in termination of a construction contract that has already been awarded to a prime contractor or subcontractor that submits a false statement. A contracting authority shall not be liable for declining to award a contract or terminating a contract based on a reasonable determination that the contractor failed to verify compliance with the minimum criteria or falsely stated that it meets the minimum criteria.

CERTIFICATION

By signing this document I certify that I am an owner or officer of the company, and I swear under oath that:

- 1) My company meets each of the Minimum Criteria to be a responsible contractor as defined herein and is in compliance with Minn. Stat. § 16C.285,**
- 2) I have included Attachment A-1 with my company's solicitation response, and**
- 3) if my company is awarded a contract, I will also submit Attachment A-2 as required.**

Authorized Signature of Owner or Officer:

Printed Name:

Title:

Date:

Company Name:

NOTE: Minn. Stat. § 16C.285, Subd. 2, (c) If only one prime contractor responds to a solicitation document, a contracting authority may award a construction contract to the responding prime contractor even if the minimum criteria in subdivision 3 are not met.

ATTACHMENT A-1
FIRST-TIER SUBCONTRACTORS LIST
SUBMIT WITH PRIME CONTRACTOR RESPONSE

PROJECT: _____

Minn. Stat. § 16C.285, Subd. 5. A prime contractor or subcontractor shall include in its verification of compliance under subdivision 4 a list of all of its first-tier subcontractors that it intends to retain for work on the project. Submit this form to biddocsubmittal.dot@state.mn.us.

FIRST TIER SUBCONTRACTOR NAMES (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

ATTACHMENT A-2 ADDITIONAL

SUBCONTRACTORS LIST

PRIME CONTRACTOR TO SUBMIT AS SUBCONTRACTORS ARE ADDED TO THE PROJECT

PROJECT: _____

This form must be submitted to the Project Manager or individual as identified in the solicitation document.

Minn. Stat. § 16C.285, Subd. 5. ... If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors. Submit this form to biddocsubmittal.dot@state.mn.us.

ADDITIONAL SUBCONTRACTOR NAMES (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

ADDITIONAL SUBCONTRACTOR NAMES (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

SUPPLEMENTAL CERTIFICATION FOR ATTACHMENT A-2	
<p>By signing this document I certify that I am an owner or officer of the company, and I swear under oath that:</p> <p>All additional subcontractors listed on Attachment A-2 have verified through a signed statement under oath by an owner or officer that they meet minimum criteria to be a responsible contractor as defined in Minn. Stat. §16C.285.</p>	
Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

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SECTION 00 52 00

CONTRACT FORM

THIS AGREEMENT made on _____, 2020,
by and between _____

hereinafter called the "Contractor" and the Housing And Redevelopment Authority of Brainerd, Brainerd, Minnesota hereinafter called the "Authority".

WITNESSETH, that the Contractor and the Authority for the consideration stated herein agree as follows:

ARTICLE 1. Statement of Work. The Contractor shall furnish all labor, materials, tools, and equipment and shall perform all work required in the

PLANS AND SPECIFICATIONS for:
Brainerd HRA – North Star Apartments & Additional Sites –
2020 Flatwork Upgrades for Housing and Redevelopment
Authority (HRA) of Brainerd at:

North Star Apartments, located at 410 East River Rd, Brainerd, MN 56401
1519 NE 8th Ave, 921 11th Ave NE, 1003 Ivy, 312 SE 6th Street, 703 Todd Street, 411 &
413 SE 12th Street, 314 SE 6th Street, 1312 Pine Street, 2503 & 2505 Pine Street, 2312
Pine Street, 623 SW 5th Street, 621 SW 5th Street, 712 SW 5th Street, 710 SW 5th Street,
701 SW 5th Street, 703 SW 5th Street, 707 SW 5th Street, 717 SW 5th Street, 711 SW 5th
Street, 709 SW 5th Street, 715 SW 5th Street, 718 SW 5th Street, 705 SW 5th Street, and
the Valley Trail Maintenance Garage, Brainerd, MN 56401
Dated February 25, 2020,

Which are incorporated herein by reference and made a part hereof.

ARTICLE 2. Time of Completion. The Contractor shall commence work under this Contract on a date specified in the written Notice to Proceed issued by the Authority, and shall fully complete all work thereunder within one hundred and fifty (150) calendar days after the effective date thereof.

ARTICLE 3. Contract Price.

The contract price shall be _____ DOLLARS.

ARTICLE 4. Payment. Payment shall be made as set forth in the "General Conditions" of the Specifications referred to above.

ARTICLE 5. Contract Documents. Contract Documents shall consist of the following component parts:

- a. This Instrument
- b. General Conditions and Supplementary Conditions
- c. Advertisement for Bids
- d. Instructions to Bidders and Supplementary Instructions to Bidders
- e. Detailed Specifications
- f. Contractor's Bid as Accepted by the Authority
- g. Plans (if any)
- h. Addenda (if any)

This Instrument together with the documents enumerated in this Article form the Contract and they are as fully a part of the Contract as if hereto attached or herein repeated.

IN WITNESS WHEREOF, the parties hereto have caused this Instrument to be executed the date and year first above written

In Presence of: By _____ Contractor's Name
Title _____
In Presence of: By _____ HRA of Crosby Title

CERTIFICATE OF AUTHORITY

(To be signed by an officer other than the officer signing above)

(Power of Attorney of person signing for surety company must be attached and certified to as in effect on date of bond acknowledgment by Surety)

CERTIFICATE OF ACKNOWLEDGMENT OF CORPORATE SURETY

STATE OF _____ On this _____ day of _____, 20____
COUNTY OF _____ before me appeared

_____ to me personally known, who being by me duly sworn, did
say that he or she is the _____ of _____
the corporation named in the foregoing instrument, and that the seal affixed to said instrument
was signed and sealed in behalf of said corporation by authority of its Board of _____
_____ and acknowledged said instrument to be the free act and deed of said
corporation.

_____ County _____ My Commission expires

CERTIFICATE OF ACKNOWLEDGMENT BY INDIVIDUAL

STATE OF _____ On This _____ day of _____, 20____
COUNTY OF _____ before me personally appeared _____

_____ known to be the person _____
described in and who executed the foregoing bond, and each severally acknowledged that
_____ executed the same as his or her own free act and deed.

_____ County _____
My Commission expires _____

CERTIFICATE OF ACKNOWLEDGMENT BY CORPORATION

STATE OF _____ On this _____ day of _____, 20____
COUNTY OF _____ as before me, a _____
within and for said County personally appeared _____
and _____ to me personally known, who being each by
me duly sworn did say that they are _____ President and the
_____ of _____
the corporation named in the foregoing instrument, corporation, and that said instrument was
signed and sealed in behalf of said corporation by authority of its Board of _____
_____ and _____ and _____
acknowledged said instrument to be the free act and deed of said corporation.

_____, Notary Public
_____, County _____ My Commission expires

CERTIFICATE OF PARTNERSHIP ACKNOWLEDGMENT

STATE OF _____)
COUNTY OF _____)
On this _____ day of _____, 20____, before
me personally appeared _____
and _____, co-partners doing business as _____
_____ to me
known to be the persons described in and who executed the foregoing bond and acknowledged
that they executed the same as the free act and deed of said co-partners.
_____, Notary
Public _____ County _____
My Commission expires _____

END OF SECTION

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SECTION 00 52 10

PREVIOUS PARTICIPATION CERTIFICATION – HUD 2530

See HUD 2530 Previous Participation Certification bound in the Project Manual

END OF SECTION

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Previous Participation Certification

WUFGrcctvo gpvqhJ qwlpj cpf Wldcp Fgxgqr o gpv
Office of Housing/Federal Housing Commissioner

WUFGrcctvo gpvqhCitlewntwgt
Farmers Home Administration

Reason for submission:		Hgt J WF J S Hb J C wng qprf	
30Agency name and City where the application is filed		4. Project Name, Project Number, City and Zip Code	
5. Loan or Contract amount \$	6. Number of Units or Beds	7. Section of Act	
		8. Type of Project (check one) <input type="checkbox"/> Existing <input type="checkbox"/> Rehabilitation <input type="checkbox"/> Proposed (New)	

90Nlw cmr tqr qrgf Rtlpekr cmepf cweej qti epk evdp ej ctvhtf cmgti epk cwpku

Name and address of Principals and Affiliates (Name: Last, First, Middle Initial) proposing to participate	: Tqg qhGcej Rtlpekr cmlp Rtlqgev	: OGzr gevgf ' Qy pgt uj lr lp Rtlqgev	320ULP qt KTU Go rml gt Pwo dgt

Certifications: The principal(s) listed above hereby apply to HUD or USDA FmHA, as the case maybe, for approval to participate as principal(s) in the role(s) and project listed above. The principal(s) each certify that all the statements made on this form are true, complete and correct to the best of their knowledge and belief and are made in good faith, including any Exhibits attached to this form. Y ctpjpi <HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. The principal(s) further certify that to the best of their knowledge and belief:

1. Schedule A contains a listing, for the last ten years, of every project assisted or insured by HUD, USDA FmHA and/or State and local government housing finance agencies in which the principal(s) have participated or are now participating.

2. For the period beginning 10 years prior to the date of this certification, and except as shown on the certification:
- a. No mortgage on a project listed has ever been in default, assigned to the Government or foreclosed, nor has it received mortgage relief from the mortgagee;
 - b. The principals have no defaults or noncompliance under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
 - c. There are no known unresolved findings as a result of HUD audits, management reviews or other Governmental investigations concerning the principals or their projects;
 - d. There has not been a suspension or termination of payments under any HUD assistance contract due to the principal's fault or negligence;
 - e. The principals have not been convicted of a felony and are not presently the subject of a complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);
 - f. The principals have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency;
 - g. The principals have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond;
 - 3. All the names of the principals who propose to participate in this project are listed above.
 - 4. None of the principals is a HUD/FmHA employee or a member of a HUD/FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5 C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.R. Part 0 and USDA's Standard of Conduct in 7 C.F.R. Part 0 Subpart B.
 - 5. None of the principals is a participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification, have not been filed with HUD or FmHA.
 - 6. None of the principals have been found by HUD or FmHA to be in noncompliance with any applicable fair housing and civil rights requirements in 24 CFR 5.105(a). (If any principals or affiliates have been found to be in noncompliance with any requirements, attach a signed statement explaining the relevant facts, circumstances, and resolution, if any).
 - 7. None of the principals is a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.
 - 8. Statements above (if any) to which the principal(s) cannot certify have been deleted by striking through the words with a pen, and the relevant principal(s) have initiated each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances.

Pco g qhRtlpekr cn	Uli pcwtd g qhRtlpekr cn	EgtvHecvdp Fcg*o o F f f {{{	Ctgc Edf g cpf VgdPq0
Vj luhqto rtgrctgf d{ *tlovpco g+	Ctgc Edf g cpf VgdPq0		

OMB Approval No. 2502-0118
(Exp. 02/29/2016)

1. Principals Name (Last, First)	2. List of previous projects (Project name, project ID and, Govt. agency involved)	3.List Principals' Role(s) (indicate dates participated, and if fee or identity of interest participant)	4. Status of loan (current, defaulted, assigned, foreclosed)	5.Was the Project ever in default during your participation [<u>gu</u> P <u>q</u> <u>R</u> { <u>gu</u> <u>g</u> <u>zr</u> <u>n</u> } <u>p</u>	6. Last MOR rating and Physical Insp. Score and date

Received and checked by me for accuracy and completeness; recommend approval or refer to Headquarters after checking appropriate box.

Date (mm/dd/yyyy)	Tel No. and area code	<input type="checkbox"/> A. No adverse information; form HUD-2530 approval recommended. <input type="checkbox"/> B. Name match in system	<input type="checkbox"/> C. Disclosure or Certification problem
Staff	Processing and Control		
Supervisor	Director of Housing/Director, Multifamily Division		Approved <input type="checkbox"/> Yes <input type="checkbox"/> No
			Date (mm/dd/yyyy)

Kpnt wekpulhqt Ego r gwpki vj g Rgskqwu
Rct vclv cwpk Egt vthecvq. hqt o J WF/4752
Carefully read these instructions and the applicable regulations. A copy of these regulations published at 24 C.F.R. 200.210 to 200.245 can be obtained from the Multifamily Housing Representative at any HUD Office. Type or print neatly in ink when filling out this form. Mark answers in all blocks of the form. If the form is not filled completely, it will delay approval of your application.

Attach extra sheets as you need them. Be sure to indicate "Continued on Attachments" wherever appropriate. Sign each additional page that you attach if it refers to you or your record.

Ect ghvwl t gcf vj g egt vthecwpk dghvts { qw uñ p lq}
Any questions regarding the form or how to complete it can be answered by your HUD Office Multifamily Housing Representative.

Rvtr qus This form provides HUD with a certified report of all previous participation in HUD multifamily housing projects by those parties making application. The information requested in this form is used by HUD to determine if you meet the standards established to ensure that all principal participants in HUD projects will honor their legal, financial and contractual obligations and are acceptable risks from the underwriting standpoint of an insurer, lender or governmental agency. HUD requires that you certify your record of previous participation in HUD/USDA-FinHA, State and Local Housing Finance Agency projects by completing and signing this form, before your project application or participation can be approved.

HUD approval of your certification is a necessary precondition for your participation in the project and in the capacity that you propose. If you do not file this certification, do not furnish the information requested accurately, or do not meet established standards, HUD will not approve your certification.

Note that approval of your certification does not obligate HUD to approve your project application, and it does not satisfy all other HUD program requirements relative to your qualifications.

Y j q O wv Uñ p cpf Hng Hqto J WF/4752
Form HUD-2530 must be completed and signed by all principals applying to participate in HUD multifamily housing projects, including those who have no previous participation. The form must be signed and filed by all principals and their affiliates who propose participating in the HUD project. Use a separate form for each role in the project unless there is an identity of interest.

Principals include all individuals, joint ventures,

partnerships, corporations, trusts, non-profit organizations, any other public or private entity that will participate in the proposed project as a sponsor, owner, prime contractor, turnkey developer, managing agent, nursing home administrator or operator, packager, or consultant. Architects and attorneys who have any interest in the project other than an arm's length fee arrangement for professional services are also considered principals by HUD.

In the case of partnerships, all general partners regardless of their percentage interest and limited partners having a 25 percent or more interest in the partnership are considered principals. In the case of public or private corporations or governmental entities, principals include the president, vice president, secretary, treasurer and all other executive officers who are directly responsible to the board of directors, or any equivalent governing body, as well as all directors and each stockholder having a 10 percent or more interest in the corporation.

Affiliates are defined as any person or business concern that directly or indirectly controls the policy of a principal or has the power to do so. A holding or parent corporation would be an example of an affiliate if one of its subsidiaries is a principal.

Gzegrvkp hqt Eqt r qtcwpku – All principals and affiliates must personally sign the certificate except in the following situation. When a corporation is a principal, all of its officers, directors, trustees and stockholders with 10 percent or more of the common (voting) stock need not sign personally if they all have the same record to report. The officer who is authorized to sign for the corporation or agency will list the names and title of those who elect not to sign. However, any person who has a record of participation in HUD projects that is separate from that of his or her organization must report that activity on this form and sign his or her name. The objective is **full disclosure**.

Gzgo rwpkuó The names of the following parties do not need to be listed on form HUD-2530: Public Housing Agencies, tenants, owners of less than five condominium or cooperative units and all others whose interests were acquired by inheritance or court order.

Y j g t g c p f Y j g p Hqto J WF/4752 O wv Dg
Hngt < The original of this form must be submitted to the HUD Office where your project application will be processed at the same time you file your initial project application. This form must be filed with applications for projects, or when otherwise required in the situations listed below:

- Projects to be financed with mortgages insured under the National Housing Act (FHA).

- Projects to be financed according to Section 202 of the Housing Act of 1959 (Elderly and Handicapped).
- Projects in which 20 percent or more of the units are to receive a subsidy as described in 24 C.F.R. 200.213.
- Purchase of a project subject to a mortgage insured or held by the Secretary of HUD.
- Purchase of a Secretary-owned project.
- Proposed substitution or addition of a principal or principal participation in a different capacity from that previously approved for the same project.
- Proposed acquisition by an existing limited partner of an additional interest in a project resulting in a total interest of 25 percent or more or proposed acquisition by a corporate stockholder of an additional interest in a project resulting in a total interest of 10 percent or more.
- Projects with U.S.D.A., Farmers Home Administration, or with state or local government housing finance agencies that include rental assistance under Section 8 of the Housing Act of 1937. For projects of this type, form HUD-2530 should be filed with the appropriate applications directly to those agencies.

Tgskg qh Cf xgt ug F ggt o lpcvkap < If approval of your participation in a HUD project is denied, withheld, or conditionally granted on the basis of your record of previous participation, you will be notified by the HUD Office. You may request reconsideration by the HUD Review Committee. Alternatively, you may request a hearing before a Hearing Officer. Either request must be made in writing within 30 days from your receipt of the notice of determination.

If you do request reconsideration by the Review Committee and the reconsideration results in an adverse determination, you may then request a hearing before a Hearing Officer. The Hearing Officer will issue a report to the Review Committee. You will be notified of the final ruling by certified mail.

U r g e k l l e N l p g K p n t w e k p u s
T g e u p h q t u n d o k w p i this Certification: e.g., refinancing, change in ownership, change in management agent, transfer of physical assets, etc.

Dnqem3 < Fill in the name of the agency to which you are applying. For example: HUD Office, Farmers Home Administration District office, or the name of a State or local housing finance agency. Below that, fill in the name of the city where the office is located.

Dnqem 4 < Fill in the name of the project, such as "Greenwood Apts." If the name has not yet been selected, write "Name unknown." Below that, enter the HUD contract or project identification number, the Farmers Home Administration project number, or

the State or local housing finance agency project or contract number. Include **cm** project or contract identification numbers that are relevant to the project. Also enter the name of the city in which the project is located, and the ZIP Code.

Dnqem 5 < Fill in the dollar amount requested in the proposed mortgage, or the annual amount of rental assistance requested.

Dnqem 6 < Fill in the number of apartment units proposed, such as "40 units." For hospital projects or nursing homes, fill in the number of beds proposed, such as "100 beds."

Dnqem 7 < Fill in the section of the Housing Act under which the application is filed.

Dnqem 9 < Definitions of all those who are considered principals and affiliates are given above in the section titled "Who Must Sign and File...."

Dnqem < Beside the name of each principal, fill in the appropriate role. The following are examples of possible roles that the principals may assume: Owner/Mortgagor, Managing Agent, Sponsor, Developer, General Contractor, Packager, Consultant, Nursing Home Administrator etc.

Dnqem < Fill in the percentage of ownership in the proposed project that each principal is expected to have.

Dnqem 32 < Fill in the Social Security Number or IRS employer number of every principal listed, including affiliates.

Kpnt wekpulhqt Ego r gwpki Uñ g wv C
Be sure that Schedule A is filled-in completely, accurately and the certification is properly dated and signed, because it will serve as a legal record of your previous experience. All Multifamily Housing projects involving HUD/ FinHA, and State and Local Housing Finance Agencies in which you have previously participated **o wv dg** listed. Applicants are reminded that previous participation pertains to the individual principal within an entity as well as the entity itself. A newly formed company may not have previous participation, but the principals within the company may have had extensive participation and disclosure of that activity is required.

Eqwv p 40 All previous projects must be listed or your certification cannot be processed. Include the name of all projects, project number, city where it is located and the governmental agency (HUD, USDA-FinHA or state or local housing finance agency) that was involved.

Eqwv p 50 List the role(s) as a principal, dates participated and if fee or identity of interest (IOD) with owners.

Egno p 60Indicate the current status of the loan. Except for current loan, the date associated with the status is required. Loans under a workout arrangement are considered assigned. For all noncurrent loans, an explanation of the status is required.

Egno p 70 Explain any project defaults during your participation.

Egno p 80Provide the latest Management Review (MOR) rating and Physical Inspection score.

Egnt 11After you have completed all other parts of

form HUD-2530, including schedule A, read the certification carefully. In the box below the statement of the certification, fill in the names of all principals and affiliates as listed in block 7. Each principal should sign the certification with the exception in some cases of individuals associated with a corporation (see "Exception for Corporations" in the section of the instructions titled "Who Must Sign and File Form HUD-2530). Principal who is signing on behalf of the entity should attach signature authority document. Each principal who signs the form

should fill in the date of the signature and a telephone number. By providing a telephone number, HUD can reach you in the event of any questions.

If you cannot certify and sign the certification as it is printed because some statements do not correctly describe your record, use a pen to strike through those parts that differ with your record, and then sign and certify. Attach a signed statement of explanation of the items you have struck out on the certification. Item 2c. relates to felony convictions within the past 10 years. If you are convicted of a felony within the past 10 years, strike out 2c. and attach statement of explanation. A felony conviction will not necessarily cause your participation to be disapproved unless there is a criminal record or other evidence that your previous conduct or method of doing business has been such that your participation in the project would make it an unacceptable risk from the underwriting stand point of an insurer, lender or governmental agency.

The Department of Housing and Urban Development (HUD) is authorized to collect this information by law (42 U.S.C. 3535(d) and 24 C.F.R. 200.217) and by regulation at 24 CFR 200.210. This information is needed so that principals applying to participate in multifamily programs can become HUD-approved participants. The information you provide will enable HUD to evaluate your record with respect to established standards of performance, responsibility and eligibility. Without prior approval, a principal may not participate in a proposed or existing multifamily project. HUD uses this information to evaluate whether or not principals pose an unsatisfactory underwriting risk. The information is used to evaluate the potential principals and approve only individuals and organizations that will honor their legal, financial and contractual obligations.

Rtkce{ Cev Uevgo gpv The Housing and Community Development Act of 1987, 42 U.S.C. 3543 requires persons applying for a Federally-insured or guaranteed loan to furnish his/her Social Security Number (SSN). HUD must have your SSN for identification of your records. HUD may use your SSN for automated processing of your records and to make requests for information about you and your previous records with other public agencies and private sector sources. HUD may disclose certain information to Federal, State and local agencies when relevant to civil, criminal, or regulatory investigations and prosecutions. It will not be otherwise disclosed or released outside of HUD, except as required and permitted by law. You must provide all of the information requested in this application, including your SSN.

Rwdhle tgr qt vpi dwtf gp for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number.

A response is mandatory. Failure to provide any of the information will result in your disapproval of participation in this HUD program.

SECTION 00 52 20

PRIME BIDDER'S AFFIDAVIT OF NON COLLUSION

STATE OF _____)

COUNTY OF _____)

being first duly sworn, deposes and says that:

1. He or she is _____
(Owner, partner, officer, representative or Agent)

of _____
(The bidder who has submitted the attached Bid)
2. He or she is fully informed respecting the preparation and contents of the attached bid and of all pertinent circumstances respecting such bid;
3. Such bid is genuine and is not a collusive or sham bid;
4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affidavit, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other bidder, firm of persons, to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any way, manner, directly or indirectly, sought by Agreement or Collusion or communication or conference with any other bidder, firm or person, to fix the price or prices in the attached Bid, or to secure through any collusion, conspiracy, connivance, or unlawful agreement, any advantage against the Housing And Redevelopment Authority of Crosby, Crosby, Minnesota, or any person interested in the proposed Contract; and
5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affidavit.

(Signed) _____

Title

Subscribed and sworn to before me

this _____ day of _____, 2016.

Title _____

My commission expires _____.

END OF SECTION

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SECTION 00 52 30

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

STATE OF _____)
COUNTY OF _____)

_____ being first duly sworn, deposes and says that:

1. He or she is _____ of _____
(Title)(Name of Organization) _____ hereinafter referred to as
the "Subcontractor";
2. He or she is fully informed respecting the preparation and contents of the
subcontractor's Proposal submitted by the subcontractor to _____
the Contractor for certain work in connection with the _

Contract pertaining to the Project in CROSBY, MINNESOTA;

3. Such subcontractor's Proposal is genuine and is not a collusive or sham proposal;
4. Neither the subcontractor nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affidavit, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such Contract or to refrain from submitting a Proposal in connection with such Contract, or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any other Bidder, firm or person to fix the price or prices in said subcontractor's Proposal, or to secure through collusion, conspiracy, connivance, or unlawful agreement, any advantage against the HOUSING & REDEVELOPMENT AUTHORITY OF CROSBY, CROSBY, MINNESOTA, or any person interested in the proposed Contract; and
5. The price or prices quoted in the subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties of interest, including this affidavit.

(Signed) _____

Title

Subscribed and sworn to before me

this _____ day of _____, 2019.

Title _____

My commission expires _____.

END OF SECTION

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SECTION 00 52 40
PERFORMANCE AND PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, THAT WE _____,
_____, as principal, and
_____ as
sureties, hereby acknowledge and recognize ourselves held and firmly bound to the
HOUSING & REDEVELOPMENT AUTHORITY OF CROSBY, CROSBY, MINNESOTA, a
publicbody,
corporate and politic, obligee, in the sum of
- _____ dollar
s, lawful money of the United States to be paid to said obligee for its use and the use of all
persons and corporations doing work or furnishing skill, tools, machinery, materials,
insurance, equipment or supplies for any camp maintained for the keeping of people and
animals engaged under, or for the purpose of, the Contract hereinafter referred to and
described, _____ heir,
legal representatives, successors and assigns, for which payment well and truly to be made
we bind ourselves, our respective heirs and legal representatives heirs and legal
representatives, jointly and severally, firmly by these presents:
THE CONDITIONS OF THIS OBLIGATION ARE SUCH: That whereas said principal has
entered into a contract with said obligee for _____.

NOW, THEREFORE, If said principal shall perform and complete said contract according to
its terms; shall pay, as they become due, all just claims for such work, tools, machinery, skill,
materials, insurance premiums, equipment and supplies, for the completion of said contract in
accordance with its terms, including equipment and supplies for any camp maintained for
feeding and keeping of people and animals for the performance of said contract; shall save
said obligee harmless from all costs and charges that may accrue on account of the doing of
said work specified in said contract and for enforcing the terms of this bond in all actions
which may be brought thereon and successfully maintained, including reasonable attorneys'
fees; shall comply with all laws appertaining to said contract and said work; shall, in case the
contract price specified in said contract shall for any reason be increased, furnish an
additional bond in the sum at least of such increase within ten days after demand therefore in
writing from said obligee; and shall pay all costs and disbursements, including reasonable
attorney's fees, in any and all actions which shall be successfully maintained for the enforcing
of the terms of this bond; then this obligation shall become void; otherwise it shall be and
remain of full force and effect.

IN WITNESS WHEREOF, We have hereunto set our hands this
_____ day of _____, 2019.

In the Presence of: _____

END OF SECTION

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DOCUMENT 00 60 00

PROJECT FORMS

1.01 FORM OF AGREEMENT AND GENERAL CONDITIONS

- A. The form of Owner | Contractor Agreement shall be found under specification section 00 52 00 – Contract Form
 - 1. The General Conditions are included in the Project Manual.
 - 2. The Supplementary Conditions for Project are separately prepared and included in the Project Manual.
 - 3. Owner's document(s) are included in the Project Manual.

1.02 ADMINISTRATIVE FORMS

- A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.
- B. Copies of AIA standard forms may be obtained from the American Institute of Architects; <http://www.aia.org/contractdocs/purchase/index.htm>; docspurchases@aia.org; (800) 942-7732.
- C. Preconstruction Forms:
 - 1. Form of Performance Bond and Labor and Material Bond: AIA Document A312, "Performance Bond and Payment Bond."
 - 2. Form of Certificate of Insurance: AIA Document G715, "Supplemental Attachment for ACORD Certificate of Insurance 25-S."
- D. Information and Modification Forms:
 - 1. Form for Requests for Information (RFIs): AIA Document G716, "Request for Information (RFI)."
 - 2. Form of Request for Proposal: AIA Document G709, "Work Changes Proposal Request."
 - 3. Change Order Form: AIA Document G701, "Change Order."
 - 4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G707, "Architect's Supplemental Instructions."
 - 5. Form of Change Directive: AIA Document G714, "Construction Change Directive."
- E. Payment Forms:
 - 1. Schedule of Values Form: AIA Document G703, "Continuation Sheet."
 - 2. Payment Application: AIA Document G702/703, "Application and Certificate for Payment and Continuation Sheet."
 - 3. Form of Contractor's Affidavit: AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 - 4. Form of Affidavit of Release of Liens: AIA Document G706A, "Contractor's Affidavit of Payment of Release of Liens."
 - 5. Form of Consent of Surety: AIA Document G707, "Consent of Surety to Final Payment."

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SECTION 00 72 00

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

See HUD-5370, General Conditions of the Contract for Construction bound in the Project Manual.

END OF SECTION

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General Conditions for Construction Contracts - Public Housing Programs

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing
OMB Approval No. 2577-0157 (exp. 3/31/2020)

Applicability. This form is applicable to any construction/development contract greater than \$150,000.

This form includes those clauses required by OMB's common rule on grantee procurement, implemented at HUD in 2 CFR 200, and those requirements set forth in Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, implemented by HUD at 24 CFR Part 135. The form is required for construction contracts awarded by Public Housing Agencies (PHAs).

The form is used by Housing Authorities in solicitations to provide necessary contract clauses. If the form were not used, HAs would be unable to enforce their contracts.

Public reporting burden for this collection of information is estimated to average 1.0 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Responses to the collection of information are required to obtain a benefit or to retain a benefit.

The information requested does not lend itself to confidentiality.

HUD may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB number.

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1. Definitions

- (a) "Architect" means the person or other entity engaged by the PHA to perform architectural, engineering, design, and other services related to the work as provided for in the contract. When a PHA uses an engineer to act in this capacity, the terms "architect" and "engineer" shall be synonymous. The Architect shall serve as a technical representative of the Contracting Officer. The Architect's authority is as set forth elsewhere in this contract.
- (b) "Contract" means the contract entered into between the PHA and the Contractor. It includes the forms of Bid, the Bid Bond, the Performance and Payment Bond or Bonds or other assurance of completion, the Certifications, Representations, and Other Statements of Bidders (form HUD-5370), these General Conditions of the Contract for Construction (form HUD-5370), the applicable wage rate determinations from the U.S. Department of Labor, any special conditions included elsewhere in the contract, the specifications, and drawings. It includes all formal changes to any of those documents by addendum, change order, or other modification.
- (c) "Contracting Officer" means the person delegated the authority by the PHA to enter into, administer, and/or terminate this contract and designated as such in writing to the Contractor. The term includes any successor Contracting Officer and any duly authorized representative of the Contracting Officer also designated in writing. The Contracting Officer shall be deemed the authorized agent of the PHA in all dealings with the Contractor.
- (d) "Contractor" means the person or other entity entering into the contract with the PHA to perform all of the work required under the contract.
- (e) "Drawings" means the drawings enumerated in the schedule of drawings contained in the Specifications and as described in the contract clause entitled Specifications and Drawings for Construction herein.
- (f) "HUD" means the United States of America acting through the Department of Housing and Urban Development including the Secretary, or any other person designated to act on its behalf. HUD has agreed, subject to the provisions of an Annual Contributions Contract (ACC), to provide financial assistance to the PHA, which includes assistance in financing the work to be performed under this contract. As defined elsewhere in these General Conditions or the contract documents, the determination of HUD may be required to authorize changes in the work or for release of funds to the PHA for payment to the Contractor. Notwithstanding HUD's role, nothing in this contract shall be construed to create any contractual relationship between the Contractor and HUD.
- (g) "Project" means the entire project, whether construction or rehabilitation, the work for which is provided for in whole or in part under this contract.
- (h) "PHA" means the Public Housing Agency organized under applicable state laws which is a party to this contract.
- (i) "Specifications" means the written description of the technical requirements for construction and includes the criteria and tests for determining whether the requirements are met.
- (l) "Work" means materials, workmanship, and manufacture and fabrication of components.
- (a) The Contractor shall furnish all necessary labor, materials, tools, equipment, and transportation necessary for performance of the work. The Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by the PHA pursuant to the clause entitled Availability and Use of Utility Services herein.
- (b) The Contractor shall perform on the site, and with its own organization, work equivalent to at least [] (12 percent unless otherwise indicated) of the total amount of work to be performed under the order. This percentage may be reduced by a supplemental agreement to this order if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the PHA.
- (c) At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.
- (d) The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall hold and save the PHA, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.
- (e) The Contractor shall lay out the work from base lines and bench marks indicated on the drawings and be responsible for all lines, levels, and measurements of all work executed under the contract. The Contractor shall verify the figures before laying out the work and will be held responsible for any error resulting from its failure to do so.
- (f) The Contractor shall confine all operations (including storage of materials) on PHA premises to areas authorized or approved by the Contracting Officer.
- (g) The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. After completing the work and before final inspection, the Contractor shall (1) remove from the premises all scaffolding, equipment, tools, and materials (including rejected materials) that are not the property of the PHA and all rubbish caused by its work; (2) leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer; (3) perform all specified tests; and, (4) deliver the installation in complete and operating condition.
- (h) The Contractor's responsibility will terminate when all work has been completed, the final inspection made, and the work accepted by the Contracting Officer. The Contractor will then be released from further obligation except as required by the warranties specified elsewhere in the contract.

3. Architect's Duties, Responsibilities, and Authority

- (a) The Architect for this contract, and any successor, shall be designated in writing by the Contracting Officer.

2. Contractor's Responsibility for Work

-
- (b) The Architect shall serve as the Contracting Officer's technical representative with respect to architectural, engineering, and design matters related to the work performed under the contract. The Architect may provide direction on contract performance. Such direction shall be within the scope of the contract and may not be of a nature which: (1) institutes additional work outside the scope of the contract; (2) constitutes a change as defined in the Changes clause herein; (3) causes an increase or decrease in the cost of the contract; (4) alters the Construction Progress Schedule; or (5) changes any of the other express terms or conditions of the contract.
- (c) The Architect's duties and responsibilities may include but shall not be limited to:
- (1) Making periodic visits to the work site, and on the basis of his/her on-site inspections, issuing written reports to the PHA which shall include all observed deficiencies. The Architect shall file a copy of the report with the Contractor's designated representative at the site;
 - (2) Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of change orders and other contract modifications for issuance by the Contracting Officer;
 - (3) Reviewing and making recommendations with respect to - (i) the Contractor's construction progress schedules; (ii) the Contractor's shop and detailed drawings; (iii) the machinery, mechanical and other equipment and materials or other articles proposed for use by the Contractor; and, (iv) the Contractor's price breakdown and progress payment estimates; and,
 - (4) Assisting in inspections, signing Certificates of Completion, and making recommendations with respect to acceptance of work completed under the contract.

4. Other Contracts

The PHA may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with PHA employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by PHA employees

Construction Requirements

5. Pre-construction Conference and Notice to Proceed

- (a) Within ten calendar days of contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with representatives of the PHA, its Architect, and other interested parties convened by the PHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract. The PHA will provide the Contractor with the date, time, and place of the conference.
- (b) The contractor shall begin work upon receipt of a written Notice to Proceed from the Contracting Officer or designee. The Contractor shall not begin work prior to receiving such notice.

6. Construction Progress Schedule

- (a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring labor, materials, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments or take other remedies under the contract until the Contractor submits the required schedule.
- (b) The Contractor shall enter the actual progress on the chart as required by the Contracting Officer, and immediately deliver three copies of the annotated schedule to the Contracting Officer. If the Contracting Officer determines, upon the basis of inspection conducted pursuant to the clause entitled Inspection and Acceptance of Construction, herein that the Contractor is not meeting the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the PHA. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.
- (c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the Default clause of this contract.

7. Site Investigation and Conditions Affecting the Work

- (a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to, (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is

reasonably ascertainable from an inspection of the site, including all exploratory work done by the PHA, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the PHA.

- (b) The PHA assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the PHA. Nor does the PHA assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

8. Differing Site Conditions

- (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site(s), of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.
- (b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. Work shall not proceed at the affected site, except at the Contractor's risk, until the Contracting Officer has provided written instructions to the Contractor. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, the Contractor shall file a claim in writing to the PHA within ten days after receipt of such instructions and, in any event, before proceeding with the work. An equitable adjustment in the contract price, the delivery schedule, or both shall be made under this clause and the contract modified in writing accordingly.
- (c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.
- (d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

9. Specifications and Drawings for Construction

- (a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be

promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

- (b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.
- (c) Where "as shown" "as indicated", "as detailed", or of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place" that is "furnished and installed".
- (d) "Shop drawings" means drawings, submitted to the PHA by the Contractor, subcontractor, or any lower tier subcontractor, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The PHA may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- (e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with other contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the PHA's reasons therefore. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.
- (f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Architect approves any such variation and the Contracting Officer concurs, the Contracting Officer shall issue an appropriate modification to the contract, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.
- (g) It shall be the responsibility of the Contractor to make timely requests of the PHA for such large scale and full size drawings, color schemes, and other additional information, not already in his possession, which shall be

required in the planning and production of the work. Such requests may be submitted as the need arises, but each such request shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.

- (h) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the PHA and one set will be returned to the Contractor. As required by the Contracting Officer, the Contractor, upon completing the work under this contract, shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the work is completed and accepted.
- (i) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by subcontractors are submitted to the Contracting Officer.

10. As-Built Drawings

- (a) "As-built drawings," as used in this clause, means drawings submitted by the Contractor or subcontractor at any tier to show the construction of a particular structure or work as actually completed under the contract. "As-built drawings" shall be synonymous with "Record drawings."
- (b) As required by the Contracting Officer, the Contractor shall provide the Contracting Officer accurate information to be used in the preparation of permanent as-built drawings. For this purpose, the Contractor shall record on one set of contract drawings all changes from the installations originally indicated, and record final locations of underground lines by depth from finish grade and by accurate horizontal offset distances to permanent surface improvements such as buildings, curbs, or edges of walks.
- (c) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all as-built drawings prepared by subcontractors are submitted to the Contracting Officer.

11. Material and Workmanship

- (a) All equipment, material, and articles furnished under this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the contract to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.
- (b) Approval of equipment and materials.
 - (1) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the

machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

- (2) When required by the specifications or the Contracting Officer, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid. The Contractor shall label, or otherwise properly mark on the container, the material or product represented, its place of origin, the name of the producer, the Contractor's name, and the identification of the construction project for which the material or product is intended to be used.
- (3) Certificates shall be submitted in triplicate, describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.
- (4) Approval of a sample shall not constitute a waiver of the PHA right to demand full compliance with contract requirements. Materials, equipment and accessories may be rejected for cause even though samples have been approved.
- (5) Wherever materials are required to comply with recognized standards or specifications, such specifications shall be accepted as establishing the technical qualities and testing methods, but shall not govern the number of tests required to be made nor modify other contract requirements. The Contracting Officer may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples. Check tests will be made on materials delivered for use only as frequently as the Contracting Officer determines necessary to insure compliance of materials with the specifications. The Contractor will assume all costs of retesting materials which fail to meet contract requirements and/or testing materials offered in substitution for those found deficient.
- (6) After approval, samples will be kept in the Project office until completion of work. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.
- (c) Requirements concerning lead-based paint. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846) as implemented by 24 CFR Part 35.

12. Permits and Codes

- (a) The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules and regulations. Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the contract, all work installed shall comply with all applicable codes and regulations as amended by any

waivers. Before installing the work, the Contractor shall examine the drawings and the specifications for compliance with applicable codes and regulations bearing on the work and shall immediately report any discrepancy it may discover to the Contracting Officer. Where the requirements of the drawings and specifications fail to comply with the applicable code or regulation, the Contracting Officer shall modify the contract by change order pursuant to the clause entitled Changes herein to conform to the code or regulation.

- (b) The Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of the work. Where the PHA can arrange for the issuance of all or part of these permits, fees and licenses, without cost to the Contractor, the contract amount shall be reduced accordingly.

13. Health, Safety, and Accident Prevention

- (a) In performing this contract, the Contractor shall:
 - (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
 - (2) Protect the lives, health, and safety of other persons;
 - (3) Prevent damage to property, materials, supplies, and equipment; and,
 - (4) Avoid work interruptions.
- (b) For these purposes, the Contractor shall:
 - (1) Comply with regulations and standards issued by the Secretary of Labor at 29 CFR Part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96), 40 U.S.C. 3701 et seq.; and
 - (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.
- (c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904.
- (d) The Contracting Officer shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.
- (e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as the PHA, the Secretary of Housing and Urban Development, or the Secretary of Labor shall direct as a means of enforcing such provisions.

14. Temporary Heating

The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to properly protect all work and materials against damage by dampness and cold, to dry out the work, and to facilitate the completion of the work. Any permanent heating equipment used shall be turned over to the PHA in the condition and at the time required by the specifications.

15. Availability and Use of Utility Services

- (a) The PHA shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the PHA or, where the utility is produced by the PHA, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.
- (b) The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the PHA, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

16. Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements

- (a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed under this contract, and which do not unreasonably interfere with the work required under this contract.
- (b) The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during performance of this contract, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- (c) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Prior to disturbing the ground at the construction site, the Contractor shall ensure that all underground utility lines are clearly marked.
- (d) The Contractor shall shore up, brace, underpin, secure, and protect as necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected by the excavations or other operations connected with the construction of the project.
- (e) Any equipment temporarily removed as a result of work under this contract shall be protected, cleaned, and replaced in the same condition as at the time of award of this contract.

- (f) New work which connects to existing work shall correspond in all respects with that to which it connects and/or be similar to existing work unless otherwise required by the specifications.
- (g) No structural members shall be altered or in any way weakened without the written authorization of the Contracting Officer, unless such work is clearly specified in the plans or specifications.
- (h) If the removal of the existing work exposes discolored or unfinished surfaces, or work out of alignment, such surfaces shall be refinished, or the material replaced as necessary to make the continuous work uniform and harmonious. This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different planes or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.
- (i) The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before the commencement of any work.
- (j) The Contractor shall indemnify and save harmless the PHA from any damages on account of settlement or the loss of lateral support of adjoining property, any damages from changes in topography affecting drainage, and from all loss or expense and all damages for which the PHA may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.
- (k) The Contractor shall repair any damage to vegetation, structures, equipment, utilities, or improvements, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

17. Temporary Buildings and Transportation of Materials

- (a) Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the PHA. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- (b) The Contractor shall, as directed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

18. Clean Air and Water

The contractor shall comply with the Clean Air Act, as amended, 42 USC 7401 et seq., the Federal Water Pollution Control Water Act, as amended, 33 U.S.C. 1251 et seq., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

19. Energy Efficiency

The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under the contract is performed.

20. Inspection and Acceptance of Construction

- (a) Definitions. As used in this clause -
 - (1) "Acceptance" means the act of an authorized representative of the PHA by which the PHA approves and assumes ownership of the work performed under this contract. Acceptance may be partial or complete.
 - (2) "Inspection" means examining and testing the work performed under the contract (including, when appropriate, raw materials, equipment, components, and intermediate assemblies) to determine whether it conforms to contract requirements.
 - (3) "Testing" means that element of inspection that determines the properties or elements, including functional operation of materials, equipment, or their components, by the application of established scientific principles and procedures.
- (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. All work is subject to PHA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.
- (c) PHA inspections and tests are for the sole benefit of the PHA and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for loss or damage of the material before acceptance; (3) constitute or imply acceptance; or, (4) affect the continuing rights of the PHA after acceptance of the completed work under paragraph (j) below.
- (d) The presence or absence of the PHA inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specifications without the Contracting Officer's written authorization. All instructions and approvals with respect to the work shall be given to the Contractor by the Contracting Officer.
- (e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The PHA may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The PHA shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

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- (f) The PHA may conduct routine inspections of the construction site on a daily basis.
 - (g) The Contractor shall, without charge, replace or correct work found by the PHA not to conform to contract requirements, unless the PHA decides that it is in its interest to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.
 - (h) If the Contractor does not promptly replace or correct rejected work, the PHA may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor, or (2) terminate for default the Contractor's right to proceed.
 - (i) If any work requiring inspection is covered up without approval of the PHA, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor. If at any time before final acceptance of the entire work, the PHA considers it necessary or advisable, to examine work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the Contracting Officer shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
 - (j) The Contractor shall notify the Contracting Officer, in writing, as to the date when in its opinion all or a designated portion of the work will be substantially completed and ready for inspection. If the Architect determines that the state of preparedness is as represented, the PHA will promptly arrange for the inspection. Unless otherwise specified in the contract, the PHA shall accept, as soon as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines and designates can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the PHA's right under any warranty or guarantee.

21. Use and Possession Prior to Completion

- (a) The PHA shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the PHA intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The PHA's possession or use shall not be deemed an acceptance of any work under the contract.
- (b) While the PHA has such possession or use, the Contractor shall be relieved of the responsibility for (1) the loss of or damage to the work resulting from the PHA's possession or use, notwithstanding the terms of the clause entitled Permits and Codes herein; (2) all maintenance costs on the areas occupied; and, (3) furnishing heat, light, power, and water used in the areas

occupied without proper remuneration therefore. If prior possession or use by the PHA delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

22. Warranty of Title

The Contractor warrants good title to all materials, supplies, and equipment incorporated in the work and agrees to deliver the premises together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the premises or anything appurtenant thereto.

23. Warranty of Construction

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (j) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of _____ (one year unless otherwise indicated) from the date of final acceptance of the work. If the PHA takes possession of any part of the work before final acceptance, this warranty shall continue for a period of (one year unless otherwise indicated) from the date that the PHA takes possession.
- (b) The Contractor shall remedy, at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to PHA-owned or controlled real or personal property when the damage is the result of—
 - (1) The Contractor's failure to conform to contract requirements; or
 - (2) Any defects of equipment, material, workmanship or design furnished by the Contractor.
- (c) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for (one year unless otherwise indicated) from the date of repair or replacement.
- (d) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.
- (e) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the PHA shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- (f) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:
 - (1) Obtain all warranties that would be given in normal commercial practice;
 - (2) Require all warranties to be executed in writing, for the benefit of the PHA; and,
 - (3) Enforce all warranties for the benefit of the PHA.
- (g) In the event the Contractor's warranty under paragraph (a) of this clause has expired, the PHA may bring suit at its own expense to enforce a subcontractor's, manufacturer's or supplier's warranty.

- (h) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defect of material or design furnished by the PHA nor for the repair of any damage that results from any defect in PHA furnished material or design.
- (i) Notwithstanding any provisions herein to the contrary, the establishment of the time periods in paragraphs (a) and (c) above relate only to the specific obligation of the Contractor to correct the work, and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to its obligation other than specifically to correct the work.
- (j) This warranty shall not limit the PHA's rights under the Inspection and Acceptance of Construction clause of this contract with respect to latent defects, gross mistakes or fraud.

24. Prohibition Against Liens

The Contractor is prohibited from placing a lien on the PHA's property. This prohibition shall apply to all subcontractors at any tier and all materials suppliers.

Administrative Requirements

25. Contract Period

this contract within _____ calendar days of the effective date of the contract, or within the time schedule established in the notice to proceed issued by the Contracting Officer.

26. Order of Provisions

In the event of a conflict between these General Conditions and the Specifications, the General Conditions shall prevail. In the event of a conflict between the contract and any applicable state or local law or regulation, the state or local law or regulation shall prevail; provided that such state or local law or regulation does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order. In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

27. Payments

- (a) The PHA shall pay the Contractor the price as provided in this contract.
- (b) The PHA shall make progress payments approximately every 30 days as the work proceeds, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer. The PHA may, subject to written determination and approval of the Contracting Officer, make more frequent payments to contractors which are qualified small businesses.
- (c) Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by the Contracting Officer, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a

basis for determining progress payments. The breakdown shall be approved by the Contracting Officer and must be acceptable to HUD. If the contract covers more than one project, the Contractor shall furnish a separate breakdown for each. The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price. The Contractor shall prorate its overhead and profit over the construction period of the contract.

- (d) The Contractor shall submit, on forms provided by the PHA, periodic estimates showing the value of the work performed during each period based upon the approved

submitted not later than _____ days in advance of the date set for payment and are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the Architect prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.

- (e) Along with each request for progress payments and the required estimates, the Contractor shall furnish the following certification, or payment shall not be made: I hereby certify, to the best of my knowledge and belief, that:

- (1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;
- (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements; and,
- (3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

Name:

Title:

Date:

- (f) Except as otherwise provided in State law, the PHA shall retain ten (10) percent of the amount of progress payments until completion and acceptance of all work under the contract; except, that if upon completion of 50 percent of the work, the Contracting Officer, after consulting with the Architect, determines that the Contractor's performance and progress are satisfactory, the PHA may make the remaining payments in full for the work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, the PHA shall reinstate the ten (10) percent (or other percentage as provided in State law) retainage until such time as the Contracting Officer determines that performance and progress are satisfactory.
- (g) The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments.

Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of the PHA's interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the PHA.

- (h) All material and work covered by progress payments made shall, at the time of payment become the sole property of the PHA, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or, (2) waiving the right of the PHA to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of the PHA in the course of their employment, the Contractor shall restore such damaged work without cost to the PHA and to seek redress for its damage only from those who directly caused it.
- (i) The PHA shall make the final payment due the Contractor under this contract after (1) completion and final acceptance of all work; and (2) presentation of release of all claims against the PHA arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. Each such exception shall embrace no more than one claim, the basis and scope of which shall be clearly defined. The amounts for such excepted claims shall not be included in the request for final payment. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned.
- (j) Prior to making any payment, the Contracting Officer may require the Contractor to furnish receipts or other evidence of payment from all persons performing work and supplying material to the Contractor, if the Contracting Officer determines such evidence is necessary to substantiate claimed costs.
- (k) The PHA shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of the PHA to withhold moneys from the Contractor shall in nowise impair the obligations of any surety or sureties under any bonds furnished under this contract.

28. Contract Modifications

- (a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.
- (b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or

responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

- (c) When a proposed modification requires the approval of HUD prior to its issuance (e.g., a change order that exceeds the PHA's approved threshold), such modification shall not be effective until the required approval is received by the PHA.

29. Changes

- (a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:
 - (1) In the specifications (including drawings and designs);
 - (2) In the method or manner of performance of the work;
 - (3) PHA-furnished facilities, equipment, materials, services, or site; or,
 - (4) Directing the acceleration in the performance of the work.
- (b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.
- (c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.
- (d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral orders) before the Contractor gives written notice as required. In the case of defective specifications for which the PHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.
- (e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.
- (f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:

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- (1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs when size of change warrants revision.
 - (2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.
 - (3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change. The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the work.
 - (g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.
 - (h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.
 - (i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.
 - (j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

30. Suspension of Work

- (a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the PHA.
- (b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified (or within a reasonable time if not specified) in this contract an adjustment shall be made for any increase in the cost of performance of the contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have

been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or for which any equitable adjustment is provided for or excluded under any other provision of this contract.

- (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and, (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

31. Disputes

- (a) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract. A claim arising under the contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim. The submission may be converted to a claim by complying with the requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
- (b) Except for disputes arising under the clauses entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
- (c) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the PHA against the Contractor shall be subject to a written decision by the Contracting Officer.
- (d) The Contracting Officer shall, within 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
- (e) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in the PHA in accordance with the PHA's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within (30 unless otherwise indicated) days after receipt of the Contracting Officer's decision.
- (f) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.

32. Default

- (a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to

proceed with the work (or separable part of the work) that has been delayed. In this event, the PHA may take over the work and complete it, by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the PHA resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the PHA in completing the work.

- (b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if—
- (1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God, or of the public enemy, (ii) acts of the PHA or other governmental entity in either its sovereign or contractual capacity, (iii) acts of another contractor in the performance of a contract with the PHA, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and
- (2) The Contractor, within days (10 days unless otherwise indicated) from the beginning of such delay (unless extended by the Contracting Officer) notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the Disputes clause of this contract.
- (c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been for convenience of the PHA.

33. Liquidated Damages

- (a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, as specified in the clause entitled Default of this contract, the Contractor shall pay to the PHA as liquidated damages, the sum of \$ 200.00 [Contracting Officer insert amount] for each day of delay. If different completion dates are specified in the contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this contract, liquidated damages shall not be due the PHA. The Contractor remains liable for damages caused other than by delay.
- (b) If the PHA terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final

completion of the work together with any increased costs occasioned the PHA in completing the work.

- (c) If the PHA does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

34. Termination for Convenience

- (a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of the PHA. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.
- (b) If the performance of the work is terminated, either in whole or in part, the PHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the PHA of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by the PHA to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until the PHA or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the PHA; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.
- (c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise indicated) of receipt of the Contractor's claim.
- (d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

35. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the PHA under the contract may be assigned to a bank, trust company, or other financial institution. Such assignments of claims shall only be made with the written concurrence of the Contracting Officer. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership as approved by the Contracting Officer.

36. Insurance

- (a) Before commencing work, the Contractor and each subcontractor shall furnish the PHA with certificates of insurance showing the following insurance is in force and will insure all operations under the Contract:
- (1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.
- (2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than \$ _____ [Contracting Officer insert amount]

per occurrence to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under (3) below. If the Contractor has a "claims made" policy, then the following additional requirements apply: the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and the extended reporting period may not be less than five years following the completion date of the Contract.

- (3) Automobile Liability on owned and non-owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than \$ _____ [Contracting Officer insert amount] per occurrence.

- (b) Before commencing work, the Contractor shall furnish the PHA with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force. The Builder's Risk Insurance shall be for the benefit of the Contractor and the PHA as their interests may appear and each shall be named in the policy or policies as an insured. The Contractor in installing equipment supplied by the PHA shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by the PHA. The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. It need not be carried on landscape work. Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by the PHA. The Contractor may terminate this insurance on buildings as of the date taken over for occupancy by the PHA. The Contractor is not required to carry Builder's Risk Insurance for modernization work which does not involve structural alterations or additions and where the PHA's existing fire and extended coverage policy can be endorsed to include such work.
- (c) All insurance shall be carried with companies which are financially responsible and admitted to do business in the State in which the project is located. If any such insurance is due to expire during the construction period, the Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the Contracting Officer. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to the Contracting Officer.

37. Subcontracts

- (a) Definitions. As used in this contract -

(1) "Subcontract" means any contract, purchase order, or other purchase agreement, including modifications and change orders to the foregoing, entered into by a subcontractor to furnish supplies, materials, equipment, and services for the performance of the prime contract or a subcontract.

(2) "Subcontractor" means any supplier, vendor, or firm that furnishes supplies, materials, equipment, or services to or for the Contractor or another subcontractor.

- (b) The Contractor shall not enter into any subcontract with any subcontractor who has been temporarily denied participation in a HUD program or who has been suspended or debarred from participating in contracting programs by any agency of the United States Government or of the state in which the work under this contract is to be performed.
- (c) The Contractor shall be as fully responsible for the acts or omissions of its subcontractors, and of persons either directly or indirectly employed by them as for the acts or omissions of persons directly employed by the Contractor.
- (d) The Contractor shall insert appropriate clauses in all subcontracts to bind subcontractors to the terms and conditions of this contract insofar as they are applicable to the work of subcontractors.
- (e) Nothing contained in this contract shall create any contractual relationship between any subcontractor and the PHA or between the subcontractor and HUD.

38. Subcontracting with Small and Minority Firms, Women's Business Enterprise, and Labor Surplus Area Firms

The Contractor shall take the following steps to ensure that, whenever possible, subcontracts are awarded to small business firms, minority firms, women's business enterprises, and labor surplus area firms:

- (a) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- (b) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;
- (c) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- (d) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises; and
- (e) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies.

39. Equal Employment Opportunity

During the performance of this contract, the Contractor agrees as follows:

- (a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or handicap.
- (b) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or handicap. Such action shall include, but not be limited to, (1) employment, (2) upgrading, (3) demotion, (4) transfer, (5) recruitment or recruitment advertising, (6) layoff or termination, (7) rates of pay or other forms of compensation, and (8) selection for training, including apprenticeship.

- (c) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.
- (d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, or handicap.
- (e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (h) In the event of a determination that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, or Federally assisted construction contracts under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.
- (i) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.
- (j) Compliance with the requirements of this clause shall be to the maximum extent consistent with, but not in derogation of, compliance with section 7(b) of the Indian Self-Determination and Education Assistance Act and the Indian Preference clause of this contract.

40. Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.

- (a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- (b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.
- (c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- (d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
- (e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.
- (f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
- (g) With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

41. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this contract or to any benefit that may arise therefrom.

42. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of the PHA, no member of the governing body of the locality in which the project is situated, no member of the governing body of the locality in which the PHA was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

43. Limitations on Payments made to Influence Certain Federal Financial Transactions

- (a) The Contractor agrees to comply with Section 1352 of Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.
- (b) The Contractor further agrees to comply with the requirement of the Act to furnish a disclosure (OMB Standard Form LLL, Disclosure of Lobbying Activities) if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

44. Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and shall save the PHA harmless from loss on account thereof; except that the PHA shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringement. If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent, the Contractor shall promptly notify the Contracting Officer. Failure to give such notice shall make the Contractor responsible for resultant loss.

45. Examination and Retention of Contractor's Records

- (a) The PHA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.
- (b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding \$10,000.
- (c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the Disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the PHA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

46. Labor Standards - Davis-Bacon and Related Acts

If the total amount of this contract exceeds \$2,000, the Federal labor standards set forth in the clause below shall apply to the development or construction work to be performed under the contract.

- (a) Minimum Wages.
 - (1) All laborers and mechanics employed under this contract in the development or construction of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall

be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- (2) (i) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met: (A) The work to be performed by the classification requested is not performed by a classification in the wage determination; and (B) The classification is utilized in the area by the construction industry; and (C) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in classification.
- (3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the

amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

- (b) Withholding of funds. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.
- (c) Payrolls and basic records.
- (1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

- (2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)
- (ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c) (1) of this clause and that such information is correct and complete;
- (B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and
- (C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.
- (iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.
- (3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to

make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

- (d) (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under

the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (3) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- (e) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.
- (f) Contract termination; debarment. A breach of this contract clause may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.
- (g) Compliance with Davis-Bacon and related Act requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (h) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this clause shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the PHA, HUD, the U.S. Department of Labor, or the employees or their representatives.
- (i) Certification of eligibility.
 - (1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

- (2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.
- (j) Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.
- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.
 - (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in subparagraph (j)(1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation of the provisions set forth in subparagraph (j)(1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provisions set forth in subparagraph (j)(1) of this clause.
 - (3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in subparagraph (j)(2) of this clause.
- (k) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

47. Non-Federal Prevailing Wage Rates

- (a) Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State or tribal law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:
 - (1) The applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;
- (b) An applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL-recognized State Apprenticeship Agency; or
- (c) An applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

48. Procurement of Recovered Materials.

- (a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
- (b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

SECTION 00 73 10

SUPPLEMENTARY CONDITIONS - TO THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION - PUBLIC HOUSING PROGRAM

1. SCOPE

Provisions in the Supplementary Conditions shall supersede those in the General Conditions if and where they may conflict. Provisions herein which do not conflict shall be considered supplementary only and the basic requirements in the General Conditions shall remain in effect. The Contractor should thoroughly examine and familiarize himself or herself with the Drawings and Specifications. The Contractor, by Execution of the Contract, shall not be relieved of any obligation under it due to his failure to receive or examine any form or legal instrument or to visit the site and acquaint himself or herself with the existing conditions. The PHA will be justified in rejecting any claim based on facts which the Contractor should have been aware of as a result of such examination. Refer to appropriate paragraphs listed below which modify, change, delete from, or add to the General Conditions Of The Contract For Construction, HUD-5370 (11/2006).

2. CONTRACTOR'S RESPONSIBILITY FOR WORK

The Contractor shall:

Obtain permits, certificates of inspection and other approval and releases by governing authorities as required (including the City of Crosby, Minnesota).

Submit warranties and similar documentation.

Submit maintenance manuals and provide instruction of Owner's operational/maintenance personnel regarding all new equipment / materials.

The Contractor shall prosecute the work continuously and shall clean up continuously, removing excessive debris, construction materials, excavation materials, and equipment from the job site and before final payment is made the Contractor shall complete the clean up and shall put the buildings and premises in a neat and clean condition.

The Contractor shall so prosecute his work that there shall be a minimum of inconvenience to tenants (if any) and shall be responsible for all damages or loss to persons or property that occur as the result of his fault or negligence in connection with the prosecution of the work.

Cutting and patching shall be kept to an absolute minimum by careful planning as Work progresses and then only to the extent required to properly place, support, hang, anchor or install materials and equipment. Patching shall be done to place materials, installed work and finishes in like-new condition, to match adjoining work and shall be performed by workmen skilled in the particular type of work involved.

Where finishes are patched, they shall be patched to the extent necessary to provide unbroken and unpatched appearance and shall be carried to natural break points as necessary. All patching shall be subject to the Owner's approval. Unauthorized or careless cutting will not be permitted. No structural member shall be cut in a manner or to an extent which will affect the structural effectiveness unless shown/indicated.

Within (ten) 10 days after award of Contract, Contractor shall submit a complete list of all work he proposes to sublet, with a list of proposed subcontractors for review and acceptance.

As part of the list of proposed subcontractors, the Contractor shall include a list of the types, brand, manufacturer, trade name or other identification of the product or material the Contractor or proposed subcontractor proposes to supply, furnish or provide. The material or products listed shall fully identify the material or product. The materials and products list will be used in evaluating a proposed subcontractor for acceptance when appropriate to the type or class of work the subcontractor is intended to perform.

Contractor agrees to provide detail of sales taxes paid on Exhibit C (attached) for materials furnished on project from contractor and any subcontractors upon completion of project.

5. PRECONSTRUCTION CONFERENCE AND NOTICE TO PROCEED

Either before or soon after the actual award of the Contract (but in any event prior to the start of construction), the successful Contractor - Subcontractor representatives are requested to attend a Pre-construction Conference with representatives of the PHA, the Architect, and other interested parties. Attendance is not mandatory.

All successful subcontractors are requested to attend the pre-construction conference.

9. SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION

Clarify Article 9 of the General Conditions as follows:

If a Shop Drawing as submitted is in accordance with the Contract requirements, or reasonably inferable therefrom, or specifically indicates a deviation (such deviation is called to the reviewer's attention by "Note Deviation" or similar note) from the Contract requirements which will be in the interest of the Owner and to be so minor as not to involve a change in Contract prime or time for performance, the Drawings will be accepted. The acceptance of shop drawings and setting drawings will be general and, except as otherwise provided in the preceding sentence, shall not be construed as (1) permitting any departure from Contract requirements, (2) relieving Contractor or responsibility from errors in details, dimensions or otherwise that may exist, and (3) accepting departures from additional details or instructions previously furnished by the Architect.

By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

In general, and unless otherwise specified, Shop Drawings shall be submitted by means of a reproducible transparency, to the following requirements:

Transparencies will not be required of equipment brochures, cuts of fixtures, or similar standard manufactured items. For such standard manufactured items, manufacturer's catalog sheets may be furnished, showing illustrated cuts of all items to be furnished, scale details, sizes, dimensions, performance characteristics, capacities, written diagrams and controls and other pertinent information. Unless otherwise specified, submit in six copies, and if accepted, three will be returned to the Contractor.

For all other Shop Drawings, the Contractor shall submit three copies and a reproducible transparency of each drawing, well drawn to provide clear and legible prints. On each transparency, there shall be a clear space of approximately 40 square inches for stamps on right hand side. After completion of reviewing, the Architect/Engineer will retain prints of the transparency for his records and will return the transparency to Contractor. Transparencies returned shall be printed by Contractor in quantity required for his uses.

The Contractor shall provide to the Architect three copies (one for Owner, one for Architect, one for Engineer) of all approved Shop Drawings.

Shop Drawings shall be carefully prepared and submitted for approval without the use of acronyms, abbreviations, or special codes.

12. PERMITS AND CODES

The following wording shall be added to paragraph (a):

"Should the Contractor fail to observe the foregoing provisions or in any event install work at variance with any applicable laws, ordinances, codes or regulations as may be amended by waivers (not withstanding the fact that such installation is in compliance with the Technical Specifications), the Contractor shall remove such work without cost to the PHA but a Change Order shall be issued to cover only the excess cost the Contractor would have been entitled to receive if the change had been made before the Contractor commenced the work on the items involved."

15. AVAILABILITY AND USE OF UTILITY SERVICES

The Owner will provide and pay for electricity used by the Contractor (from existing outlets) provided care is exercised not to waste electricity. Contractor(s) shall provide and pay for all cords, light bulbs, etc. Contractor(s) shall provide and pay for any additional temporary electrical service(s) required.

27. PAYMENTS

The Basic Schedule of Values shall be broken down with separate material and labor amounts and will be used as the basis for the Contractor's Request for Payment.

The schedule shall be divided so as to facilitate payments to Subcontractors. In addition, it shall be divided into various primary parts of the Work to facilitate review of the completion claimed for the various parts.

Periodic Application/Request for Payment shall be on forms AIA G702 and G702A (in triplicate).

Unless otherwise specified, the Contractor may make periodic Requests for Payment, but no more often than monthly, for work satisfactorily completed and for materials and equipment suitably stored and protected at the job site. To be considered, the Request must be received by the Architect at least forty-five (45) days prior to the intended payment date of the Owner, as established by the Owner, supported by such data substantiating the Contractor's right to payment as may be required and specified.

Requests shall follow the cost breakdown of the Basic Schedule of Values. No payment will be recommended or made for: materials and equipment, unless they are on the job site and adequately protected from the elements, vandals, pilferage or other damage; work based on anticipated delivery or progress, rather than actual completion; any work until proper and acceptable bonds and insurance evidence have been filed with the Owner and Architect; requests which are incomplete, incorrect or improperly made out.

No recommendation for payment by the Architect nor any payment by the Owner to the Contractor, nor partial or entire use or occupancy of the Project by the Owner shall constitute an acceptance of any deviation from the Contract Documents. The Contractor and his Surety hereby agree any such recommendation, payment, use or occupancy will in no way relieve them of the obligation to completely fulfill or accomplish all obligations of The Contract and that they waive any actual or alleged rights of subrogation or action against the Owner and the Architect as a result of any such recommendation, payment, use or occupancy.

In the event the Architect is unable to recommend payment in the full amount of the Request, due to Work not satisfactorily complete in the amount represented by the Request, he may revise the amount indicated as due and forward to the Owner, with his recommendation for payment and advise the Contractor of the change.

Following completion of the following requirements, final payment request may be submitted:

1. Complete work listed as incomplete at time of substantial completion, or otherwise assure Owner of subsequent completion of individual incomplete items.
2. Settle liens and other claims, or assure Owner of subsequent settlement.
3. Submit proof of payment on fees and similar obligations.
4. Transfer operational, access, security and similar provisions to Owner; and remove temporary facilities, tools and similar items.
5. Completion of requirements specified in "Project Closeout" section.
6. Obtain Consent of Surety for Final Payment.

29. CHANGES

Add the following to Paragraph C:

The Architect also reserves the right to make minor changes in dimensions, locations, arrangements, or details to accommodate changes in other materials and equipment, improve the work or prevent unforeseen interference with structural or other features. Such changes shall be made without change in the Contract Sum.

33. LIQUIDATED DAMAGES

The Contractor shall commence work to expedite the Contract within the shortest time possible after receipt of the fully executed contract copy and the Notice to Proceed, both as issued by the director of the PHA. Time is of the essence to these Contracts as any delay in the specified substantial completion and completion time as indicated, will cause grave damage to the Owner. Therefore, it is specifically understood and agreed to by the parties hereto:

The sum of \$200.00 per calendar day will be assessed as liquidated damages in the event the project is not certified as substantially complete on or before the date as indicated in the Contractor's bid for completion time.

The sum of \$200.00 per calendar day will be assessed as liquidated damages in the event the project is not complete within 15 calendar days following the date of the certification of substantial completion.

The Owner, in assessing liquidated damages, shall compute the number of calendar days between the specified and certified dates of substantial completion and the actual date of completion, using the accepted architectural and legal guidelines, and that determination of said number of days shall be final and binding upon all parties.

36. INSURANCE

Modify subparagraphs under Paragraph (a), and add the following new paragraphs and limits of liability required thereto:

- Workers' Compensation
- Commercial General Liability
 - Occurrence coverage form
 - Premises - operations
 - Explosion and collapse hazard
 - Underground hazard
 - Independent contractors
 - Broad form property damage
- Contractual Liability
- Products and Completed Operations
- Owners and Contractors Protective Liability
- Personal Injury
- Exclusions related to X C & U coverages shall be deleted
- Elevator Liability on an if any basis
- Commercial Automobile Liability
- Minimum Limits of Liability:
 - Workers' Compensation
 - Per current law/statutes
- Commercial, General and Automobile
 - \$1,000,000 Each Occurrence
 - \$2,000,000 Aggregate
 - \$ 10,000 Maximum Retention
- Builder's Risk (Required by Contractor)
 - 1. Amount equal to appropriated material contract amount.
 - 2. Include installation floater.

Also, add the following new paragraphs to Article 36:

- d. The Contractor shall defend, indemnify and hold harmless the PHA, the Architect/Engineers, their officers, Commissioners, employees and agents from any and all claims, suits, liens, damages or expenses on account of bodily injury, sickness, disease, death, and property damage as a result of the Contractor's operation under this Contract. Further, the Contractor, on all insurances, certificates and/or policies provided by Him/Her for this Contract, shall co-name (as additional insured) the Architect/Engineers and the Owner with their representatives as indemnified along with the Contractor against any and all claims arising during the course of the work.

- e. The Contractor shall purchase and maintain insurance as specified in Article 36 of the General Conditions which shall be deemed to be minimum requirements, as will protect him/her from claims which may arise out of, or result from the Contractor's acts or operations under the Contract, whether such operations be by himself/herself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The required insurance shall be written for not less than the limits specified, or required by law, whichever is greater. Prior to starting the Work and within ten days after notice of award, the Contractor shall furnish two copies of all certificates of coverage to Architect on Minnesota CICC forms, who will then submit to PHA for review. The Work shall not be started and no payment on the Contract will be made until all insurance certificates have been filed and accepted.
- f. The Contractor shall not allow insurance to be canceled, lapse, change by decrease in limits of coverage until the Contract has been completed. Certificates shall bear acknowledgment of the notice requirement. The surety hereinbefore specified under Performance Bond shall be held until such claims (including claims subject to Hold Harmless requirements) have been settled and evidence to such effect suitable to Owner has been furnished.
- g. The Contractor shall be responsible for any damage from other hazards, relating to the Work (unless otherwise covered by insurance herein specified) which results from his operations in connection with the Contract until entire Project and the required guarantee period is complete. Special or additional insurance is a Contractor's option.

38. SUBCONTRACTING WITH SMALL AND MINORITY FIRMS, WOMEN'S BUSINESS ENTERPRISE, AND LABOR SURPLUS AREA FIRMS.

The Contractor is responsible for evaluating the small and minority firms and women's business enterprises for this project.

46. LABOR STANDARDS

See following page(s) for Current General Wage Decision.

49. PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

Prior to signing the Contract, Contractor shall pay the premium for and furnish Performance Bond and Labor and Material Payment Bond in the amount of the Contract Sum to cover faithful performance of the Contract and payment of all obligations arising thereunder. Bonds shall be on Minnesota Statutory Form and with such securities as the Owner approves. The bond shall be in force during the construction period and for one year guarantee period following.

50. PREVIOUS PARTICIPATION CERTIFICATION

The Contractor will be required to complete the subject form, HUD-2530 (02/2013), a copy of which, together with instructions, is attached.

51. HOUSING AND REDEVELOPMENT REQUIRED FORMS

The Contractor may execute and submit several forms as necessary and as directed by the HRA of Crosby which will include, but is not limited to, Minnesota Statute 16A.633 Subdivision 4, Report on Jobs Created or Retained. Any required forms will be provided to the successful Contractor at the Pre-construction Meeting.

END OF SECTION

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EXHIBIT C

Public Housing Refund
Contractor's Statement

Qualifying Entity: _____

Project Name: _____

Invoice Number(s): _____

Based on upon a review of our records for the project in question, it has been determined that the following amounts were paid in sales and/or use taxes.

Purchase Period(s)	Taxable Cost	MN Tax Paid (6.875%)	Local Tax Paid
_____	\$ _____	\$ _____	Brainerd .50%
*If additional taxing jurisdictions exist please attach spreadsheet		\$ _____	Baxter .50%
		\$ _____	Crow Wing .50%

The amounts listed have been paid on the project or that portion of the project which directly relates to the qualifying low-income housing units. This tax amount is for building materials and equipment incorporated into the construction, improvement, or expansion of qualified low-income housing projects, and does not include any amounts paid for equipment and machinery purchased or leased by us and used in fulfillment of this contract.

Our MN Identification Number is: _____

Company Name: _____

Address: _____

Phone: _____

I (We) declare under the penalties of criminal liability for willfully making a false claim that this statement has been examined, and, to the best of my (our) knowledge and belief, is true and complete.

Name: _____

Title: _____

Signature: _____

Date: _____

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SECTION 00 73 30

U.S. DEPARTMENT OF LABOR WAGE CLASSIFICATIONS AND RATES

- A. This project is covered by U.S. Department of Labor Davis-Bacon prevailing wage statutes. Wage rates are the minimum hourly to be paid on this project.
- B. Contractors shall use the most recent revision of the U.S. Department of Labor Wage Classifications and Rates throughout the construction period.
- C. The project shall be designated as follows:
 - State: Minnesota
 - County: Crow Wing
 - Construction Type: Building
- D. Current Wage Classifications and Rates are included after this section. They may also be found at the following website. Additional questions may be directed to the following address:
 - U.S. Department of Labor
 - Employment Standards Administration
 - Wage and Hour Division
 - Washington, D.C. 20210
 - (888) 293-6498
 - email: dbra-faqs@fenix2.dol-esa.gov
 - website: www.access.gpo.gov/davisbacon/mn.html

END OF SECTION

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"General Decision Number: MN20200002 01/03/2020

Superseded General Decision Number: MN20190002

State: Minnesota

Construction Type: Residential

Counties: Aitkin and Crow Wing Counties in Minnesota.

RESIDENTIAL CONSTRUCTION PROJECTS (Consisting of single family homes and apartments up to and including 4 stories)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 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, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 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 calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020

* SUMN1990-007 01/31/1990

	Rates	Fringes
Bricklayer/Blocklayer.....	\$ 11.46	1.61
CARPENTER.....	\$ 11.64	1.20
DRYWALL HANGER.....	\$ 10.40	
Drywall taper.....	\$ 10.58	
ELECTRICIAN.....	\$ 14.59	4.16
LABORER.....	\$ 7.25	

PAINTER.....	\$ 8.00	
PLUMBER.....	\$ 13.82	2.03
ROOFER, Including Built Up, Composition and Single Ply Roofs.....	\$ 11.65	1.20

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

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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 www.dol.gov/whd/govcontracts.

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 Regional Office for the area in which the survey was conducted because those Regional Offices have 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.

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END OF GENERAL DECISION

"

SECTION 00 73 73

JOBS REPORTING PROVISION LANGUAGE FOR CONTRACTS BETWEEN PHA AND CONTRACTORS/SUB CONTRACTORS

- A. Section 12.25 Minnesota Report on Jobs Requirement. Pursuant to Minnesota Statute 16A.633, Subdivision 4 (MN Laws of 2012 Chapter 293, Section 28), the Borrower shall collect, maintain and, upon completion of the Project, provide the information indicated in Attachment VI of the Agreement, to the Commissioner. The information much include, but is not limited to, the following: the number and types of jobs created by the Project, whether the jobs are new or retained, where the jobs are located and the pay ranges of the jobs.
- B. Refer to attachment (next page) for jobs reporting form.

END OF SECTION

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Reporting Period	Agency Number	Agency Name	Legal Citation for Project	Dept ID Responsible for Project	Appropriation	Appropriation Amount	Project Start Date	Project Completion Date	Project Duration in Days	Main County for Project	Funding Source for Project	Job Type	Pay Range	Full-Time Equivalents (FTEs) of Jobs Created	Full-Time Equivalents (FTEs) of Jobs Retained
Select	Select	<none selected>								Select	Select	Select	Select		



SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and Drawing conventions.
7. Miscellaneous provisions.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.03 PROJECT INFORMATION

A. Project Identification: North Star Apartments & Additional Sites – 2020 Flatwork Upgrades.

1. Project Location: 410 East River Rd, Brainerd, MN 56401.

B. Owner: HRA of Brainerd/Crosby 324 East River Road, Brainerd, MN 56401.

1. Owner's Representative: Terry Quick – 218.824.3434.

C. Architect: Wesley Stabs, AIA – TKDA – 11 E. Superior Street, Suite 420, Duluth, MN 55802.

1.04 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. North Star Apartments was built approximately 50 years ago. Since then, the existing concrete entry and plaza flatwork, and sidewalks and plaza has weathered and moved through time. A majority of it was deteriorated and heaved and settled due to years of seasonal freeze and thaw cycles. In addition to the plaza and entrance flatwork, a small modular block retaining wall and additional sidewalk will be replaced on the northeast side of the apartment building. There are additional HRA single and multi-family dwelling sites within the Brainerd city limits that require minor exterior flatwork repair included within the project as well.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.05 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to work areas.
 - 2. Driveways, Walkways and Entrances: Keep driveways parking areas, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.06 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 - 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.07 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7 a.m. to 8 p.m., Monday through Friday, unless otherwise indicated.
 - 1. Weekend Hours: 7 a.m. to 8 p.m.

- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Restricted Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.08 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

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SECTION 01 20 00

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

- 1.01 Section includes method of measurement and payment for the items of work under this Contract.
- 1.02 The BID PROPOSAL shall cover all work shown on the Contract Drawings and/or required by the Specifications. All costs in connection with the work including furnishing of all materials, providing all construction plant and equipment, and performing all necessary labor, coordination, supervision, and management to fully complete the work; shall be included in the unit or lump sum prices quoted in the BID PROPOSAL. All work not specifically set forth as a pay item in the BID PROPOSAL shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the amounts and prices submitted in the BID PROPOSAL.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION – Not Used

END OF SECTION

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SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012300 "Alternates" for products selected under an alternate.
 - 3. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.03 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.04 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use facsimile of form provided in Project Manual.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.05 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.06 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.07 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.

- b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed unless otherwise indicated.
- C. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Substitution request is fully documented and properly submitted.
 - e. Requested substitution will not adversely affect Contractor's construction schedule.
 - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - g. Requested substitution is compatible with other portions of the Work.
 - h. Requested substitution has been coordinated with other portions of the Work.
 - i. Requested substitution provides specified warranty.
 - j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

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SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 2. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.03 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Contractor, Owner, or Architect seeking information required by or clarifications of the Contract Documents.

1.04 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
 - 1. Post copies of list in project meeting room, in temporary field office, and in prominent location in built facility. Keep list current at all times.

1.05 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its own operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.

1.06 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

- a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to coordination drawings in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.
 2. File Submittal Format: Submit or post coordination drawing files using PDF format.
 3. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

1.07 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.

11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716.
1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.08 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
 - 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
 - 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 3. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 30 days prior to the scheduled date of Substantial Completion.
 - 1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 - 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at regular intervals.
 - 1. Coordinate dates of meetings with preparation of payment requests.

2. Attendees: In addition to representatives of Owner, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 01 29 00 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 01 31 00 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
3. Section 01 40 00 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
4. Section 01 77 00 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.

1.03 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.04 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.
 - g. Scheduled dates for purchasing.
 - h. Scheduled date of fabrication.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.05 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
 1. Project name.
 2. Date.
 3. Name of Architect.
 4. Name of Construction Manager.
 5. Name of Contractor.
 6. Name of firm or entity that prepared submittal.
 7. Names of subcontractor, manufacturer, and supplier.
 8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
 9. Category and type of submittal.
 10. Submittal purpose and description.
 11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 12. Drawing number and detail references, as appropriate.
 13. Indication of full or partial submittal.
 14. Location(s) where product is to be installed, as appropriate.
 15. Other necessary identification.
 16. Remarks.
 17. Signature of transmitter.
- B. Options: Identify options requiring selection by Architect.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.06 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Email: Prepare submittals as PDF package, and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.
 - a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 - 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 - 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
 - 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.07 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.
 - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain two sets; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.

3. Number and name of room or space.
 4. Location within room or space.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- H. Test and Research Reports:
1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
 2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
 3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
 4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
 5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.08 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.09 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.10 ARCHITECT'S REVIEW

- A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.
 1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect will discard submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

1.03 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

- E. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- I. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

1.04 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.05 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.
- B. Minimum Quantity or Quality Levels: The 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. Refer uncertainties to Architect for a decision before proceeding.

1.06 ACTION SUBMITTALS

- A. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.07 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.
- F. Reports: Prepare and submit certified written reports and documents as specified.
- G. Permits, Licenses, and Certificates: For Owner's record, 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 performance of the Work.

1.08 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice of Award, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's Construction Schedule.
- B. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- C. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including Subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.

2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
 3. Owner-performed tests and inspections indicated in the Contract Documents.
- D. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- E. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.09 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, telephone number, and email address of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of factory-authorized service representative making report.

2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.10 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens and test assemblies; do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.11 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
 2. Payment for these services will be made from testing and inspection allowances, as authorized by Change Orders.
 3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Engage a qualified testing agency to perform quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 - 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, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform duties of Contractor.
- E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspection equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's Construction Schedule. Update as the Work progresses.
 - 1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.12 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner and as follows:
 - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 - 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 - 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 - 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.01 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.
 - 1. Submit log at Project closeout as part of Project Record Documents.

3.02 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 01 10 00 "Summary" for work restrictions and limitations on utility interruptions.

1.03 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.04 INFORMATIONAL SUBMITTALS

- A. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.
- B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.
- E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
 - 1. Locations of dust-control partitions at each phase of work.

2. HVAC system isolation schematic drawing.
3. Location of proposed air-filtration system discharge.
4. Waste-handling procedures.
5. Other dust-control measures.

1.05 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines.

1.06 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.01 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.01 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.02 SUPPORT FACILITIES INSTALLATION

- A. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- B. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.

- C. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 - 2. Maintain and touch up signs so they are legible at all times.
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00 "Execution."
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Temporary Elevator Use: Use of elevators is not permitted.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- G. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- H. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- I. Temporary Use of Permanent Interior Stairs: Use of stairs for construction traffic will not be permitted.
- J. Restroom Use will not be permitted. Provide temporary onsite toilet facility for workers.

3.03 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
 - 1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Section 011000 "Summary."

- C. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- 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; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.04 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
 - 1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
 - 3. Indicate methods to be used to avoid trapping water in finished work.

3.05 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION

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SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012300 "Alternates" for products selected under an alternate.
 - 3. Section 012500 "Substitution Procedures" for requests for substitutions.

1.03 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "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 that is current as of date of the 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 by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications. Submit a comparable product request, if applicable.

1.04 ACTION SUBMITTALS

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis-of-design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Architect's Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.05 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
 - 1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
 - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.
 - 3. See individual identification sections in Divisions 21, 22, 23, and 26, as required, for additional identification requirements.

1.06 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 and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project 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 Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 6. Protect stored products from damage and liquids from freezing.
 - 7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.07 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 - 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. 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.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
 - a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Architect, whose determination is final.
- B. Product Selection Procedures:
1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: ..."
 2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: ..."
 3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
 - a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: ..."
 4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.
 - a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: ..."

5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
 - a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: ..."
 6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: ..."
 7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
 - a. For approval of products by unnamed manufacturers, comply with requirements in Section 01 25 00 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.02 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 2. Evidence that proposed product provides specified warranty.

3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 4. Samples, if requested.
- B. Submittal Requirements: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 73 00

EXECUTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Installation of the Work.
 - 2. Cutting and patching.
 - 3. Progress cleaning.
 - 4. Starting and adjusting.
 - 5. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 013300 "Submittal Procedures" for submitting surveys.
 - 3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.03 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.04 PREINSTALLATION MEETINGS

- A. Cutting and Patching Conference: Conduct conference at Project site.
 - 1. Prior to submitting cutting and patching plan review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:
 - a. Contractor's superintendent.
 - b. Trade supervisor responsible for cutting operations.
 - c. Trade supervisor(s) responsible for patching of each type of substrate.
 - d. Mechanical, electrical, and utilities subcontractors' supervisors, to the extent each trade is affecting by cutting and patching operations.
 - 2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.05 INFORMATIONAL SUBMITTALS

- A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
 - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.06 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Primary operational systems and equipment.
 - b. Fire separation assemblies.
 - c. Air or smoke barriers.
 - d. Fire-suppression systems.
 - e. Plumbing piping systems.
 - f. Mechanical systems piping and ducts.
 - g. Control systems.
 - h. Communication systems.
 - i. Fire-detection and -alarm systems.
 - j. Conveying systems.
 - k. Electrical wiring systems.
 - l. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Exterior curtain-wall construction.
 - d. Sprayed fire-resistive material.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels, and equipment.
 - g. Noise- and vibration-control elements and systems.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- B. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
 2. List of detrimental conditions, including substrates.

3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.03 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
 - 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.04 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.05 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 degrees F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- 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 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.

3.06 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.07 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MATERIALS MANAGEMENT AND RECYCLING

PART 1 - GENERAL

- 1.01 RELATED DOCUMENTS. Drawings and general provisions of each prime Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- 1.02 SUMMARY
- A. This Section includes required recycling and recovery of the all construction waste materials and applies produced during the Work:
 - 1. Land Clearing Debris. Solid waste generated solely from land clearing operations, such as stumps and trees.
 - 2. Concrete and Masonry. Clean concrete, brick, rock, and masonry.
 - 3. Metals. Metal scrap including iron, steel, copper, brass, and aluminum.
 - 4. Untreated Wood. Unpainted, untreated dimensional lumber, timber beams, engineered wood products, plywood, oriented strand board, Masonite, particleboard, wood shipping pallets, and crates.
 - B. Non-Recyclable Waste. Collect and segregate non-recyclable waste for delivery to an permitted landfill site.
 - 1. Mixed Solid Waste. Solid waste commonly collected as a municipal service, exclusive of waste materials listed above.
- 1.03 DEFINITIONS
- A. Waste Materials are defined as large and small pieces of listed materials which are excess to contract requirements and generally include materials to be recycled and/or recovered from existing construction and items of trimmings, cuttings and damaged goods resulting from new installations, which cannot be effectively used in the Work.
 - B. Recycling is defined as the process of collecting and preparing recyclable materials and reusing them in their original form or in manufacturing processes that do not cause the destruction of recyclable materials in a manner that precludes further use.
 - C. Recovery is defined as any process that reclaims materials, substances, energy, or other products contained within or derived from waste on-site. It includes waste-to-energy, composting, and other processes.
- 1.04 SUBMITTALS
- A. Construction Waste Management Plan. Before start of construction, submit a construction waste management plan for approval of Contracting Officer's Representative indicating how Contractor proposes to collect, segregate, recycle, and recover at least 75% of construction wastes and debris generated by the Work. Submit documentation indicating compliance with regulations specified under "Quality Assurance" article below. Include a list of recycling facilities to which indicated recyclable materials will be sent for recycling. Identify materials that are not recyclable or otherwise recoverable that must be disposed of in a landfill or other means acceptable under governing State of Minnesota and local regulations. List permitted landfills and/or other disposal means to be employed. Indicate instances where compliance with requirements of this specification does not appear to be possible and request resolution from the Contracting Officer through the Contracting Officer's Representative.

- B. Delivery Receipts. Provide to the Construction Quality Manager delivery receipts for waste materials salvaged and sent to permitted waste materials processors or recyclers within 48 hours of delivery that indicate the location and name of firm accepting recyclable waste materials, types of materials, net weights of each type, date of delivery and value of materials.

1.05 QUALITY ASSURANCE

- A. Regulatory Requirements. Comply with applicable requirements of the State of Minnesota and applicable local ordinances and regulations concerning management of construction, demolition, land clearing, inert, and yard trash debris and subsequent modifications and amendments to same.
- B. Disposal Sites, Recyclers, and Waste Materials Processors. Use only facilities properly permitted by the State of Minnesota and by local authorities where applicable.
- C. Implementation. Designate an on-site party responsible for instructing workers and implementing Construction Waste Management Plan. Distribute copies of Construction Waste Management Plan to job site foreman and each subcontractor. Include waste management and recycling in worker orientation. Provide on-site instruction on appropriate separation, handling, recycling, and recovery methods to be used by all parties at the appropriate stages of the work at the site. Include waste management and recycling discussion in pre-fabrication meetings with subcontractors and fabricators. Also include discussion of waste management and recycling in regular job meetings and job safety meetings conducted during the course of work at the site.

1.06 STORAGE AND HANDLING

- A. Site Storage. Remove materials for recycling and recovery from the work location to approved containers or storage area as required. Failure to remove waste materials will be considered cause for withholding payment and termination of Contract.
- B. Position Containers for recyclable and recoverable waste materials at a designated location on the Project Site. If materials are sorted on site, provide separate collection containers or storage areas for not less than the following materials:
 - 1. Concrete and masonry.
 - 2. Metals.
 - 3. Untreated lumber.
 - 4. Paper and cardboard.
- C. Change-Out Loaded Containers for empty containers as demand requires.
- D. Handling. Deposit indicated recyclable, and recoverable materials in storage areas or containers in a clean (no mud, adhesives, solvents, petroleum contamination), debris-free condition. Do not deposit contaminated materials into the containers until such time as such materials have been cleaned.
- E. If the Contamination Chemically combines with the material so that it cannot be cleaned, do not deposit into the recycle containers. In such case, request resolution by the Construction Quality Manager for disposal of the contaminated material. Directions from the Construction Quality Manager do not relieve the Contractor of responsibility for compliance with all legal and regulatory requirements for disposal, nor shall such directions cause a request for modification of the Contract.

1.07 PROJECT/SITE CONDITIONS

- A. Environmental Requirements. Transport recyclable and recoverable waste materials from the Work Area to containers and carefully deposit in the containers without excess noise and interference with other activities, to minimize noise and dust.

- 1. Do not place recyclable waste materials on the ground adjacent to a container.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION

3.01 WASTE MANAGEMENT

- A. General. Implement waste management procedures in accordance with approved Construction Waste Management Plan. Maintain procedure throughout the life of this Contract.
- B. Source Separation On- or Off-Site. Either separate, store, protect, and handle at the project site all identified recyclable and recoverable waste products to prevent contamination of materials and maximize recyclability and recoverability of materials. Or mix all identified recyclable and recoverable waste products for separation off-site.
- C. Arrange for the Regular Collection, transport from the site, and delivery to respective approved recycling centers of indicated recyclable waste materials. Maintain records accessible to the Engineer for verification of construction waste materials recycling and recovery.
- D. Delivery Receipts. Arrange for timely pickups from the site or deliveries to approved recycling facilities of designated waste materials to keep construction site clear and prevent contamination of materials. Keep and maintain records of deliveries to recycling facilities and pickups of waste materials at the site by others as specified above.

3.02 RECYCLABLE WASTE MATERIALS HANDLING

- A. General. The following paragraphs supplement handling requirements for various materials identified for classification and recycling listed in Part 1 "Summary" article above. (Note to author. If the following materials are not recyclable in your area, delete them from the specifications.)
- B. Landclearing Debris. Pile wood debris from landclearing in a clean storage area free from large amounts of dirt and other non-wood materials. Chip smaller size tree limbs on site and use as plant mulch. Transport and dispose of larger tree limbs, trunks and other wood, including tree roots at a county waste and recycling center.
- C. Concrete and Masonry. Free of metals, woods and other contaminants. If possible during demolition, crush existing concrete and concrete masonry units on-site into aggregate size. Store crushed material on-site in clean area to avoid contamination from other materials or building processes. Reuse on-site crushed material for fill, for stabilizing soils, or as base and subbase materials. If crushing on site is impractical, store material during demolition processes on site in clean, uncontaminated area. Transport concrete and masonry materials to a certified concrete recycler as needed.
- D. Metals. Cut items to lengths and sizes to fit within the container provided when necessary. Where there is sufficient quantity of a specific recyclable waste item (for example; salvaged metal roofing or duct work), make special arrangements for items to be bundled, banded or tied, and stack in a designated location for a special pick-up. Coordinate special arrangements with the Construction Quality Manager.

- E. Untreated Wood. Salvaged wood materials to be free of metals, concrete, gypsum wallboard, insulation, and other contaminating materials. Stack dimensional wood into like piles. For example, store 2x4s with other 2x4s, and 2x6s with other 2x6s. Also, if quantity is sufficient, separate piles into lengths of 4-foot increments. Reuse lumber on site as studs, backing, blocking or other uses where appropriate. Stack non-dimensional wood in piles for possible reuse on-site or transport off-site. Depending on size of lumber, recycle or chip wood for plant mulch. If wood materials cannot be used on site, transport to a certified wood recycler or reuse center.
- F. Paper and Cardboard. Classify and handle waste paper goods as follows.
 - 1. Bond Paper. General office quality paper used for specifications, correspondence, copiers, PC laser printers, and FAX machines. Collect in separate container at each workstation and deposit loose in appropriate recycle container as required.
 - 2. Newsprint. Newspapers and tabloid style advertising (slick finish magazines and advertising materials are not typically recyclable). Collect in single location and deposit as required in appropriate recycle container.
 - 3. Diazo Prints (drawings). Set up single location for collection. Roll together to minimize space. Deposit as required in appropriate recycle container.
 - 4. Cardboard and paperboard cartons and boxes. Knock-down, fold flat, and deposit in appropriate recycle container.
- G. Paint Cans and Other Hazardous Materials. Deliver to a State of Minnesota approved hazardous waste site.
- H. Other Items. Where recyclability classification of any given waste material is unclear, verify with the Construction Quality Manager.
- I. Recycled Materials Receiving Sites. Deliver all recyclable items to sites that are state licensed recyclers:

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 013233 "Photographic Documentation" for submitting final completion construction photographic documentation.
 - 2. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 3. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 4. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.03 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at final completion.

1.04 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.05 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.06 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.
 - 5. Submit testing, adjusting, and balancing records.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 3. Complete startup and testing of systems and equipment.
 - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 - 6. Advise Owner of changeover in utility services.
 - 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 - 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 9. Complete final cleaning requirements.
 - 10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.07 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
 5. Submit final completion photographic documentation.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.08 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.

4. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect will return annotated file.
 - b. PDF electronic file. Architect will return annotated file.
 - c. Web-based project software upload. Utilize software feature for creating and updating list of incomplete items (punch list).
 - d. Three paper copies. Architect will return two copies.

1.09 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 1. Submit on digital media acceptable to Architect.
- E. Warranties in Paper Form:
 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 by 11 inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark 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 Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.01 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - g. Sweep concrete floors broom clean in unoccupied spaces.
 - h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - j. Remove labels that are not permanent.
 - k. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - o. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 50 00 Temporary Facilities and Controls.

3.02 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

- B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION

SECTION 02 41 19

SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Demolishing designated building equipment and fixtures.
2. Demolishing designated construction.
3. Cutting and alterations for completion of the Work.
4. Removing designated items for reuse and Owner's retention.
5. Protecting items designated to remain.
6. Removing demolished materials.

1.02 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Demolition Schedule: Indicate overall schedule and interruptions required for utility and building services.

C. Shop Drawings:

1. Indicate demolition and removal sequence.
2. Indicate location of items designated for reuse and Owner's retention.
3. Indicate location and construction of temporary work.

1.03 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition, and subsurface obstructions.

C. Operation and Maintenance Data: Submit description of system, inspection data, and parts lists.

1.04 QUALITY ASSURANCE

A. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection.

B. Conform to applicable code for procedures when hazardous or contaminated materials are discovered.

C. Obtain required permits from authorities having jurisdiction.

1.05 PRE-INSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.06 SEQUENCING

- A. Section 01 10 00 - Summary: Requirements for sequencing.
- B. Owner will conduct salvage operations before demolition begins to remove materials Owner chooses to retain.

1.07 SCHEDULING

- A. Section 01 30 00 - Administrative Requirements: Requirements for scheduling.
- B. Schedule Work to coincide with new construction.
- C. Cooperate with Owner in scheduling noisy operations and waste removal that may impact Owners operation in adjoining spaces.
- D. Perform noisy, malodorous, or dusty work:
 - 1. Between hours of 7:30 A.M. and 4:30 P.M.
- E. Coordinate utility and building service interruptions with Owner.
 - 1. Do not disable or disrupt building fire or life safety systems without three days prior written notice to Owner.
 - 2. Schedule tie-ins to existing systems to minimize disruption.
 - 3. Coordinate Work to ensure fire sprinklers, fire alarms, smoke detectors, emergency lighting, exit signs and other life safety systems remain in full operation in occupied areas.

1.08 PROJECT CONDITIONS

- A. Conduct demolition to minimize interference with adjacent [and occupied] building areas.
- B. Cease operations immediately if structure appears to be in danger and notify Engineer. Do not resume operations until directed.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 PREPARATION

- A. Notify affected utility companies before starting work and comply with their requirements.
- B. Mark location and termination of utilities.
- C. Erect, and maintain temporary barriers and security devices [at locations indicated], including warning signs and lights, and similar measures, for protection of the public, Owner, and existing improvements indicated to remain.
- D. Erect and maintain weatherproof closures for exterior openings.
- E. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued Owner occupancy.
- F. Prevent movement of structure; provide temporary bracing and shoring required to ensure safety of existing structure.

- G. Provide appropriate temporary signage including signage for exit or building egress.
- H. Do not close or obstruct building egress path.
- I. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

3.02 SALVAGE REQUIREMENTS

- A. Coordinate with Owner to identify building components and equipment required to be removed and delivered to Owner.
- B. Tag components and equipment Owner designates for salvage.
- C. Protect designated salvage items from demolition operations until items can be removed.
- D. Carefully remove building components and equipment indicated to be salvaged.
- E. Disassemble as required to permit removal from building.
- F. Package small and loose parts to avoid loss.
- G. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item.
- H. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each disassembled salvaged item.
- I. Deliver salvaged items to Owner. Obtain signed receipt from Owner.

3.03 DEMOLITION

- A. All cuts shall be marked and cleanly cut with an appropriate concrete saw or removed to the nearest joint. Dust and debris shall be removed by sweeping or vacuuming and disposed in a contractor supplied waste receptacle. Any wash water generated onsite shall be contained and disposed of offsite. Discharging wash water onsite will not be allowed.
- B. Conduct demolition to minimize interference with adjacent [and occupied] building areas.
- C. Maintain protected egress from and access to adjacent existing buildings at all times.
- D. Do not close or obstruct [roadways] [sidewalks] without permits.
- E. Cease operations immediately when structure appears to be in danger and notify Engineer.
- F. Disconnect and remove designated utilities within demolition areas.
- G. Cap and identify abandoned utilities at termination points when utility is not completely removed. Annotate Record Drawings indicating location and type of service for capped utilities remaining after demolition.
- H. Carefully remove building components indicated to be reused.
 - 1. Disassemble components as required to permit removal.
 - 2. Package small and loose parts to avoid loss.
 - 3. Mark components and packaged parts to permit reinstallation.
 - 4. Store components, protected from construction operations, until reinstalled.

- I. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
- J. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
- K. Remove temporary Work.

3.04 SCHEDULES

- A. Remove, store and protect the following materials and equipment:
 - 1. Signs.
- B. Remove the following equipment [and materials] for Owner's retention. Deliver to location designated by Engineer:
 - 1. Signs.
- C. Protect the following materials and equipment remaining:
 - 1. Adjacent Roadway.
 - 2. Adjacent mechanical systems.
- D. Demolish the following materials and equipment:
 - 1. Underground utilities as shown in the Plan.
 - 2. Concrete as shown in the Plan.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes the furnishing and installing of miscellaneous steel and iron work, except as otherwise specified; see Article "Related Sections" below. Work required by the drawings that is custom fabricated from metal but is not described in other Sections shall be included under this Section, even if not specifically itemized and described herein. Such work shall be good and suitable for the purpose intended.

1.02 REFERENCES. The current editions of the following publications shall govern all work performed hereunder, unless otherwise specified. No provision of any referenced standard or specification shall be effective to change the duties or responsibilities of the Parties as specifically defined by the Contract Documents.

A. American Society for Testing and Materials (ASTM)

- | | | |
|-----|------------|---|
| 1. | A36/A36M | Standard Specification for Carbon Structural Steel |
| 2. | A53/A53M | Specification for Pipe, Steel, Black, and Hot-Dipped, Zinc-Coated, Welded and Seamless |
| 3. | A108 | Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished |
| 4. | A123/A123M | Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products |
| 5. | A276/A276M | Standard Specification for Stainless Steel Bars and Shapes |
| 6. | A307 | Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 PSI Tensile Strength |
| 7. | A500/A500M | Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes |
| 8. | A572/A572M | Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel |
| 9. | A666 | Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar |
| 10. | A780/A780M | Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings |
| 11. | A786/786M | Standard Specification for Hot-Rolled Carbon Low-Alloy, High Strength Low -Alloy, and Alloy Steel Floor Plates |
| 12. | A793 | Standard Specification for Rolled Floor Plate, Stainless Steel |
| 13. | A992/A992M | Standard Specification of Structural Steel Shapes |

B. The Society for Protective Coatings (SSPC)

- | | | |
|----|----------|---------------------------|
| 1. | SSPC-SP1 | Solvent Cleaning |
| 2. | SSPC-SP2 | Hand Tool Cleaning |
| 3. | SSPC-SP3 | Power Tool Cleaning |
| 4. | SSPC-SP6 | Commercial Blast Cleaning |

1.03 SUBMITTALS.

- A. Shop Drawings for construction and erection of miscellaneous metal fabrications shall be submitted for approval.
1. Shop drawings shall include plans, elevations, and details, including anchorage and accessory items.

2. Show material specifications, including brand name or other identification of shop paint.
 - B. Computations. Where materials or fabrications are indicated to comply with certain requirements for design loadings, include structural computations, material properties, and other information needed for structural analysis.
- 1.04 DELIVERY, STORAGE, AND HANDLING. All material shall be so stored as to protect it from injury of any kind. No damaged material or rusted material shall be used in the structure.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Carbon Steel

1. Wide-Flange and WT Shapes shall conform to ASTM A992, Grade 50.
2. Channels, Angles, Plates and Bars shall comply with ASTM A36, ASTM A529 Grade 50, or ASTM A572 Grade 50.
3. Square and Rectangular Hollow Structural Sections (HSS) shall comply with ASTM A500, Grade C, with 50,000 psi yield.
4. Round Hollow Structural Sections (HSS) shall comply with ASTM A500, Grade C, with 46,000 psi yield.
5. Steel Pipe sections shall conform to ASTM A53 Grade B 35,000 psi yield. ~~Also,~~ pipe shall not have surface defects which impair its appearance

- B. Standard Bolts and Nuts shall conform to ASTM Specification A307, Grade A, and to references therein relative to nuts.

2.02 FINISH/COATINGS

- A. All exterior steel work shall be hot dip galvanized after fabrication unless otherwise noted on the drawings.
- B. Galvanizing Repair Paint shall be ZRC Cold Galvanizing Bituminous/Coal Tar Compound by ZRC Products Co., Quincy, MA; or Corothane I Galvapac by Sherwin Williams Co.; or equal.
- C. Primer shall be as specified in Section 09 96 00 – High Performance Coatings.

2.03 COMPONENTS. Also see Article 1.01 of this Section.

- A. Guardrails and Handrails shall be provided as shown on the drawings. Where not otherwise shown, guardrails and handrails shall be fabricated as follows:
1. Guardrails shall conform to IBC requirements, including 50 plf design load:
 - a. Top Railings: 1-1/2 inch Schedule 40 pipe, with top edge 3'-6" above floor level
 - b. Middle Railings: 1-1/2 inch Schedule 40 pipe less than 21 inch clear to top railing.
 - c. Posts: 1-1/2 inch Schedule 80 pipe, maximum 4'-0" spacing, except 5'-0" spacing is acceptable if the height of post measured to support surface/bracket is no greater than 3'-10".
 - d. Closure-toe guard: 1/4 plate, 4 inches high, max 1/4-inch clearance above floor.
 2. Handrails shall be 1-1/2 inch Schedule 40 pipe, with top edge 2'-10" above surface.
 3. All exterior guardrails and handrails shall be hot-dip galvanized.

4. Railings and handrails shall be neatly fabricated as indicated. Railings and handrails shall be smooth, with all projections and corners ground smooth. Welds shall be flush. Members shall be neatly coped and continuously welded at all junctions. Top rails shall run continuously over posts. All welding shall be done neatly and substantially, with fillets dressed to uniform radius, with all excess metal removed and welds ground smooth.
5. As applicable, coordinate with steel stair construction and construct railing posts for attachment thereto.
6. As applicable, provide sleeves to cast into concrete to receive railing posts, as shown and as required.
7. As applicable, provide mounting steel angle for attaching railing at the edge of the balcony or catwalk. Include anchor devices and bolts.

2.04 FABRICATION

- A. Workmanship shall be good throughout and consistent with the purpose of the work in each case. Bolts and rivets shall be countersunk and flush where exposed to view, except as otherwise shown or specified. Welds exposed to view shall be ground smooth and flush. All joints shall be tight and neat.
- B. Castings shall be smooth and true, with sharp, clean-cut angles and shall be free from defects that would impair their appearance, strength and utility. Where required for strength, connections or bearings, lugs or stiffener ribs, or both, shall be cast on. Surface finishes shall be smooth, except as otherwise shown or specified.
- C. Galvanizing Repair. All galvanized items shall have galvanizing repaired that is damaged by cutting, welding, rough handling, and other means of damage. Galvanizing repair shall be by a high zinc dust content compound for regalvanizing welds and other damage in galvanized steel, complying with ASTM A780 and Federal Specification DOD-P-21035A (Galvanizing Repair Spec.). At all repair areas, provide a 2-3 mil dry film thickness of cold galvanizing compound and extend the coating at least 2 inches beyond all edges of the damaged galvanized area.

2.05 SHOP PAINTING. Unless otherwise specified, steel shall receive primer paint noted in Section 09 96 00. Steel which is to be encased in concrete or within 2 inches or required field welding shall not be painted, but shall be free of grease, oil, and other foreign matter.

- A. Prime Painting. All paint shall be applied by skilled painters. Shop paint shall be applied thoroughly and evenly and well worked into joints and irregularities. Apply one coat or as necessary to a minimum dry film thickness of 1.5 mil (MDFT). Finished painted surfaces shall be suitable for the required field painting specified in Section 09 96 00.

PART 3 - EXECUTION

3.01 ERECTION/INSTALLATION. All of this work shall be set accurately in place and permanently fastened in a neat and workmanlike manner. The work shall be plumb, level, or to the slopes shown, as the case may be.

- A. Furnish all sleeves, bolts, screws, anchors, and expansion shields, etc., and do all drilling, tapping, cutting, etc., as necessary for the installation to be complete.
- B. Set sleeves to receive railing posts, as shown, locating accurately so that each post will be centered in its sleeve with sufficient accuracy so that there will be at least 1/16 inch clearance between the sleeve and post.
 1. Railing posts shall be plumb with a tolerance of 1/8 inch allowed.
 2. If so indicated on the drawings, fill pipe sleeves for railing posts slightly low, and seal at the surface with sealant. Clean off any misplaced material.

- C. Grout, as required, shall be "non-shrink". Mix grout to suitable consistency and place to get solid material, without voids. Finish off exposed grout surfaces smoothly and neatly.
- D. Galvanizing Repair. Clean surfaces as required by anticipated service application as recommended by the manufacturer, and as stated herein. The surface preparation noted here is a minimum, and provide the required higher level of surface preparation noted in ASTM A780, Federal Specification DOD-P-21035A, and manufacturer's recommendations, if the application so warrants. For weld repairs, remove all spatter by power tool cleaning (preferred) per SSPC-SP3; or if unable to use power tools due to clearances, do hand tool cleaning per SSPC-SP2; allow to dry and clean surface with solvent per SSPC-SP1. For other damaged areas, clean per SSPC-SP10, or if field service will include immersion clean per SSPC-SP5.

END OF SECTION

SECTION 07 19 16

SILANE WATER REPELLANTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Water repellent sealer for interior or exterior concrete surfaces as scheduled.

B. Related Sections:

1. Section 32 13 13 - Exterior Concrete Work

1.02 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.

B. Product Data: Submit manufacturer's technical data sheets for each product.

C. Submit list of project references as documented in this Specification under Quality Assurance Article. Include contact name and phone number of person charged with oversight of each project.

D. Quality Control Submittals:

1. Provide protection plan of surrounding areas and non-work surfaces.

1.03 QUALITY ASSURANCE

A. Comply with Section 01 40 00 – Quality Requirements

B. Qualifications:

1. Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products.
2. Manufacturer Qualifications: Company shall be ISO 9001:2000 Certified.
3. Applicator Qualifications: Company with minimum of 5 years experience in application of specified products on projects of similar size and scope, and is acceptable to product manufacturer.
 - a. Successful completion of a minimum of 5 projects of similar size and complexity to specified Work.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Comply with Section 01 60 00 – Product Requirements.

B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

- D. Store in unopened containers in clean, dry area between 35 degrees F (2 degrees C) and 110 degrees F (43 degrees C).

1.05 PROJECT CONDITIONS

A. Environmental Requirements:

1. Minimum application temperature is 20 degrees F (minus 7 degrees C) and rising.
2. Do not apply in rain or when rain is expected within 4 hours. Do not apply above 96 degrees F (35 degrees C) or below 40 degrees F (4 degrees C) or when temperatures are expected to fall below 20 degrees F (minus 7 degrees C) within 12 hours.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, provide products from the following manufacturer:

1. BASF Corporation
Construction Chemicals
889 Valley Park Drive
Shakopee, MN 55379
2. Or Approved Equal.

B. Substitutions: Comply with Section 01 60 00 Product Requirements.

C. Specifications and Drawings are based on manufacturer's proprietary literature from BASF. Other manufacturers shall comply with minimum levels of material and detailing indicated in Specifications or on Drawings. Architect will be sole judge of appropriateness of substitutions.

2.02 MATERIALS

A. Clear, breathable, high-performance, 100 percent silane sealer for protecting new and existing concrete surfaces. Penetrates deeply, sealing out water, chloride ions, and acids, preventing damage from freeze/thaw cycles.

1. Acceptable Product: MasterProtect H 1000 (formerly Hydrozo 100) by BASF.

B. Sealer shall have the following minimum performance:

1. Compliance: Alberta DOT, Type 1c.
2. Silane Content by Weight: 100 percent.
3. Penetration, average depth, depending upon substrate: 0.35 inch (9 mm).
4. Surface Appearance after Application: Unchanged.
5. Flash Point, SETA: Greater than 165 degrees F (62.7 degrees C).
6. Waterproofing Repellency after Heavy Abrasion, Alberta DOT penetrating sealer, Type 1c, 0.35 w/c ratio: 83.5 percent.
7. Water Weight Gain, NCHRP 244 Series II Cube Test:
 - a. 250 sf per gal (6.1 m²/L): 90 percent reduction.
 - b. 400 sf per gal (9.8 m²/L): 85 percent reduction.
8. Absorbed Chloride, NCHRP 244 Series II Cube Test:
 - a. 250 sf per gal (6.1 m²/L): 96 percent reduction.
 - b. 400 sf per gal (9.8 m²/L): 87 percent reduction.

9. Absorbed Chloride, NCHRP 244 Series IV Southern Climate: 98 percent reduction.
10. VOC Content:
 - a. 3.05 lbs per gal (365 g/L), less water and exempt solvents.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

- A. Protection: Protect plant life and surfaces to remain uncoated during application. Use drop cloths or masking as required.
- B. Prepare surfaces in accordance with manufacturer's instructions.
- C. Verify substrate has properly cured. Surfaces shall be clean and structurally sound. Remove dust, dirt, oil, grease, chemical films, coatings and other contaminants before application.
- D. Do not apply sealer if standing water is visible on surface to be treated.

3.02 application

- A. Apply sealer in accordance with manufacturer's instructions.
- B. Stir material thoroughly before and during application.
- C. Apply sealer with flooding action. Eliminate ponding.
- D. Apply even distribution of sealer.

3.03 PROTECTION

- A. Protect sealer from damage during construction.

END OF SECTION

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SECTION 09 67 23

RESINOUS FLOORING OVER ELASTOMERIC WATERPROOFING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes the surface preparation and application requirements of high performance resinous floor coating systems by a qualified applicator.
- B. Coordination:
 - 1. Coordinate surface preparation of substrates to avoid later difficulty or delay in performing the Work of this Section.
 - 2. Review installation procedures under other Sections and coordinate the installation of items that must be installed prior to application of the resinous floor coating systems.
 - 3. Substrate surface preparation and resinous floor coating application, including concrete resurfacing, to be completed by manufacturer's approved Applicator.
 - 4. The Applicator shall coordinate with Architect regarding the availability of work areas, completion times, safety, access and other factors which could impact plant operations.

1.02 REFERENCES

- A. This Section contains references to the governing standards and documents listed below. They are a part of this Section as specified and modified; the current version shall apply unless otherwise noted. In case of conflict between the requirements of this section and those of the listed documents, the more stringent of the requirements shall prevail.
- B. American Concrete Institute (ACI):
 - 1. ACI 301-10 – Specifications for Structural Concrete
 - 2. ACI 308R – Guide to Curing Concrete
- C. ASTM International (ASTM):
 - 1. ASTM D4263 – Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - 2. ASTM D4414 – Standard Practice for Measurement of Wet Film Thickness by Notch Gages.
 - 3. ASTM F1869 – Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
 - 4. ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- D. International Concrete Repair Institute (ICRI):
 - 1. Guideline No. 310.2 – Selecting and Specifying Concrete Surface Preparation for Sealer, Linings, and Polymer Overlays
- E. NACE International (NACE):
 - 1. NACE No. 6/SSPC-SP13 – Surface Preparation of Concrete
- F. SSPC: The Society for Protective Coatings, (SSPC)
 - 1. SSPC-SP13/NACE No. 6 Surface Preparation of Concrete

- G. Unless otherwise specified, references to documents shall mean the documents in effect at the time of receipt of Bids. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents, the last version of the document before it was discontinued.

1.03 SUBMITTALS

- A. Product Data Sheets: Copies of current technical data for each component specified and applied as outlined in this Section.
- B. Safety Data Sheets: Copies of current Safety Data Sheets (SDS) for any materials brought on-site, including clean-up solvents, repair or resurfacing mortars and lining materials.
- C. Installation Instructions: Manufacturer's written installation instructions for the materials specified in this Section.
- D. Qualification Data: Submit proof of acceptability of the Applicator by manufacturer to Architect.
- E. Construction Details: Copies of manufacturer's computer generated standard flooring details.
- F. Jobsite Layout Plan: Including material storage/staging and equipment storage /staging.
- G. Samples: For each resinous floor coating system submit a 3" x 6" sample of the system. Color, Texture and thickness shall be representative of the overall appearance as specified.
- H. Jobsite Reports: Submit at the completion of Work
 - 1. Daily Reports: Include surface preparation, substrate temperature, ambient air temperature, application procedures, materials applied, material quantities, material batch number, description of work completed and location thereof.
 - 2. The Applicator shall maintain a copy of records until the expiration of the specified warranty period.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications:
 - 1. Applicator shall be qualified by the manufacturer prior to bid date.
 - 2. Installation equipment shall be acceptable to the manufacturer.
 - 3. Applicator shall establish quality control procedures and practices to monitor phases of surface preparation, storage, mixing, application, and inspection throughout the duration of the project.
 - 4. Applicator shall provide a fulltime, on-site person whose dedicated responsibilities will include quality control of the application.
 - 5. Applicator's quality control procedures and practices must include the following items:
 - a. Training of personnel in the proper surface preparation requirements.
 - b. Training of personnel in the proper storing, mixing, and application and quality control testing.
- B. Mockups: Apply mockups of each system to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Apply full-thickness mockups on 48-inch- square floor area selected by Architect.
 - a. Include 48-inch length of integral cove base.

2. Simulate finished lighting conditions for Architect's review of mockups.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

C. Pre-Installation Conference:

1. Before installing mock-ups General Contractor, Applicator, and Technical Representative of the Manufacturer shall meet on-site with Architect to discuss approved products and workmanship to ensure proper application of the products and substrate preparation requirements.
2. Review foreseeable methods and procedures related to the Work including but not necessarily limited to the following:
 - a. Review Project Requirements and the Contract Documents.
 - b. Review required submittals.
 - c. Review status of substrate Work, including approval of surface preparations and similar considerations.
 - d. Review requirements of on-site quality control inspection and testing.
 - e. Review the requirements for preparing the quality control report as specified herein.
 - f. Review availability of materials, tradesmen, equipment and facilities needed to make progress and avoid delays.
 - g. Review material storage and staging.
 - h. Review equipment storage and staging.
 - i. Review waste management and disposal.
 - j. Review environmental conditions, other project conditions, and procedures for coping with unfavorable conditions.
 - k. Review regulations concerning code compliance, environmental protection, health, safety, fire and similar considerations.
 - l. Review procedures required for the protection of the completed Work during the remainder of the construction period.

D. Single-Source Responsibility:

1. Materials shall be products of a single manufacturer or items standard with manufacturer of specified resinous floor coating materials.
2. Provide secondary materials which are produced or are specifically recommended by resinous floor coating system manufacturer to ensure compatibility of system.

E. Regulatory Requirements: Conform to applicable codes and ordinances for flame, fuel, smoke and volatile organic compounds (VOC) ratings requirements for finishes at time of application.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery of Materials:

1. Deliver material in manufacturer's original, unopened and undamaged packages.
2. Clearly identify manufacturer's, brand name, contents, color, batch number, and any personal safety hazards associated with the use of or exposure to the materials on each package.
3. Packages showing indications of damage that may affect condition of contents are not acceptable.

B. Storage of Materials:

1. Materials shall be stored in accordance with manufacturer's recommendations in enclosed structures and shall be protected from weather and adverse temperature conditions. Flammable materials shall be stored in accordance with state and local codes. Materials exceeding storage life as defined by the manufacturer shall be removed promptly from the site. Store materials only in area or areas designated by the Architect solely for this purpose.
2. Store in original packaging under protective cover and protect from damage.
3. Stack containers in accordance with manufacturer's recommendations.

C. Handling of Materials: Handle materials in such a manner as to prevent damage to products or finishes.

1.06 JOB CONDITIONS

A. Environmental Requirements:

1. Proceed with Work only when temperature and moisture conditions of substrates, air temperature, relative humidity, dew point and other conditions comply with the manufacturer's written recommendations and when no damaging environmental conditions are forecasted for the time when the material will be vulnerable to such environmental damage. Record such conditions and include in daily quality control report.
2. Maintain substrate temperature and ambient air temperature before, during and after installation above 55°F and rising in accordance with manufacturer's instructions.
3. Provide adequate ventilation during installation and full curing periods of the Work.
4. Coatings shall not be applied when ambient air temperature is within 5°F of the dew point and falling.

B. Dust and Contaminants: Protect work and adjacent areas from excessive dust and airborne contaminants during application and curing. Schedule Work to avoid excessive dust and airborne contaminants.

C. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent light conditions during resinous flooring application.

D. Close space to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

1.07 WARRANTY

A. Submit manufacturer's standard warranty for material.

B. Submit applicator's standard warranty for workmanship.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Products of Tnemec Co., Inc., Kansas City, Missouri (816) 483-3400, ist@tnemec.com, www.tnemec.com are listed to establish a standard of performance and quality.

1. Or Approved Equal.

- B. Request for material substitutions shall be in accordance with requirements of the project specifications. Equivalent materials of other manufacturers may be submitted on written approval of the Architect. No request for substitution shall be considered that would decrease film thickness or offer a change in the generic type of coating specified.
- C. Requests for substitution shall include:
 - 1. Manufacturer's literature for each product giving name, product number, generic type, descriptive information, laboratory testing showing results equal to the performance criteria of the products specified herein.
 - 2. Side by side comparison of the performance attributes of the proposed materials as compared to the specified coating system.
 - 3. List of five (5) projects in which each product has been used and rendered satisfactory service.

2.02 MATERIALS

- A. Tnemec Series 154 Tnemegaurd
- B. Tnemec Series 215 Surfacing Epoxy
- C. Tnemec Series 218-1000 MortarClad
- D. Tnemec Series 248 EverThane

2.03 GENERAL

- A. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

2.04 ACCESSORY MATERIALS

- A. Patching and Fill Material: Resinous product of or approved by manufacturer and recommended by manufacturer for application indicated.
- B. Joint Sealant: Type recommended or produced by manufacturer for type of service and joint condition indicated.

PART 3 - EXECUTION

3.01 GENERAL

- A. The Applicator shall cover or otherwise protect finish work or other surfaces not being coated within the scope of this Section. The Applicator shall erect and maintain protective tarps, enclosures and/or masking to contain debris, including dust or other airborne particles from surface preparation or application activities. This may include the use of dust or debris collection apparatus as required at no additional cost to Owner.

3.02 EXAMINATION

- A. Site Verification of Conditions
 - 1. The Applicator shall examine the areas and conditions under which the resinous floor coating Work is to be performed in accordance with NACE SP0892 and SSPC-SP13/NACE No. 6, and notify Architect in writing of conditions detrimental to the proper and timely completion of the Work.
 - 2. All concrete should be cured using the procedures described in ACI 308, allowing a minimum of 28 days at 75F.

3. The Applicator shall confirm the presence of a vapor barrier to protect against the effects of moisture vapor transmission.
4. Commencement of the Work of this Section shall indicate that the substrate and other conditions of installation are acceptable to the Contractor and his Applicator, and will produce a finished product meeting the requirements of the Specifications. Defects resulting from accepted conditions shall be corrected by the Applicator at his own expense.

3.03 SURFACE PREPARATION

- A. Concrete surfaces to receive resinous floor coatings shall be poured with a Smooth Troweled Finish in accordance with ACI 301.
- B. All surfaces must be clean, dry and free of oil, grease and other contaminants, prior to preparation in accordance with NACE No. 6/SSPC-SP13. Concrete surfaces must be sound and capable of supporting the resinous floor coating system.
- C. Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Shot-blast or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers, existing coatings, and other contaminants and to provide the recommended ICRI-CSP Profile.
- D. Cracks, voids and other surface imperfections should be filled with the recommended filler or surfacer prior to the installation of the materials.
- E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through the resinous floor coating system according to manufacturer's written recommendations.

3.04 APPLICATION

- A. General: Apply components of resinous floor system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
 1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
 2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
 3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
 - a. Apply joint sealant to comply with manufacturer's written recommendations.
- B. Apply products in accordance with Manufacturer's written instruction as outlined in application guides and product data sheets.
- C. Comply with manufacturer's written instructions for mixing and preparing materials and as applicable to substrates.
- D. Terminations shall be installed in accordance with the StrataShield Standard Flooring Details Guide:
- E. Areas not to receive resinous floor coating system shall be masked or otherwise protected to prevent these surfaces from being coated.
- F. Surface Temperature: Prior to application, the surface temperature shall be per manufacturer's written recommendations.

- G. Material Temperature: Prior to application, the material temperature shall be per manufacturer's written recommendations or between 65 degrees F and 85 degrees F. The material shall be stored at these temperatures at least 48 hours prior to use.
- H. Apply resinous floor coatings according to manufacturer's written instructions. Use applicators and techniques suited for resinous floor coatings and substrate indicated.
- I. Apply each material at not less than manufacturer's recommended spreading rate. Provide total cured material thickness indicated or as recommended in writing by manufacturer.

3.05 FIELD QUALITY CONTROL, INSPECTION AND TESTING

- A. The Applicator shall perform the quality control procedures listed below in conjunction with the requirements of this Section.
- B. Inspect materials upon receipt to ensure that they are supplied by the approved Manufacturer.
- C. Surface Profile: Inspect and record substrate profile (anchor pattern). Surfaces shall be profiled equal to the required CSP amplitude as recommended by the resinous floor coating manufacturer in accordance with ICRI Guideline 310.2 and SSPC-SP13/NACE No. 6.
 - 1. Compare and record the substrate profile once every 50 square feet with the Concrete Surface Profile (CSP) comparators in accordance with ICRI Guideline No. 310.2.
- D. Surface Cleanliness: Prepared concrete surfaces shall be inspected for surface cleanliness after cleaning and drying, prior to resurfacing or coating application.
- E. Concrete Moisture Testing: After surface preparation verify concrete dryness in accordance with ICRI Guideline 310.2 and SSPC-SP13/NACE No. 6 and the following test methods.
 - 1. ASTM F1869 – Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
 - a. Moisture vapor transmission not to exceed three pounds per 1,000 square feet in a 24 hour period.
 - 2. ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
 - a. Relative humidity not to exceed 80 percent.
 - 3. ASTM D4263— Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - a. No moisture present
 - 4. Consult manufacturer regarding questions and or recommendations in reference to moisture problems.
- F. Measure and record ambient air temperature, relative humidity and dew point temperature once every two hours of each work shift.
- G. Measure and record substrate temperature once every two hours using an infrared or other surface thermometer.
- H. Dry-Film Thickness shall be determined using a surface area calculation for material consumption.

- I. The Applicator is responsible for keeping the Architect informed of progress so that Architect may provide additional quality control at his discretion.
- J. Inspection by the Architect or others does not absolve the applicator from his responsibilities for quality control inspection and testing as specified herein or as required by the Manufacturer's instructions.
- K. Material Sampling: Owner may at any time and any numbers of times during the resinous flooring application require material samples for testing for compliance with requirements.
 - 1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in the presence of Contractor.
 - 2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
 - 3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.06 MANUFACTURER'S FIELD SERVICES

- A. Manufacturer's technical representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.07 ACCEPTANCE CRITERIA

- A. All surfaces shall be prepared, applied, and tested in accordance with the specification and referenced standards herein.

3.08 CLEANING AND PROTECTING

- A. Protect the completed Work from traffic, physical abuse, liquids, and chemical exposure until the complete system has thoroughly cured for 24 hours.
- B. At the completion of the Work, the Applicator shall remove materials and debris associated with the Work of this Section.
- C. Clean surfaces not designated to receive resinous floor coating system. Restore areas in a manner acceptable to Architect.
- D. Protect the completed Work from damage until Final Acceptance. Resinous floor coating systems damaged in any manner shall be repaired or replaced at the discretion of Architect, at no additional cost to Owner.

3.09 COATING SCHEDULE

- A. Surface Preparation: Prepare in accordance with SSPC-13/NACE 6 and ICRI Technical Guidelines. Abrasive Blast, shot-blast, planetary grind or mechanically abrade concrete surfaces to provide a minimum ICRI-CSP2-3 or greater surface profile.
- B. Patching Material: Series 215 Surfacing Epoxy or Series 218-1000 MortarClad to fill all voids.
- C. Crack Detailing: Series 154 Tnemegaurd to cracks and embedded with Series 211 reinforcing mesh.

- D. Prime Coat: Tnemec Series 154 Tnemegaurd at 115 – 160 square feet per gallon and embedded with Series 211 Octagonal Mesh.
- E. Saturant Coat: Tnemec Series 154 Tnemeguard slurry with at 60 - 80 square feet per gallon broadcasted to refusal with 30/50 mesh sand.
- F. Grout Coat: Tnemec Series 154 Tnemeguard at 60 – 80 square feet per gallon.
- G. Topcoat: Tnemec Series 248 EverThane at 500 - 600 square feet per gallon.
 - 1. Coarse glass beads, aluminum oxide or sharks grip may be added to achieve a slip resistance acceptable by the Architect and Owner.

END OF SECTION

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SECTION 09 96 00

HIGH PERFORMANCE COATINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes surface preparation and the application of high-performance coating systems.
 - 1. Exterior Substrates:
 - a. Galvanized metal.
- B. Related Requirements:
 - 1. Section 05 50 00 "Metal Fabrications" for shop priming of metal fabrications with coatings specified in this Section.

1.03 DEFINITIONS

- A. Gloss: 70 to 85 units at 60 degrees, according to ASTM D 523.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product indicated.
- C. Product List: Cross reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.05 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Coatings: 5 percent, but not less than 1 gallon of each material and color applied.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well ventilated areas with ambient temperatures continuously maintained at not less than 45 degrees F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.07 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50 and 95 degrees F.
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior coatings in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers.
- B. Limited List of Manufacturers: Comply with requirements in Section 016000 "Product Requirements" for consideration of an unnamed product by one of the other named manufacturers.
 - 1. Benjamin Moore & Co., (866) 708-9180, www.benjaminmoore.com.
 - 2. Diamond Vogel, (800) 729-6435, www.diamondvogel.com.
 - 3. PPG Paints, (800) 441-9695, www.ppgpaints.com.
 - 4. Rust-Oleum, (877) 385-8155, www.rustoleum.com.
 - 5. Tnemec, (816) 483-3400, www.tnemec.com.
 - 6. Or Approved Equal.

2.02 EXTERIOR PRIMERS

- A. Epoxy, Anti-corrosive for Metal:
 - 1. Product: Subject to compliance with requirements, provide the following:
 - a. Mult-E-Prime 500 Hi-Build Epoxy by Diamond Vogel.

2.03 EXTERIOR INTERMEDIATE AND TOPCOATS

- A. Epoxy, Gloss:
 - 1. Product: Subject to compliance with requirements, provide the following:
 - a. Mult-E-Poxy 240 Gloss Polyamide Epoxy by Diamond Vogel.

2.04 HIGH PERFORMANCE COATINGS, GENERAL

- A. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
 - 3. Products shall be of same manufacturer for each coat in a coating system.
- B. Colors: Black

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility, with finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface applied protection if any.
- C. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
 - 1. SSPC-SP 10/NACE No. 2.
- E. Shop Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop primed surfaces.
- F. Galvanized Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.
 - 1. Galvanized metal substrates should not be chromate passivated if primers are field applied. If galvanized metal is chromate passivated, consult manufacturers for appropriate surface preparation and primers.

3.03 APPLICATION

- A. Apply high performance coatings according to manufacturer's written instructions.
 - 1. Use applicators and techniques suited for coating and substrate indicated.
 - 2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.

3. Coat backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.
- C. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

3.04 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.05 EXTERIOR HIGH PERFORMANCE COATING SCHEDULE

- A. Galvanized Metal Substrates:
1. Epoxy System:
 - a. Prime Coat: Primer, epoxy, anti-corrosive, for metal.
 - b. Intermediate Coat: Epoxy, matching topcoat.
 - c. Topcoat: Epoxy, gloss.

END OF SECTION

SECTION 31 05 13
SOIL FOR EARTHWORK

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Subbase materials.

1.02 REFERENCES

- A. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18 inch Drop.
- B. ASTM D2487 - Classification of Soils for Engineering Purposes.
- C. AASHTO - American Association of State Highway and Transportation Officials.

1.03 SUBMITTALS FOR REVIEW

- A. Section 01 33 00 - Submittals: Procedures for submittals.
- B. Samples: Submit, in air-tight containers, 10 lb sample of each type fill to testing laboratory.

1.04 SUBMITTALS FOR INFORMATION

- A. Section 01 33 00 - Submittals: Procedures for submittals.
- B. Materials Source: Submit name of imported materials source.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with Standard Specification for Construction Minnesota Department of Transportation.

PART 2 - PRODUCTS

2.01 SUBSOIL MATERIALS

A. Subsoil Type S1:

1. Excavated and re-used material or imported borrow.
2. Graded.
3. Free of lumps larger than 3 inches, rocks larger than 2, and debris.
4. Conforming to ASTM D2487 Group Symbol CL.

2.02 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Control: Testing and analysis of soil material.
- B. Testing and Analysis of Subsoil Material: Perform in accordance ASTM D 2487.
- C. Testing and Analysis of Topsoil Material: Perform in accordance AASHTO T 88.

- D. If tests indicate materials do not meet specified requirements, change material and retest.
- E. Provide materials of each type from same source throughout the Work.

PART 3 - EXECUTION

3.01 SOIL REMOVAL

- A. Excavate subsoil and topsoil from areas designated.
- B. Remove lumped soil, boulders, and rock.
- C. Stockpile excavated material in area designated on site and remove excess material not being used, from site.

3.02 STOCKPILING

- A. Stockpile materials on site at locations designated by Architect.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Prevent intermixing of soil types or contamination.
- E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.03 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent free standing surface water.
- B. If a borrow area is indicated, leave area in a clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 31 20 00

EARTHWORK

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes excavating, backfilling, filling, grading, and fine grading necessary to complete the work required by the drawings and/or Specifications.
- B. Related Sections.
 - 1. Coordinate Work with other trades for site utilities.

1.02 REFERENCES

- A. American Society for Testing Materials (ASTM)
 - 1. C33-02a Specification for Concrete Aggregates
 - 2. D698-00a Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 KN-m/m³))
 - 3. D1556-00 Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
 - 4. D1557-00 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 KN-m/m³))
 - 5. D2487-00 Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 - 6. D2488-00 Practice for Description and Identification of Soils (Visual-Manual Procedure)
 - 7. D4253-00 Test Method for Maximum Index Density and Unit Weight of Soils using a Vibratory Table
 - 8. D4254-00 Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
 - 9. D4491-99a Test Methods for Water Permeability of Geotextiles by Permittivity

1.03 PROJECT/SITE CONDITIONS. The Contractor shall be responsible for excavating all materials encountered. Unless otherwise shown or specified, there shall be no extra payment or other changes due to the encounter of unexpected materials. See Article elsewhere in this Section entitled "Inspection."

- A. Contaminated Materials. If in the course of the required work contaminated soils are discovered, such as soils with discernible odor of gasoline or fuel oil, the Contractor shall discontinue the work in the affected area and notify the Owner and the Architect/Engineer. Further directions will be given and the work shall proceed only as directed.
- B. Protection. Protect all adjacent work and trees. Take all precautions required to prevent damage.
- C. Water. The Contractor shall keep excavations free from water at all times during the execution of the work. Contractor shall furnish all power, pumps, and other apparatus necessary for the proper execution of such work.

- D. Utilities. Arrangements shall be made by the Contractor with all persons, firms, public authorities, or corporations owning or using pipe lines, pole lines, tracks, etc., to maintain and protect such facilities affected by the construction of the work. Coordinate work under this Section with work to be done under other Sections and to be done by others. Maintain and protect underground and aboveground utilities until relocated or disconnected as may be required.

Use care in excavation work to avoid damage to utilities. Report to the Architect/Engineer any utilities discovered which are not shown on the drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Borrow. Unless specified or indicated otherwise, the Contractor shall be responsible for obtaining all materials as may be required to complete fills and backfill work required. Borrow material shall conform to the applicable requirements as specified in Sub-Article B "Backfill and Fill Materials." The source of the material shall be subject to the Architect/Engineer's approval before the borrow operation is started. All borrow operations shall be in strict conformity to all applicable laws and legal restrictions.
- B. Backfill and Fill Materials, where not otherwise specified, shall be suitable for the purpose intended and shall be capable of being compacted to the various densities as specified elsewhere in this Section. Materials, classified in accordance with ASTM D2487 or D2488, as "Gravels" and "Sands" may be used. Inorganic silts and clays may be used provided that the required compaction can be obtained. Boulders or cobbles over 3 inches greatest dimension shall not be permitted in fill and backfill material. Material shall not contain sticks, roots, debris, or organic matter.
1. Granular Material for subgrades under floor slabs shall be sand and gravel mixture conforming to Mn/DOT 3138, Class 5.
 2. Fill materials, where called for on the drawings, shall be a sand and gravel mixture with 3-inch maximum size and less than 10% passing the #200 sieve.
 3. Frost-Free Material for fill and backfill where indicated shall have the following gradations:

Particle or Screen Size	Percent Passing (By Weight)
6 inch	100
3 inch	85 to 100
No. 4	30 to 60
No. 200	10 maximum
0.002 mm	3 maximum
- C. Topsoil shall be natural soil from the general area of the work suitable for growing grass. Topsoil may contain organic matter, but soil blends containing more than 50% peat (by volume) shall not be used. The source of the topsoil shall be approved by the Engineer before hauling to the site.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Topsoil. Strip off suitable topsoil from areas requiring excavation or grading and stockpile for use. Locate stockpile as directed by the Owner. In no case shall any topsoil be removed from the site.

- 3.02 EXCAVATION. Excavate to the lines shown for sub-cut and replacement with engineered fill. Do excavation necessary for the construction of the work. Excavations shall be large enough to allow the construction of the work and the inspection of same on all sides. Excavation for footings shall be to the elevations shown on the drawings.

If subcut excavation is carried too deep, such excess excavation shall be corrected by thickening the “engineered” or “granular” fill and/or backfill.

See also Article elsewhere in this Section on “Subgrades.”

If excavation for footings is carried too deep, such excess excavation shall be corrected by thickening the footings as required or may be corrected by backfilling with selected material, placed and compacted as specified elsewhere in this Section, to the elevation required at the bottom of the footings.

- 3.03 INSPECTION. Before any concrete work, or engineered fill or backfill is placed, excavations shall be examined and approved by the Engineer who will decide whether or not excavations shall be carried to a greater depth than shown. Extra work on this account, if any, will be by supplementary agreement. Foundations or footings, engineered fill, and backfill shall be placed on solid, unfrozen, undisturbed earth. See also the Articles on “Subgrades” and “Excavation.”

3.04 BACKFILL AND FILLS

- A. General. Fill and backfill shall be placed in horizontal layers with optimum moisture content required for required compaction. Correct the moisture content as may be necessary. Use thinner layers, if necessary to achieve the specified compaction. Each layer shall be compacted as specified in Article 3.05 before additional material is placed on it. No filling or backfilling shall be done in unsuitable weather or over ground that is frozen or too wet.

B. Building Area

1. Frost-Free Material, to construct subgrade for building construction, shall be placed in layers not exceeding 8 inches in thickness, loose measurement.
2. Backfill. Backfilling to construct subgrade for finished construction shall be placed in layers not exceeding 12 inches in thickness, loose measurement; and shall not be done until forms have been removed and such surface treatments of walls as are required have been applied. No backfilling shall be done without the Engineer’s permission.

Backfilling shall not be done against walls until the walls are sufficiently braced by temporary or permanent construction. Where applicable, carry up backfilling uniformly on both sides of walls to avoid displacement.

Place backfill and compact same using methods which will protect any and all perimeter insulation. Do not allow larger stones or compaction equipment to touch the insulation.

3.05 COMPACTION

- A. General. Cohesive soils shall be compacted with sheepsfoot rollers and/or other equipment as may be approved by the Engineer. Granular materials shall be compacted with vibratory type compacting equipment approved by the Engineer. Moisture content of fill material shall be corrected as may be necessary. Laboratory tests shall be performed to determine the compaction characteristics and optimum moisture content of the proposed fill material by the Standard Test Methods per ASTM D698 or to 60% relative density as determined in accordance with ASTM Methods D4253 and D4254 for the certain kinds of granular materials that do not develop a typical moisture-density curve. In-place soil compaction tests to determine if proper compaction has been achieved shall be in accordance with Division 1, and ASTM D1556.

If any compaction test reveals that fill and/or backfill is not compacted as specified, the Contractor shall scarify and compact as required to achieve the specified density. Additional compaction testing shall be made as directed by the Engineer to verify proper compaction. These additional tests shall be paid for by the Contractor.

Soil within 100 feet of freshly poured concrete shall not be compacted until after the concrete has cured a minimum of 48 hours.

- B. Building Area Engineered Fill and Backfill shall be compacted to 98% of the maximum density as determined.
 - 1. Frost-Free Material. *Two* (2) soil compaction tests (ASTM D1556) and *one* (1) Proctor test (ASTM D698) shall be made in alternate layers of engineered fill construction, located as directed by the Engineer and in accordance with Division 1 to determine if proper compaction has been achieved.
 - 2. Backfill. *Four* (4) soil compaction tests (ASTM D1556) and *two* (2) Proctor tests (ASTM D698) shall be made in the final layer of backfill, located as directed by the Engineer and in accordance with Division 1 to determine if proper compaction has been achieved. Laboratory Proctor Tests.
- C. Granular Material placed as the base for walks or slabs on grade shall be compacted to 95% of the Standard Proctor density in accordance with ASTM Method D698. Four (4) soil compaction tests (ASTM D1556) and two (2) Proctor tests (ASTM D698) shall be made in accordance with Division 1 to determine if proper compaction has been achieved.
- D. Other Fill and backfill, except top soil, shall be compacted to 90% of the Standard Proctor density.

3.06 SUBGRADES

- A. Subgrades For Floors which are to be placed on the ground shall be prepared by removing all soft and yielding material, if any, and excavating and/or filling as may be necessary and compacting. The filling these subgrades shall be with material and compaction as specified hereinbefore.

Subgrades shall be finished to the contour of the underside of the work to be placed on it with an allowable tolerance of +1/4 inch and -1 inch. Maintain the required contour until concrete is placed thereon. Compaction shall be as specified in Article entitled "Compaction."

- 3.07 GRADING. The area around the building shall be graded and fine graded to the finished elevations required by the drawings allowing for finished surfaces. Finished grades shall be to the elevations shown and shall slope uniformly between these elevations and to meet walks, curbs, pavements, or other construction as the case may be.

Placing and compaction of fill shall be as specified for filling. No materials shall be placed where subgrade is frozen, too wet, or soft. The finished work shall be true, smooth, and sightly.

- 3.08 TOPSOILING. Apply 6 inches of topsoil over the graded areas not otherwise surfaced. Remove any sticks, roots, and stones over 1 inch, and other objectionable materials. Spread smooth, but do not compact. Use topsoil stockpiled to the extent available. Provide additional topsoil if required. Excess topsoil, if any, shall be removed from site in a lawful manner.
- 3.09 DISPOSAL OF EXCESS OR UNSUITABLE MATERIALS shall be the Contractor's responsibility and shall be off the site and in a lawful manner.

END OF SECTION

SECTION 31 22 00

GRADING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Removal and storage of topsoil.
- B. Rough grading and preparing the site for site structures, building pads, and pavements.
- C. Finish grading and placement of topsoil.

1.02 RELATED REQUIREMENTS

- A. Section 01 57 13 - Temporary Erosion and Sediment Control.
- B. Section 31 10 00 - Site Clearing.
- C. Section 31 23 16 - Excavation.
- D. Section 31 23 23 - Fill: Filling and compaction.
- E. Section 31 23 33 – Trench Excavation and Backfilling: Trenching and backfilling for utilities.

1.03 SUBMITTALS

- A. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Topsoil: Topsoil excavated on-site or imported from offsite.
 - 1. Topsoil includes all friable, fertile, organic clay loam soil suitable for grass and plants, found at the surface to a depth of approximately 6 to 12 inches, reasonably free of subsoil, clay lumps, roots, and rocks larger than 2 inch, debris, large weeds and foreign matter.
- B. Other Fill Materials: See Section 31 23 23.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench mark and intended elevations for the work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify, and protect from damage above- and below-grade utilities to remain.

- D. Notify utility company to remove and relocate utilities.
- E. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs, from damage by grading equipment and vehicular traffic.
- F. Protect trees to remain by providing substantial fencing around entire tree at the outer tips of its branches; no grading is to be performed inside this line.
- G. Protect plants, lawns, and other features to remain as a portion of final landscaping.
- H. Grading shall conform to planned grades, cross-sections and stakes.
- I. Confine grading operations to established limits.

3.03 ROUGH GRADING

- A. Remove topsoil to the depth encountered from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.
- B. Remove heavy growths of grass where encountered prior to stripping topsoil.
- C. Do not remove topsoil when wet.
- D. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.
- E. Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated in Drawings.
- F. Slope grades to direct water away from buildings and to prevent ponding.
- G. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
- H. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

3.04 SOIL STOCKPILING

- A. Stockpile excavated topsoil on site.
 - 1. Topsoil not re-used on site shall remain the property of the Owner.
 - 2. Stockpile topsoil to be re-used on site; remove remainder from site.
- B. Stockpile subsoil to be re-used on site; remove remainder from site.
- C. Stockpiles: Use areas designated on site; pile depth not to exceed 4 feet; protect from erosion.

3.05 FINISH GRADING

- A. Before Finish Grading:
 - 1. Verify building and trench backfilling have been inspected.
 - 2. Verify subgrade has been contoured and compacted.
- B. Remove debris, roots, branches, stones, in excess of 2 inch in size. Remove soil contaminated with petroleum products.

- C. Where topsoil is to be placed, scarify surface to depth of 3 inches.
- D. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 8 inches.
- E. Place topsoil in areas where seeding, sodding, and planting are indicated.
- F. Place topsoil where required to level finish grade.
- G. Place topsoil to the following compacted thicknesses:
 - 1. Areas to be Seeded with Grass: 6 inches.
 - 2. Areas to be Sodded: 4 inches.
- H. Remove roots, weeds, rocks, and foreign material while spreading.
- I. Near plants spread topsoil manually to prevent damage.
- J. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
- K. Lightly compact placed topsoil.

3.06 TOLERANCES

- A. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.
- B. Top Surface of Finish Grade: Plus or minus 1/2 inch.

3.07 REPAIR AND RESTORATION

- A. Existing Facilities, Utilities, and Site Features to Remain: If damaged due to this work, repair or replace to original condition.
- B. Other Existing Vegetation to Remain: If damaged due to this work, replace with vegetation of equivalent species and size.

3.08 CLEANING

- A. Leave site clean and raked, ready to receive landscaping.

END OF SECTION

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SECTION 31 23 16

EXCAVATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Removal and storage of topsoil.
- B. Rough grading and preparing the site for site structures, building pads, and pavements.
- C. Finish grading and placement of topsoil.

1.02 RELATED REQUIREMENTS

- A. Section 01 57 13 - Temporary Erosion and Sediment Control.
- B. Section 31 10 00 - Site Clearing.
- C. Section 31 23 16 - Excavation.
- D. Section 31 23 23 - Fill: Filling and compaction.
- E. Section 31 23 33 – Trench Excavation and Backfilling: Trenching and backfilling for utilities.

1.03 SUBMITTALS

- A. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Topsoil: Topsoil excavated on-site or imported from offsite.
 - 1. Topsoil includes all friable, fertile, organic clay loam soil suitable for grass and plants, found at the surface to a depth of approximately 6 to 12 inches, reasonably free of subsoil, clay lumps, roots, and rocks larger than 2 inch, debris, large weeds and foreign matter.
- B. Other Fill Materials: See Section 31 23 23.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench mark and intended elevations for the work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify, and protect from damage above- and below-grade utilities to remain.

- D. Notify utility company to remove and relocate utilities.
- E. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs, from damage by grading equipment and vehicular traffic.
- F. Protect trees to remain by providing substantial fencing around entire tree at the outer tips of its branches; no grading is to be performed inside this line.
- G. Protect plants, lawns, and other features to remain as a portion of final landscaping.
- H. Grading shall conform to planned grades, cross-sections and stakes.
- I. Confine grading operations to established limits.

3.03 ROUGH GRADING

- A. Remove topsoil to the depth encountered from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.
- B. Remove heavy growths of grass where encountered prior to stripping topsoil.
- C. Do not remove topsoil when wet.
- D. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.
- E. Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated in Drawings.
- F. Slope grades to direct water away from buildings and to prevent ponding.
- G. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
- H. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

3.04 SOIL STOCKPILING

- A. Stockpile excavated topsoil on site.
 - 1. Topsoil not re-used on site shall remain the property of the Owner.
 - 2. Stockpile topsoil to be re-used on site; remove remainder from site.
- B. Stockpile subsoil to be re-used on site; remove remainder from site.
- C. Stockpiles: Use areas designated on site; pile depth not to exceed 4 feet; protect from erosion.

3.05 FINISH GRADING

- A. Before Finish Grading:
 - 1. Verify building and trench backfilling have been inspected.
 - 2. Verify subgrade has been contoured and compacted.
- B. Remove debris, roots, branches, stones, in excess of 2 inch in size. Remove soil contaminated with petroleum products.

- C. Where topsoil is to be placed, scarify surface to depth of 3 inches.
- D. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 8 inches.
- E. Place topsoil in areas where seeding, sodding, and planting are indicated.
- F. Place topsoil where required to level finish grade.
- G. Place topsoil to the following compacted thicknesses:
 - 1. Areas to be Seeded with Grass: 6 inches.
 - 2. Areas to be Sodded: 4 inches.
- H. Remove roots, weeds, rocks, and foreign material while spreading.
- I. Near plants spread topsoil manually to prevent damage.
- J. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
- K. Lightly compact placed topsoil.

3.06 TOLERANCES

- A. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.
- B. Top Surface of Finish Grade: Plus or minus 1/2 inch.

3.07 REPAIR AND RESTORATION

- A. Existing Facilities, Utilities, and Site Features to Remain: If damaged due to this work, repair or replace to original condition.
- B. Other Existing Vegetation to Remain: If damaged due to this work, replace with vegetation of equivalent species and size.

3.08 CLEANING

- A. Leave site clean and raked, ready to receive landscaping.

END OF SECTION

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SECTION 31 23 23

FILL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Fill and compacting to bring site embankments up to required grade.
- B. Filling, backfilling, and compacting for building volume below grade.
- C. Backfilling and compacting for utilities outside the building to utility main connections.
- D. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

1.02 RELATED REQUIREMENTS

- A. Section 31 22 00 - Grading: Site grading.
- B. Section 31 23 16 - Excavation: Removal and handling of soil to be re-used.
- C. Section 31 23 33 – Trench Excavation and Backfilling: Excavating for utility trenches.

1.03 DEFINITIONS

- A. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- B. Finish Grade Elevations: Indicated on drawings.
- C. Subgrade Elevations: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- D. Fill: Soil materials used to raise existing grades.

1.04 REFERENCE STANDARDS

- A. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 2006.
- B. ASTM D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2007.
- C. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2007.
- D. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); 2009.
- E. ASTM D 2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2006.
- F. ASTM D 2940 - Standard Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports.

- G. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2005.
- H. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.
- I. Minnesota Department of Transportation (Mn/DOT) Standard Specifications for Highway Construction, Latest Edition.
 - 1. Section 2105 Excavation and embankment.
 - 2. Section 3138 Aggregates for Surface and Base Courses.
 - 3. Section 3149 Granular Material.
- J. ASTM D 4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 2005.

1.05 SUBMITTALS

- A. Materials Sources: Submit name of imported materials source.
- B. Compaction Density Test Reports.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where designated.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. General: Provide borrow soil materials when sufficient suitable soil materials are not available from excavations.
 - 1. Notify Engineer at least 4 days prior of intention to import materials.
 - 2. Designate proposed borrow area.
 - 3. Provide Engineer with samples if requested.
 - 4. Acceptance tests: As required to prove quality.
- B. Base Course:
 - 1. MnDOT Class 5 aggregate base.
- C. Drainage Fill and Backfill:
 - 1. Narrowly graded mixture of washed crushed stone, or crushed or un crushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2 inch sieve and 0 to 5 percent passing a No. 8 sieve.

D. Granular Fill and Backfill:

1. Select Granular Borrow: soil material meeting the gradation requirements of MNDOT specification 3149.2B2 Select Granular Borrow.
2. Modified Select Granular Borrow: soil material meeting the gradation requirements of MNDOT specification 3149.2B2 Select Granular Borrow with no more than 5% by weight passing the #200 sieve and having no more than 40% by weight passing the #40 sieve.

E. General Fill: Subsoil excavated on-site or imported from offsite as required.

1. Suitable Soils for use as General Fill or Backfill:

- a. ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP and SM, or a combination of these groups; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

2. Unsuitable Soils for use as General Fill or Backfill:

- a. Soil Classification Group GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
- b. Unsuitable soils also include suitable soils not maintained within 2 percent of optimum moisture content at time of compaction.

F. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

G. Flowable Fill: Lean concrete; minimum compressive strength of 1500 psi.

H. Topsoil: See Section 31 22 00.

I. Other Materials: As required for complete and proper installation, selected by Contractor and subject to the acceptance of Engineer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the Work are as indicated.
- B. Identify required lines, levels, contours, and datum locations.
- C. See Section 31 22 00 for additional requirements.
- D. Verify structural ability of unsupported walls to support imposed loads by the fill.

3.02 PREPARATION

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with suitable material.
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 FILLING

- A. Fill to contours and elevations indicated using unfrozen materials.

- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Remove and replace, or scarify and air dry, otherwise suitable soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified unit weight. Assist drying by spreading soil, discing, harrowing, or pulverizing.
- G. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.
- H. General Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- I. Slope grade away from building minimum 2 inches in 10 ft, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- J. Correct areas that are over-excavated.
 - 1. Load-bearing foundation surfaces: Use granular fill, flush to required elevation, compacted to 100 percent of maximum dry density.
 - 2. Other areas: Use general fill, flush to required elevation, compacted to minimum 90 percent of maximum dry density.
- K. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under paving, slabs-on-grade, and similar construction: 95 percent of maximum dry density.
 - 2. At road subgrades: 95 percent of maximum dry density.
 - 3. At other locations: 90 percent of maximum dry density.
- L. Reshape and re-compact fills subjected to vehicular traffic.

3.04 FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.
- B. Under Interior Slabs-On-Grade:
 - 1. Use granular fill unless otherwise indicated on drawings.
 - 2. Compact to 95 percent of maximum dry density.
- C. At Foundation Walls and Footings:
 - 1. Use general fill with the additional requirement of less than 50% of particles passing the #40 sieve and less than 7% of particles passing the #200 sieve, unless otherwise indicated in the Drawings or specifications.
 - 2. Backfill excavations as promptly as progress of work permits, but not until:
 - a. Acceptance of construction below finish grade including, where applicable, dampproofing and waterproofing.

- b. Inspection, testing, acceptance, recording locations of underground utilities.
 - c. Removal of concrete form work.
 - d. Removal of temporary shoring, and bracing and sheeting.
 - e. Removal of trash, debris, vegetation, unsuitable soil materials, and obstructions.
 - 3. Fill up to subgrade elevation.
 - 4. Compact each lift under footings and slabs to 98 percent of maximum dry density.
 - 5. Compact each lift adjacent to foundations walls to 95 percent of maximum dry density.
 - 6. Do not backfill against unsupported foundation walls.
- D. Over Subdrainage Piping at Foundation Perimeter and Under Slabs:
- 1. Drainage fill and geotextile fabric: Section 33 46 00.
 - 2. Compact to 95 percent of maximum dry density.
- E. At Lawn Areas:
- 1. Use general fill.
 - 2. Fill up to 6 inches below finish grade elevations.
 - 3. Fill up to subgrade elevations.
 - 4. Compact to 90 percent of maximum dry density.
 - 5. See Section 31 22 00 for topsoil placement.

3.05 TOLERANCES

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.06 FIELD QUALITY CONTROL

- A. Testing agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality control testing.
- B. Compaction density testing will be performed on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D3017 as applicable.
- C. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- D. Proof-Roll Prepared Subbase surface below aggregate base course to identify soft pockets and areas of excess yielding.
 - 1. Proof-rolling to be observed by the Owner's Geotechnical Consultant
 - 2. Completely proof-roll subbase in both directions. Limit vehicle speed to 3 mph.
 - 3. Proof-roll with a loaded 10-wheel tandem-axle dump truck weighing not less than 15 tons.
 - 4. Subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch require correction. In areas where subgrade correction is deemed necessary, unsuitable soils shall be removed and replaced with suitable soils, recompacted and proof-rolled again until corrected.

3.07 CLEANING

- A. Remove unused stockpiled materials; leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION

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SECTION 31 23 33

UTILITY TRENCH EXCAVATION AND BACKFILLING

PART 1 - GENERAL

- 1.01 SUMMARY. This Section shall include the excavation, trenching, and backfill required for the underground utility systems. All work shall be in accordance with Divisions 00, 01 and as specified herein.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION

3.01 CONSTRUCTION REQUIREMENTS

- A. Trench Preparation. The sewer or watermain excavation and trench preparation shall be in accordance with Article 2600, Trench Excavation and Backfilling/Surface Restoration in the Standard Utilities Specifications. The Earth Foundation Bedding Method as shown in detail drawings attached to these Specifications shall be used for all pipe installation where groundwater or unstable material does not create a problem. Where, in the opinion of the Engineer, unstable material prevents use of this bedding method, then the Contractor shall install granular bedding or trench stabilization rock.

The granular material may be taken from the project site. The cost of the granular material required, furnished, and placed in the pipe zone shall be included in the price per foot of sewer or watermain complete in place, unless a bid item is included in the Bid Proposal for this material.

- B. Excavation and Embankment. After underground utility construction has been completed within the roadway and shoulders, the Contractor shall proceed with final subbase grading and compaction. Compaction shall be by the Specified Density Method. Standard Proctor tests indicating 100% in the upper 3 feet of the roadway and 95% in the upper 3 feet of the shoulder will be required. One test for each 500 feet is required.
- C. Backfilling. Backfill of the utility trenches shall be in accordance with the following methods. Utilize Type "B" backfilling methods within any street or roadway and shoulders and also within all driveways. Utilize Type "D" backfilling methods in the ditches or open areas where roadways or proposed housepads will not be affected.

Mixtures of gravel meeting the Granular Material Gradation Classifications for those zones as outlined in the Standard Utility Specification shall be spread in 3-inch layers and hand tamped or compacted by approved mechanical methods to a density of 95% of Standard Proctor Density by the Mn/DOT "Specified Density Method." Care shall be taken to deposit the material simultaneously on both sides of the pipe for the full width of the trench. At the top of the encasement zone, the backfill shall be well compacted by using mechanical tamping equipment in such manner so as not to damage the pipe joints or shift the pipe alignment. The Contractor may not use water to obtain compaction at the pipe zone.

All surplus and unusable or waste material shall be disposed of in conformance with Mn/DOT 2105. Backfilling shall not be done in freezing weather, except by permission of the Engineer, and it shall not be made with frozen material, nor where the material already in the trench is frozen. After backfilling has been accomplished, the Contractor shall be responsible for furnishing backfill or surfacing material as necessary and filling settlement depressions resulting from inadequate compaction or any other construction defect until the acceptance of the work.

In areas receiving Type "B" backfilling, settlement after one year of 1 inch or more from finish grade shall be considered evidence of inadequate compaction and the area shall be restored at the Contractor's expense.

1. Type "B" Backfilling. Type B backfilling consists of placing suitable materials excavated from the trench in succeeding 12-inch thick layers from a point 12 inches from the top of the pipe. Each 12-inch thick layer shall be compacted before additional backfill material is placed in the excavation.
 - a. The top 12 inches of this backfill shall be compacted with the use of a sheepsfoot roller or approved similar compaction equipment. Only approved mechanical tamping or compacting will be allowed. Use of bucket compaction or wheel rolling will not be permitted.
 - b. The density of the backfilled material after compaction shall be 95% of Standard Proctor Density from the encasement zone to 3 feet below the surface and 100% of Standard Proctor Density in the upper 3 feet.
 - c. Suitable backfill material may contain any mixture of loam, clay, sand, or coarse gravel, but shall be free of stones, boulders, chunks, or lumps with any dimension greater than 8 inches and shall contain no ashes, refuse, rubbish, roots, frozen material, or vegetation or organic material that would cause settlement. In any case, where rocks are present in the backfill material, adequate sand shall also be present and mixed in to fill all voids.
2. Type "D" Backfilling. The backfill material shall be free from boulders, rock, concrete and bituminous chunks, and clay lumps more than 1 foot in any dimension and shall contain no stumps, rubbish, decayed vegetation, or frozen materials and other similar articles where presence in the backfill would cause excessive settlement. The backfill may be placed in 3-foot layers and compacted by wheel type equipment weighing not less than 6 tons.
 - a. If the compaction of the backfill material is specifically authorized by the Engineer to be done by flooding the trench, the Contractor shall exercise due precautions so as not to float the pipe or permit water to enter the pipe, causing mud to be deposited in the pipe. The Contractor shall be wholly responsible for neglect of his workmen in carrying out the proper precautions.
 - b. The density obtained in Type D trench backfilling shall be 95% of Standard Proctor Density above the pipe encasement zone. One test for each 500 feet is required. The testing shall be repeated for each 3-foot vertical lift.

END OF SECTION

SECTION 31 25 00

EROSION PREVENTION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Control of sedimentation of waterways, open drainage ways and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.
- E. MPCA Storm Water Pollution Prevention Plan requirements.

1.02 RELATED SECTIONS

- A. Division 01 for Quality Control
- B. Section 311000 - Site Clearing
- C. Section 312200 – Grading
- D. Section 312316 – Excavating
- E. Section 312316.13 – Trenching

1.03 REFERENCES

- A. ASTM D 4355 - Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus); 1999.
- B. ASTM D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity; 1999a.
- C. ASTM D 4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles; 1991 (Reapproved 1996).
- D. ASTM D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles; 1991 (Reapproved 1996).
- E. ASTM D 4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile; 1999a.
- F. ASTM D 4873 - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples; 2001.
- G. EPA 832-R-92-005 - Storm Water Management for Construction Activities; U.S. Environmental Protection Agency; 1992.
- H. MPCA NPDES Construction Site Requirements under General Permit MNR100001

- I. Minnesota Department of Transportation Standard Specifications for Construction, 2016 Edition and Corresponding Supplements.

1.04 PERFORMANCE REQUIREMENTS

- A. Follow standards for inspection and maintenance of Best Management Practices (BMPs), as identified in the MPCA Erosion and Sedimentation Control Manual.
- B. Provide a competent installer for each contractor or subcontractor to oversee all installation and maintenance of temporary and permanent BMPs and erosion control measures. In addition, provide at least one certified individual to conduct inspection and maintenance of all erosion prevention and sediment control BMPs.
- C. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained. A construction stormwater permit from the MPCA is not required however site protections shall be implemented to protect down gradient facilities and minimize onsite erosion.
- D. Maintain BMPs at the project site to control stormwater, prevent on-site and off-site soil erosion, to minimize on-site and off-site sedimentation, and to minimize soil compaction and devegetation. Additional BMPs may be necessary to maintain compliance with the City of Brainerd or the Owner's requirements, which shall be implemented at no cost to the Owner.
 1. Timing. Install BMPs prior to disturbance of surface cover and before precipitation occurs.
 2. Maintenance. Maintain temporary preventive measures until permanent measures have been established to 90%.
 3. Temporary Sediment Basins and Traps. In the event that temporary sedimentation basins will be used or required, construct basins concurrently with the start of soil disturbing activities. Direct stormwater runoff from localized watersheds into the basins. Mulch, seed, or both, the exposed side slopes of the basins as soon as possible, but within 14 days at the longest.
 4. Work area exits shall be maintained daily to minimize sediment tracking onto the roadways or into the adjoin buildings.
 5. Prior to beginning work, complete the following:
 - a. Control drainage and erosion on the site, and mark or otherwise delineate areas on the site not to be disturbed.
 - b. Establish site location of any portable toilet, fueling area, spill kit location, hazardous material handling area, litter control device area, staging area, stockpiling area and other designated areas.
 - c. Establish traffic flow and patterns, including haul roads, to minimize soil disturbance, tracking, compaction, and to preserve native and existing vegetation.
- E. Mark/stake and maintain sensitive areas identified by the owner to prevent disturbance, compaction, erosion and sedimentation of sensitive areas. Use measures such as hand clearing and grubbing, limiting bare soil exposure time, expediting construction activities, and immediately establishing final vegetation to minimize sediment loss potential in these areas. Inspect marked/staked areas at each inspection to ensure areas are being protected from sedimentation and sediment loss. Additional measures to prevent fouling of permanent stormwater BMPs may be necessary, and should be implemented to maintain design operability at project turnover.
- F. Complete periodic required stormwater inspections as identified (weekly routine inspections and precipitation events).

- G. Make corrective actions to findings of periodic inspections, as self-identified on periodic inspections, or as identified by the engineer or owner within 24 hours of discovery/notice.
- H. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
 - 1. Prevent runoff into project and adjacent storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
 - 2. Any storm water discharge from disturbed areas must be visibly free of sediment and only contain stormwater or other permit-authorized discharges. Turbid or sediment-laden water must be treated prior to discharge (see Part 1.4(L)(5) for details).
 - 3. Inlet protection removed for the purposes of public safety must be reinstalled as soon as feasible after conclusion of the event initiating removal.
 - 4. Stormwater and other discharges from the site may not be discharged to the sanitary sewer.
- I. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
 - 1. Control movement of sediment and soil from temporary stockpiles of soil.
 - a. Stockpiles shall not be placed in natural buffers or surface waters unless there is a bypass in place. Stockpiles shall be stabilized with temporary BMPs by the end of the work day or shift during which it was created.
 - b. Unless infeasible or otherwise project-specified, topsoil shall be preserved for site restoration and revegetation purposes, and shall be protected from wind or water erosion as described above.
 - c. Stockpiles transported off-site shall be covered to prevent wind erosion and off-site deposition.
 - 2. Control and minimize traffic and traffic paths throughout project site to minimize tracking, disturbance and compaction. Prevent development of ruts due to equipment and vehicular traffic.
 - 3. Immediately stabilize areas when construction activity in an area has temporarily ceased or ended and will not resume for at least 14 calendar days.
 - 4. If erosion, compaction or devegetation occurs due to non-compliance with these requirements, restore impacted areas at no cost to Owner.
- J. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water or soils leaving the project site due to construction activities for this project.
 - 1. Prevent windblown soil from leaving the project site. Soils transported off-site shall be covered to prevent wind erosion and off-site deposition. Activities such as grinding, sanding, cutting and blasting shall be conducted in a manner so as to minimize fugitive dust, and to minimize accumulation on soils to be vegetated, and areas (eg. curb cutouts) that may be a conduit of stormwater.
 - 2. Prevent tracking of mud onto public roads outside site. If installation and maintenance of SWPPP-identified BMPs is not sufficient to prevent tracking, additional preventive measures shall be implemented at no cost to the Owner.
 - 3. Street sweeping. Sweep or otherwise remove all soil and sediment tracked or otherwise deposited on public or private paved areas on a daily basis. Use mechanical methods to remove solids first, followed by wet methods, only as needed.
 - 4. Prevent mud and sediment from flowing onto sidewalks and pavements.

5. Discharges within or from the project site shall meet the following requirements.
 - a. Water discharged from the project site must be comprised solely of stormwater, and be visibly free of sediment and floating solids. Other discharges require separate permitting authority.
 - b. Unless infeasible due to lack of pervious or vegetated area, discharges shall be made to vegetated areas, and with energy dissipation in place to prevent erosion. Discharges from the project site to the sanitary sewer require prior approval by MS4 staff and the sewerage authority.
 - c. Water discharged must not cause nuisance conditions, erosion in receiving channels or downslope properties, or inundation of wetlands.
 - d. For turbid or sediment-laden water, provide a treatment plan for MS4 pre-approval before pumping water from the site (see Part 1.5(J)).
 6. If off-site impacts occur due to non-compliance with these requirements, restore impacted areas at no cost to Owner.
- K. Sedimentation of Waterways: Prevent migration of sediment from project site to waterways on-site or off-site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
1. Project areas adjacent to or flowing directly to waters of the state have additional permit-required management standards, which include setbacks, enhanced BMPs, and requirements for rapid stabilization methods. Consult the SWPPP for specific provisions to be followed at the project site. If installation and maintenance of SWPPP-identified BMPs is not sufficient to prevent sedimentation, additional preventive or protective measures shall be implemented at no cost to the Owner.
 2. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner. Corrective measures include removal of deposited sediments from waters of the state. Prior to removal of sediment from waterways, obtain MS4 approval, and any necessary permits; comply with requirements of authorities having jurisdiction.
 3. If sediment basins or devices are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
 4. Discharges within or from the project site shall meet the following requirements.
 - a. Water discharged from the project site must be comprised solely of stormwater, and be visibly free of sediment and floating solids. Other discharges require separate permitting authority.
 - b. Unless infeasible due to lack of pervious or vegetated area, discharges shall be made to vegetated areas, and with energy dissipation in place to prevent erosion. Discharges from the project site to the sanitary sewer require prior approval by MS4 and the sewerage authority.
 - c. Water discharged must not cause nuisance conditions, erosion in receiving channels or downslope properties, or inundation of wetlands.
 - d. For turbid or sediment-laden water, provide a treatment plan for MS4 pre-approval before pumping water from the site (see Part 1.5(J)).
 5. If on-site or off-site impacts occur due to non-compliance with these requirements, restore impacted areas at no cost to Owner.
- L. Open Water: Prevent standing water that could become stagnant.

- M. Pollution Prevention Measures: Prevent contamination of stormwater from on-site materials and wastes. Activities occurring at a separate area (staging) in conjunction with the project are subject to the provisions in this part.
1. Any product or waste with the potential to contaminate stormwater must be stored inside or under cover in SWPPP designated areas only. Items must be stored in a closed, labeled container and in a manner to prevent releases through vandalism, theft, accident or otherwise. Items included in this provision include, but is not limited to: building materials, pesticides, treatment chemicals and by-products, landscape materials, fuels, oils and lubes, paints, paint waste and other hazardous wastes. Storage locations shall be indicated on the SWPPP, and be updated as necessary to reflect site conditions.
 2. Litter and solid waste at the site must be controlled to prevent release from the project site and be covered, except when adding or removing waste. Litter and wastes may not be buried or otherwise disposed at the project site. Solid waste must be collected and disposed off-site in a manner consistent with local and state solid waste rules. Solid waste storage locations shall be indicated on the SWPPP, and be updated as necessary to reflect site conditions.
 3. On-site fueling shall be conducted in SWPPP designated areas only, and shall have secondary containment in place to prevent fuel releases. In situations where permanent containment is not feasible, rubberized containers suitable for use under equipment during fueling operations is acceptable. Fueling locations shall be indicated on the SWPPP, and be updated as necessary to reflect site conditions.
 4. A spill kit containing materials appropriate to project-specific pollutants and quantities shall be located on the project site, and its location shall be indicated on the SWPPP.
 5. Portable toilets must be positioned so that they are secure, and will not be tipped or knocked over. Sanitary waste must be disposed in a manner consistent with local and state rules.
 6. Vehicle and equipment washing is prohibited at the project site, including but not limited to the staging area.
 7. Concrete wash-out waste shall be collected and managed off-site. Concrete waste collected must be disposed of off-site in a manner consistent with local and state solid waste rules.
 8. Use methods and operational procedures that prevent discharge or placement of concrete or bituminous grindings, cuttings, millings, and other bituminous wastes from areas of existing or future vegetated soils and from all water conveyance systems, including inlets, ditches and curb flow lines.
 9. Use methods and operational procedures that prevent concrete dust, particles, and other concrete wastes from leaving the project site, depositing in existing or future vegetated areas, and from entering stormwater conveyance systems, including inlets, ditches and curb flow lines. Use methods and operational procedures that prevent saw cut slurry and planning waste from leaving the project site and from entering stormwater conveyance systems including ditches and culverts.
 10. Spill response and notification. In the event of a release to the environment, or an unexpected field observation (such as a tank, buried waste, or discolored soil), complete the MPCA Spill Notification Form and submit to the MPCA in accordance with the specified procedure below (see Part 1.5(H)).
 11. If on-site or off-site impacts occur due to non-compliance with these requirements, restore impacted areas at no cost to Owner.
- N. Establish final stabilization: Restore the project site to pre-disturbance vegetative conditions and initiate project closeout proceedings.
1. Complete soil disturbing activities and restore site to a uniform perennial vegetative cover with a density of 70%, or other equivalent measures, as approved by the engineer, to prevent soil failure under erosive conditions.
 2. Temporary BMPs shall be removed, unless specifically approved by the owner or its designated campus storm water point-of-contact.

3. Permanent BMPs shall be fully installed and verified to be operating as designed. Any basins or other permanent BMPs also used as temporary BMPs during the construction phase, must be cleaned of accumulated sediment.
4. Note that compliance inspections, must continue to be completed until final stabilization has been achieved.
5. Growing seasons. Commencement of work in relationship to growing seasons and final stabilization efforts may impact the Contractor's selection of BMPs for final stabilization. That is, seeding or hydro-seeding of sites in the fall do not constitute final stabilization and will delay the ability to cease inspections and/or close out the project.

1.05 SUBMITTALS

- A. See Division 01 for Submittal Procedures.
- B. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements and signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.
- C. Spill Response and Notification. As indicated in Part 1.4(O), notify the MPCA in the event of a release to the environment, or an unexpected field observation (such as a tank, buried waste, or discolored soil). If more than 5 gallons of petroleum product, or any volume of other substance causing pollution of water are released, as described on the Spill Notification Form, the contractor shall directly contact the owner and the State Duty Officer at 800-422-0798 or 651.649.5451.
- D. Materials and product shop drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Mulch: Per MnDOT Specification Section 3733, Type 3.
- B. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons. MnDOT Seed Mix #100 or #110 or approved equivalent.
- C. Silt Fence Fabric: Per MnDOT Specification Section 3886 for Standard Machine Sliced or Heavy Duty type. Preassembled silt fence is not allowed. Follow MnDOT standards.
- D. Geotextiles: Per MnDOT Specification Section 3733, Type V.
- E. Erosion Control Blankets: Per MnDOT Specification Section 3885, Category 4 Coconut for all slopes 4:1 or greater and within entire bioswale area, and Category 2 Straw 2S for all slopes 8:1 or greater.
- F. Erosion Stabilization Mats: Per MnDOT Specification Section 3888, Type 3 for Slope greater than 3:1 and at pipe outlets.
- G. Storm Drain Inlet Protection: Filter Bag insert or approved equivalent. Silt fence wrapped on casting or silt fence or strawbales surrounding catchbasin or manhole is generally not allowed as a primary means, but may be used for redundant protection.
- H. Filter Log: Per MnDOT specification Section 3897 Type Straw, Wood or Compost Log. Straw logs are considered to be marginally effective, and are only to be used, if at all, in very low-flow, low-slope areas.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 CONSTRUCTION ACTIVITY REQUIREMENTS

A. STORM WATER POLLUTION PREVENTION PLAN

The Contractor must implement Best Management Practices (BMPs) for site disturbances identified in this document and required by the local governing authority.

B. EROSION PREVENTION PRACTICES

1. The Contractor must plan for and implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion, so that the inspection and maintenance requirements are complied with. The location of areas not to be disturbed must be delineated (e.g. with flags, stakes, signs, silt fence etc.) on the development site before work begins. Phasing and special site areas to be marked/staked are indicated on the SWPPP.
2. All exposed soil areas with a continuous positive slope must have temporary erosion protection or permanent cover for the exposed soil areas year round, according to the following table of slopes and time frames (Maximum time an area can remain open when the area is not actively being worked):

Type of Slope	Time
Steeper than 3:1	7* days
10:1 to 3:1	14 days
Flatter than 10:1	21 days

These areas include constructed bioswale side slopes, and any exposed soil areas with a positive slope to a storm water conveyance system, such as a curb and gutter system, storm sewer inlet, temporary or permanent drainage ditch or other natural or man made systems that discharge to a surface water.

*Note that in project areas within 1 mile of a Specials Waters are subject to the provisions of Appendix A of the permit, which requires all areas to be stabilized within 7 days.

- a. The normal wetted perimeter of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge to any surface water. Stabilization must be completed within 24 hours of connecting to a surface water.
- b. Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours of connection to a stormwater conveyance system.

C. SEDIMENT CONTROL PRACTICES

1. Sediment control practices must minimize sediment from entering surface waters, including curb and gutter systems and storm sewer inlets.

2. Temporary or permanent drainage ditches and sediment basins that are designed as part of a treatment system require sediment control practices only as appropriate for site conditions.
3. If the down gradient treatment system is overloaded, additional upgradient sediment control practices must be installed to eliminate the overloading, and the SWPPP must be amended to identify these additional practices.
4. In order to maintain sheet flow and minimize rills and/or gullies, there shall be no unbroken slope length of greater than 75 feet for slopes with a grade of 3:1 or steeper.
5. Sediment control practices must be established on all down gradient perimeters before any upgradient land disturbing activities begin. These practices shall remain in place until final stabilization has been established.
6. The timing of the installation of sediment control practices may be adjusted to accommodate short-term activities such as clearing or grubbing, or passage of vehicles. Any short-term activity must be completed as quickly as possible and the sediment control practices must be installed immediately after the activity is completed. However, sediment control practices must be installed before the next precipitation event even if the activity is not complete.
7. All storm drain inlets must be protected by appropriate BMPs during construction until all sources with potential for discharging to the inlet have been stabilized.
8. Temporary soil stockpiles must have silt fence or other effective sediment controls, and cannot be placed in surface waters, including storm water conveyances such as curb and gutter systems, or conduits and ditches. Stockpiles not actively being worked shall be stabilized around the entire perimeter; stockpiles being worked shall be stabilized at the end of each work day. Preserved topsoil stockpiles shall additionally be covered.
9. Vehicle tracking of sediment from the construction site must be minimized by BMPs such as stone pads, concrete or steel wash racks, or equivalent systems. Streets must be swept daily.

D. DEWATERING AND BASIN DRAINING

1. Dewatering or basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) related to the construction activity that may have turbid or sediment laden discharge water must be discharged to a temporary or permanent sedimentation basin on the project site whenever possible. If the water cannot be discharged to a sedimentation basin prior to entering the surface water, it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream landowners. The Contractor must ensure that discharge points are adequately protected from erosion and scour. The discharge must be dispersed over natural rock riprap, sand bags, plastic sheeting or other accepted energy dissipation measures. Adequate sedimentation control measures are required for discharge water that contains suspended solids.
2. All water from dewatering or basin draining activities must be discharged in a manner that does not cause nuisance conditions, erosion in receiving channels or on downslope properties, or inundation in wetlands causing significant adverse impact to the wetland.

E. INSPECTIONS AND MAINTENANCE

1. The Contractor must routinely inspect the construction site once every seven days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.
2. Where parts of the construction site have undergone final stabilization, but work remains on other parts of the site, inspections of the stabilized areas may be reduced to once per month. Where work has been suspended due to frozen ground conditions, inspections may also be suspended until thaw at the site occurs.

3. All erosion prevention and sediment control BMPs must be inspected to ensure integrity and effectiveness. All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs. The Contractor must investigate and comply with the following inspection and maintenance requirements:
 - a. All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the height of the fence. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access.
 - b. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 the storage volume. Drainage and removal must be completed within 72 hours of discovery, or as soon as field conditions allow access.
 - c. Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of sediment being deposited by erosion. The Contractor must remove all deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems, and re-stabilize the areas where sediment removal results in exposed soil. The removal and stabilization must take place within seven days of discovery unless precluded by legal, regulatory, or physical access constraints. The Contractor shall use all reasonable efforts to obtain access. If precluded, removal and stabilization must take place within seven calendar days of obtaining access. The Contractor is responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work.
 - d. Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all off-site paved surfaces, within 24 hours of discovery, or if applicable, within a shorter time if requested by the Owner. The Contractor is responsible for the operation and maintenance of temporary and permanent water quality management BMPs, as well as all erosion prevention and sediment control BMPs, for the duration of the construction work at the site. The Contractor is responsible until the owner/operator, has assumed control according to over all areas of the site that have not been finally stabilized or the site has undergone final stabilization.
 - e. If sediment escapes the construction site, off-site accumulations of sediment must be removed in a manner and at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets.)
4. All infiltration areas must be inspected to ensure that no sediment from ongoing construction activities is reaching the infiltration/filtration area and these areas are protected from compaction due to construction equipment driving across the infiltration area.

F. POLLUTION PREVENTION MANAGEMENT MEASURES

The Contractor shall implement the following pollution prevention management measures on the site:

1. Storage, Handling, and Disposal of Construction Products, Materials, and Wastes: The contractor shall comply with the following standards to minimize the exposure to stormwater of any of the products, materials, or wastes at the project sites. Products or wastes which are either not a source of contamination to stormwater or are designed to be exposed to stormwater are not held to this requirement:
 - a. Building products that have the potential to leach pollutants must be under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by a similarly effective means designed to minimize contact with

- stormwater.
- b. Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials must be under cover (e.g., plastic sheeting or temporary roofs) to prevent the discharge of pollutants or protected by similarly effective means designed to minimize contact with stormwater.
 - c. Hazardous materials, toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) must be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste or hazardous materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable.
 - d. Solid waste must be stored, collected and disposed of properly in compliance with Minn. R. ch. 7035.
 - e. Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. ch. 7041.
2. Fueling and Maintenance of Equipment or Vehicles; Spill Prevention and Response: The contractor shall take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. In situations where permanent containment is not feasible, rubberized containers suitable for use under equipment during fueling operations is acceptable. The contractor must conduct fueling in a contained area unless infeasible. The contractor must ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. The contractor must report and clean up spills immediately as required by Minn. Stat. § 115.061, using dry clean up measures where possible.
 3. Vehicle and equipment washing: No vehicle or equipment washing is allowed at project sites, including but not limited to staging areas.
 4. Concrete and other washouts waste shall be hauled off site and returned to the concrete plant washout area or other approved disposal site. The contractor must provide effective containment for all liquid and solid wastes generated by washout operations (concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the construction activity. The liquid and solid washout wastes must not contact the ground, and the containment must be designed so that it does not result in runoff from the washout operations or areas. Liquid and solid wastes must be disposed of properly and in compliance with MPCA rules. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

G. FINAL STABILIZATION

The Contractor must ensure final stabilization of the site. The Contractor shall follow the procedure described by Part 1.5(H) within 30 days after final stabilization is complete.

1. All soil disturbing activities at the site have been completed and all soils must be stabilized by a uniform perennial vegetative cover with a density of 70 percent over the entire pervious surface area, or other engineer-approved equivalent means necessary to prevent soil failure under erosive conditions and;
 - a. All drainage ditches, constructed to drain water from the site after construction is complete, must be stabilized to preclude erosion;
 - b. All temporary synthetic, and structural erosion prevention and sediment control BMPs must be removed as part of the site final stabilization, except as specifically authorized/required Owner or its designated storm water point-of-contact;

- c. The Contractor must clean out all sediment from conveyances and from temporary sedimentation basins that are to be used as permanent water quality management basins. Sediment must be stabilized to prevent it from being washed back into the basin, conveyances or drainage ways discharging off-site or to surface waters. The cleanout of permanent basins must be sufficient to return the basin to design capacity.

3.04 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

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SECTION 32 13 13

EXTERIOR CONCRETE PAVING

PART 1 - GENERAL

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

1.02 SUMMARY

A. This Section includes exterior cement concrete pavement for the following:

1. Driveways and roadways.
2. Curbs and gutters.
3. Walkways.

B. Related Sections include the following.

1. Division 03 Section "Cast-in-Place Concrete" for general building applications of concrete.
2. Division 31 Section "Earth Moving" for subgrade preparation, grading, and subbase course.
3. Division 32 Section "Concrete Paving Joint Sealants" for joint sealants of joints in concrete pavement and at isolation joints of concrete pavement with adjacent construction.

1.03 DEFINITIONS

A. Cementitious Materials. Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.04 SUBMITTALS

A. Product Data. For each type of manufactured material and product indicated.

B. Design Mixtures. For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Qualification Data. For certified concrete plant.

D. Material Test Reports. From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.

E. Material Certificates. Signed by manufacturers certifying that each of the following materials complies with requirements:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Admixtures.

4. Applied finish materials.
5. Bonding agent or epoxy adhesive.
6. Joint fillers.

F. Field Quality-Control Test Reports.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications. Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications. An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
- C. ACI Publications. Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.
- D. Concrete Testing Service. Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.06 PROJECT CONDITIONS

- A. Traffic Control. Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.01 FORMS

- A. Form Materials. Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 1. Use flexible or curved forms for curves with a radius 100 feet or less.
- B. Form-Release Agent. Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.02 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement. ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded Wire Reinforcement. ASTM A 497, flat sheet.
- C. Epoxy-Coated Welded Wire Fabric. ASTM A 884/A 884M, Class A, plain steel.
- D. Reinforcing Bars. ASTM A 615/A 615M, Grade 60; deformed.
- E. Galvanized Reinforcing Bars. ASTM A 767/A 767M, Class II zinc coated, hot-dip galvanized after fabrication and bending; with ASTM A 615/A 615M, Grade 60 deformed bars.

- F. Epoxy-Coated Reinforcing Bars. ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, Grade 60 deformed bars.
- G. Steel Bar Mats. ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60, deformed bars; assembled with clips.
- H. Plain Steel Wire. ASTM A 82.
- I. Deformed-Steel Wire. ASTM A 496.
- J. Epoxy-Coated-Steel Wire. ASTM A 884/A 884M, Class A coated.
- K. Epoxy-Coated Joint Dowel Bars. ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60, plain steel bars.
- L. Tie Bars. ASTM A 615/A 615M, Grade 60, deformed.
- M. Hook Bolts. ASTM A 307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- N. Bar Supports. Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
- O. Epoxy Repair Coating. Liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.
- P. Zinc Repair Material. ASTM A 780.

2.03 CONCRETE MATERIALS

- A. Cementitious Material. Use one of the following cementitious materials, of the same type, brand, and source throughout the Project:
 - 1. Portland Cement. ASTM C 150, Type I, II, I/II, III, and V, Fly Ash. ASTM C 618, Class F.
- B. Normal-Weight Aggregates. ASTM C 33, Class 4M coarse aggregate, uniformly graded. Provide aggregates from a single source with documented service record data of at least 10 years satisfactory service in similar pavement applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size. 1 inch nominal.
 - 2. Fine Aggregate. Free of materials with deleterious reactivity to alkali in cement.
- C. Water. ASTM C 94/C 94M.
- D. Air-Entraining Admixture. ASTM C 260.
- E. Chemical Admixtures. Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass

of cementitious material.

1. Water-Reducing and Retarding Admixture. ASTM C 494/C 494M, Type D.
2. Plasticizing and Retarding Admixture. ASTM C 1017/C 1017M, Type II.

2.04 CURING MATERIALS

- A. Moisture-Retaining Cover. ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- B. Water. Potable.
- C. Evaporation Retarder. Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

2.05 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips. ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Slip-Resistive Aggregate Finish. Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery with emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.
- C. Bonding Agent. ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Epoxy Bonding Adhesive. ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to requirements, and as follows:
 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.06 CONCRETE MIXTURES

- A. Prepare Design Mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
 1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.
- B. Proportion Mixtures to provide normal-weight concrete with the following properties:
 1. Compressive Strength (28 Days). 4500 psi.
 2. Maximum Water-Cementitious Materials Ratio at Point of Placement. 0.42.
 3. Slump Limit. 3 inches, plus or minus 1 inch.
- C. Add Air-Entraining Admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows.
 1. Air Content. 6 percent plus or minus 1.5 percent for 1-inch nominal maximum aggregate size.
- D. Limit Water-Soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- E. Chemical Admixtures. Use admixtures according to manufacturer's written instructions.

1. Use plasticizing and retarding admixture in concrete, as required, for placement and workability.
 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- F. Cementitious Materials. Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals as follows:
1. Fly Ash or Pozzolan. 25 percent.

2.07 CONCRETE MIXING

- A. Ready-Mixed Concrete. Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.
1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

2.08 TRUNCATED DOMES

- A. TRUNCATED DOMES SHALL BE NEENAH CAST IRON 2x2 UNPATED PLATES.
- B. TRUNCATED DOMES SHALL BE INSTALLED PER MANUFACTURES RECOMENDATIONS
1. If necessary, connect multiple plates together.
 2. Pour concrete.
 3. Use supplied lifting springs and a construction 2x4 or pipe to lift plates into position.
 4. Set plates in wet concrete at final position.
 5. Remove lifting springs.
 6. Press assembly into wet concrete to final elevation.
 7. Finish concrete around assembly
 8. Remove any wet concrete that may have spilled on to the plate surface.

General

Detectable warnings shall be an integral part of the ramp and comply with section 4.29 of the ADA Accessibility Guidelines and section 705* of the 2010 ADA standards for accessible design.

Dome Size (4.29.2 and 705.1.1*)

Truncated domes in detectable warning surface shall have a base diameter of 0.9 inch (23 mm) minimum and 1.4 inches (36 mm) maximum, a top diameter of 50 percent of the base diameter minimum, to 65 percent of the base diameter maximum, and a height of 0.2 inch (5.1 mm).

Dome Spacing (4.29.2 and 705.1.2*)

Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 inches (41 mm) minimum and 2.4 inches (61 mm) maximum, and a base-to-base spacing of 0.65 inch (17 mm) minimum, measured between the most adjacent domes on a square grid.

Contrast (4.29.2 and 705.1.3*)

Detectable warning surfaces shall contrast visually with adjacent walking surfaces — either light-on-dark, or dark-on-light.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine Exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-Roll Prepared Subbase surface below concrete pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding.
 - 1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
- C. Proceed with Concrete Pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

3.02 PREPARATION. Remove loose material from compacted subbase surface immediately before placing concrete.

3.03 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, Brace, and Secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean Forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.04 STEEL REINFORCEMENT

- A. General. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean Reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, Space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install Welded Wire Reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.05 JOINTS

- A. General. Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
 - 1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Construction Joints. Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless

pavement terminates at isolation joints.

1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
 2. Provide tie bars at sides of pavement strips where indicated.
 3. Butt Joints. Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Isolation Joints. Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
1. Locate expansion joints at intervals of 50 feet (15.25 m), unless otherwise indicated.
 2. Extend joint fillers full width and depth of joint.
 3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints. Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness as follows:
1. Grooved Joints. Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 3/8-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooved marks on concrete surfaces.
 2. Sawed Joints. Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
- E. Edging. Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.06 CONCRETE PLACEMENT

- A. Inspection. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove Snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten Subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do Not Add Water to concrete during delivery or at Project site.
- F. Do Not Add Water to fresh concrete after testing.

- G. Deposit and Spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- H. Consolidate Concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- I. Screed Pavement Surfaces with a straightedge and strike off.
- J. Commence Initial Floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- K. Curbs and Gutters. When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
- L. Slip-Form Pavers. When automatic machine placement is used for pavement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce pavement to required thickness, lines, grades, finish, and jointing as required for formed pavement.
 - 1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of paver machine during operations.
- M. When Adjoining Pavement Lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.
- N. Cold-Weather Placement. Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 - 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 designs.
- O. Hot-Weather Placement. Comply with ACI 301 and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.07 FLOAT FINISHING

- A. General. Do not add water to concrete surfaces during finishing operations.
- B. Float Finish. Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 1. Medium-to-Fine-Textured Broom Finish. Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3.08 SPECIAL FINISHES

- A. Slip-Resistive Aggregate Finish. Before final floating, spread slip-resistive aggregate finish on pavement surface according to manufacturer's written instructions and as follows:
 1. Cure concrete with curing compound recommended by slip-resistive aggregate manufacturer. Apply curing compound immediately after final finishing.
 2. After curing, lightly work surface with a steel wire brush or abrasive stone and water to expose nonslip aggregate.

3.09 CONCRETE PROTECTION AND CURING

- A. General. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder. Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- D. Begin Curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods. Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 1. Moisture-Retaining-Cover Curing. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.10 PAVEMENT TOLERANCES. Comply with tolerances of ACI 117 and as follows:

- A. Elevation. 1/4 inch.
- B. Thickness. Plus 3/8 inch, minus 1/4 inch.

- C. Surface. Gap below 10-foot long, unleveled straightedge not to exceed 1/4 inch.
- D. Lateral Alignment and Spacing of Tie Bars and Dowels. 1 inch.
- E. Vertical Alignment of Tie Bars and Dowels. 1/4 inch.
- F. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge. 1/2 inch.
- G. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge. Length of dowel 1/4 inch per 12 inches.
- H. Joint Spacing. 3 inches.
- I. Contraction Joint Depth. Plus 1/4 inch, no minus.
- J. Joint Width. Plus 1/8 inch, no minus.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency. Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Testing Services. Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 - 1. Testing Frequency. Obtain at least 1 composite sample for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 - 2. Slump. ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
 - 3. Air Content. ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
 - 4. Concrete Temperature. ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
 - 5. Compression Test Specimens. ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
 - 6. Compressive-Strength Tests. ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.
- C. Strength of Each Concrete Mix will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test Results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

- E. Nondestructive Testing. Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- F. Additional Tests. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- G. Remove and Replace concrete pavement where test results indicate that it does not comply with specified requirements.
- H. Additional Testing and Inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.12 REPAIRS AND PROTECTION

- A. Remove and Replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
- B. Drill Test Cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- C. Protect Concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain Concrete Pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

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SECTION 32 32 19

UNIT MASONRY RETAINING WALL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes furnishing of materials and labor required for the erection of all concrete unit retaining wall work. Furnish and install concrete retaining wall units, components, accessories, and the like as required throughout the work.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. C90 Specification for Loadbearing Concrete Masonry Units
 - 2. C140 Specification for Sampling and Testing Concrete Masonry Units
 - 3. C666 Test Method for Resistance of Concrete to Rapid Freezing and Thawing
 - 4. D448 Classification for Sizes of Aggregate for Road and Bridge Construction

1.03 SUBMITTALS

- A. Sample/s showing the full range of colors and textures available shall be submitted for selection and approval. These may be face shell units or small scale units, but the color and texture must be equivalent with the material being supplied. If there is a range in the color that will normally occur, provide samples from both ends of the color range. Maintain the approved sample at the job site until all applicable work is installed. Provide a 12"x12" piece of Geogrid material being proposed for this project.
- B. Manufacturer's Data and installation instructions for concrete unit retaining wall shall be submitted for approval.
- C. Shop Drawings. Submit shop drawings of the layout of the concrete unit retaining walls including plan view, sections, and elevations. Retaining wall design and shop drawings shall include reinforcement and drainage provisions. Show anchors on shop drawings where required, including any required anchoring methods for securing 'Cap Block' units used to top off the retaining wall.

1.04 DELIVERY, STORAGE, AND HANDLING. Concrete units shall be stored off the ground and protected from the weather and from damage.

- A. Faces of the Concrete Wall Units shall be free of chips, cracks, and stains.
- B. Contractor shall prevent soiling/staining agents (i.e., mud, cement, epoxy, sealant, adhesives, etc.) from coming in contact with the retaining wall materials.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS AND PRODUCTS. The following manufacturers and their products are acceptable for this project, providing they can meet the specifications herein.

- A. KEYSTONE Retaining wall systems – COMPAC Block or approved equal per MnDOT list of approved products.

<https://www.dot.state.mn.us/products/walls/drycastwalls.html>

2.02 MATERIALS. The concrete unit retaining wall design shall be based on a concrete block that has a top locator or a pin, or a front lip to the block, or a rear lip to the block; the locking device locks the block into position and does not allow the wall to shift forward. Provide materials that meet the following requirements:

- A. Block Face Finish. Rock face finish.
- B. Block Face Design. Flat face to provide a continuous planar surface. Do not provide block with curved, angular, or round edges.
- C. Block Color. Provide full range of all available colors, with a minimum of four colors to choose from. Block color shall be selected by the Architect/Engineer during submittal phase.
- D. Cap Block. Provide a solid cap block to provide a finished top surface for the concrete unit retaining wall. The anchoring of the cap block must be done in such a way that will not allow the removal of the cap block units.
- E. Corner Block. Provide a solid corner block with 90 degree corner for use at 90 degree outside corners of the concrete unit retaining wall, as required. Finish shall extend around corner and be on all exposed surfaces, and shall match the specified finish of a typical concrete unit retaining wall block.
- F. Block Strength. Concrete units shall have a minimum compressive strength of 3500 psi in accordance with ASTM C90 and ASTM C140, and the maximum water absorption shall be limited to 7.0%. The concrete units shall have adequate freeze-thaw protection, and a average absorption of 5% in accordance with ASTM C666, modified to 50 cycles.
- G. Moisture Absorption Reducing Agent. All concrete units shall have an integral additive such as Dri-Block by WR Grace, or equal.
- H. Block Dimensions. Concrete units dimensions are to be uniform and consistent, with 1/8 inch maximum dimensional deviation (i.e., plus 1/16 inch and/or minus 1/16 inch).
- I. Block Setback. Provide a block setback as recommended by the block manufacturer.
- J. Geogrid. Provide a geogrid material as recommended by the concrete unit retaining wall manufacturer. Geogrid shall be high density polyethylene or polyester material as manufactured by Mirafi, Norcross, GA; Amoco, Atlanta, GA; or equal. The geogrid must be provided and installed to meet the design requirements of this project.
- K. Granular Fill shall meet the requirements of Section 31 20 00. Place and compact as required for fulfilling the requirements of the design. Note that granular fill must be crushed stone with angular faces, not rounded river rock.

- L. Drainage Aggregate. Fill for units as required shall consist of free-draining, coarse aggregate that is 1/2 inch to 3/4 inch with no more than 5% passing the No. 50 sieve and conforming to requirements of ASTM D448-86 Standard Classification for Sizes of Aggregate for Road and Bridge Construction, designation 57, 67, 6, 7, or 8. Gradation of the fill shall be approved by the Architect/Engineer. "Pea gravel" shall not be used.
 - M. Drain Tile shall be used if required and shall be as specified by the system designer.
- 2.03 DESIGN REQUIREMENTS. Design of the concrete unit retaining wall must be based on the following parameters:
- | | |
|-----------|------------|
| Surcharge | 300 psf |
| Phi | 28 degrees |
| Density | 120 psf |
| Cohesion | 0 psf |
- 2.04 SEALER for concrete unit walls shall be Enviroseal 40 as manufactured by Harris Specialty Chemicals, Inc., or equal. This is for the reducing of efflorescents.

PART 3 - EXECUTION

- 3.01 TRENCH PREPARATION. Excavate a shallow trench to the depth and width of the modules, plus allowance for granular fill material. Place a 6-inch layer (deeper if shown on the drawings) of granular fill and compact by the Ordinary Compaction Method. The base material shall be placed on undisturbed native soils or suitable replacement fills compacted to 95% of Standard Proctor.
- 3.02 INSTALLATION. The Contractor shall provide for a level base in both the transverse and longitudinal directions.
- A. First Layer. Install the first layer of modules by laying the units tight side by side over the prepared foundation, keeping all units level and in alignment. Backfill behind each layer of modules with granular fill material to the excavation face. All voids in and between units must be filled and tamped down. Compact backfill by hand or with mechanical tamper, taking care not to compact directly on the wall units. Note that compaction methods used must be able to accomplish the compaction required for the given design (i.e., compaction may be for typical backfill, or for sidewalk placement, or for parking placement, verify with the plans). Check all units again after compaction for level and proper alignment.
 - B. Subsequent Layers. Install the next layer module such that it bridges two units below in a running bond pattern. Check block for level and proper alignment. Backfill behind each layer of modules with granular fill material to the excavation face. All voids in and between units must be filled and tamped down. Compact backfill by hand or with mechanical tamper, taking care not to compact directly on the wall units. Compact per design requirements. Lay up each subsequent concrete unit course in a like manner.
 - C. Geogrid Placement. At elevations that require the placement of geogrid, place concrete units and the compacted fill to the proper elevation. Cut geogrid to the designed embedment length and lay behind wall with cut edge of geogrid on top of wall, as recommended by the concrete unit manufacturer. Extend to back of excavation. Each geogrid layer must be pretensioned by pulling tight and staking into the compacted backfill. Follow the manufacturer's overlap requirements of uniaxial and biaxial grids. Verify the correct orientation of the geogrid (roll direction). Place the next course of concrete units on top of geogrid and place and compact fill as herein specified for a typical course of concrete units and fill. Geogrid must be laid at the proper elevation and orientation as shown on the shop drawings and as recommended by the system designer. Repeat this procedure to the extent of the typical unit wall height (minus the cap block).

- D. Corner Block. Install corner block and step block as recommended by the manufacturer, taking care to integrate the modules into the overall retaining wall structure.
- E. Cap Block. The final layer of concrete unit retaining wall should be made using cap block units. The cap block units shall be secured using an approved construction adhesive, epoxy cement, mortar, or other recommended anchoring system approved by the manufacturer. The anchoring method used must permanently secure the cap block units so they cannot be removed. Use angle/straight side caps as required to accomplish concave and convex radius.

The Contractor shall anchor the ends of the walls into the existing fill slopes to provide a finished appearance, as directed by the Architect/Engineer. Where the walls adjoin existing concrete retaining walls, the joint shall be of minimum dimension and shall provide a satisfactory appearance. The wall ends shall be uniform, vertical, and all voids shall be filled as approved.

- F. Clear Sealer. After fully constructing wall, apply 2 coats of clear sealer to reduce the potential of salt effluorescence.

END OF SECTION

SECTION 32 90 00

SITE PROTECTION, RESTORATION, PLANTINGS AND LANDSCAPE ACCESSORIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.02 SUMMARY

A. Section Includes

1. All trees must be protected from damage. Note in only one (1) location may one (1) tree be removed. That tree shall be replaced at the end of the project with one of the same family, genus and size.
 - a. Trees need to be protected and the soil cannot be compacted. Owner will work with the contractor to find a reasonable tree pruning solution to allow building access.
 - b. Complete removal and replacement with smaller material is not acceptable.
 - c. Typically shrub plantings can be removed and replaced with comparably sized material.
 - d. The contractor needs to fence the trees to protect them from impacts, exhaust, and compaction. The extent of the fencing depends on the situation and tree canopy size. Coordinate fencing with Owner.
2. All plantings and shrubs that are damaged will be replaced. See Reference Drawings for existing planting plans.
3. The existing irrigation system must be protected from damage and where needed to be removed for work, shall be replaced to match existing. Coordinate with Owner.
4. Where sidewalks are damaged, they shall be replace to match the original.

1.03 REFERENCES

A. American National Standards Institute (ANSI)

1. Z60.1 American Standard for Nursery Stock

B. American Society for Testing and Materials (ASTM)

1. C33 Specification for Concrete Aggregates

C. Minnesota Department of Transportation (Mn/DOT) Standard Specifications for Highway Construction, Latest Edition

1. 2571 Plant Installation
2. 3861 Plant Stock
3. 3882 Mulch Material

1.04 SUBMITTALS

- ##### A.
- Certification of plant materials for conformance with inspection requirements of State, County, and Local authorities specified in this Section shall be submitted.

- B. Permits. Submit copies of executed permits required by State, County, and Local authorities approving transportation, handling, and use of plant materials and chemicals.
- 1.05 QUALITY ASSURANCE. Contractor shall be responsible for all inspection of plant material required by the public authorities having jurisdiction and shall secure required permits.
- 1.06 DELIVERY, STORAGE, AND HANDLING
- A. Fertilizer shall be delivered to the job in manufacturer's original, unopened containers with labels intact and legible.
- 1.07 MAINTENANCE.
- A. Trees, Shrubs, and Other Plantings. Maintenance shall immediately follow planting operations and shall continue until acceptance of the total project by the Owner, except that no maintenance will be required between November 15 or freeze-up, whichever is earlier, and April 15.
- Plantings shall be kept in a healthy, growing condition by watering, weeding, cultivating, pruning, spraying, and trimming, as applicable or recommended by nursery supplying materials.
- 1.08 WARRANTY. Turf and plantings shall be subject to a full one (1) year warranty beginning upon acceptance of the total project by the Owner. Defective workmanship or materials as identified by the following procedures shall be repaired as directed, at no additional cost to the Owner.
- Materials evidencing satisfactory growth at the applicable inspection tour will be accepted. The Contractor shall not be responsible for damage or poor growth due to lack of maintenance after the specified maintenance period.
- A. Sod. Displaced or dead sod, from any cause, which shall appear within the first year after acceptance, shall be considered defective. Defective sodding shall be replaced promptly by good work.
 - B. Trees, Shrubs, and Other Plantings. At the conclusion of the Warranty period, an inspection of plantings will be made to determine the condition of trees, shrubs and ground cover. All materials not evidencing new growth and sound health, as determined by the Architect/Owner, will be noted. This material shall be removed and new material shall be supplied and planted at no additional cost to the Owner.
- Trees shall further be warranted to remain upright for the full one (1) year warranty period. Trees which are found to be objectionably out of plumb, during the acceptance inspection, shall be replanted. The one (1) year warranty shall be extended for such specimens to include the next growing season after replanting.

PART 2 - PRODUCTS

2.01 TREES, SHRUBS, AND PLANTINGS

- A. General. Plant materials shall conform to the requirements of ANSI Z60.1 and to requirements elsewhere in this Section. Plant materials not satisfying all requirements of this Specification shall be removed by the Contractor and replaced with material as specified, at his own expense.

- B. Quality. All trees, shrubs, and the like shall be sound, healthy, free from disease and shall have healthy normal root systems. All plant material shall have been grown under climatic conditions similar to those in the locality of the project site. Plants shall not be pruned prior to delivery and planting. All trees shall have been transplanted or root pruned at least once in the past three (3) years. The Contractor shall furnish covering as may be necessary to protect the plant materials from drying out or other damage. All specimens shall be compact, true to form.
 - C. Transplanted Materials. The Contractor, at their option, may choose to transplant existing plant materials to a temporary holding location for the duration of the construction, and then transplant the material back to its original location. The Contractor will be responsible for the proper protection and maintenance of the plant material throughout construction and transplanting operations. The Contractor must meet the same maintenance and warranty provisions indicated for new plant materials elsewhere in this specification.
- 2.02 PLANTING SOIL for planters shall be a special blend using 1/3 of each of the following materials by volume:
- A. Topsoil meeting the requirements of Mn/DOT 3877.2C, Premium topsoil borrow.
 - B. Compost meeting the requirements of Mn/DOT 3890, Grade 2.
 - C. Sand meeting the requirements of Mn/DOT 3149.2K.
- 2.03 WATER shall be potable (or as otherwise approved) and shall be suitable for plant growth.
- 2.04 MULCH for general landscape plantings shall be double shredded hardwood mulch and shall conform to the requirements of Mn/DOT 3882, Type 6.
- 2.05 Drainage Aggregate for use in base of planters shall be clean, free-draining, medium size igneous landscape rock.
- 2.06 Geotextile Fabric for use in separating planting soil from drainage aggregate shall meet the requirements of Mn/DOT Specification 3733, Type 1.
- 2.07 Fertilizer Packets for use in planting trees and shrubs shall be "Unique Feeder Packets" or equal, with 3 to 5 years slow release characteristics.

PART 3 - EXECUTION

- 3.01 PLANTING TREES, SHRUBS, AND OTHER PLANTINGS. Plant trees, shrubs and the like in the locations shown. Planting holes, when dug, shall have vertical sides, and be circular in form. Excess and poor soil from planting areas shall be removed and disposed of legally. Bottom of planting pits and holes shall be lined with a minimum of 6" of planting soil. Trees, shrubs, and the like shall be set so that when settled they will have the same relation to the required grade as they bore to the natural grade before transplanting. Each unit shall be planted in specified planting soil. No soil in a frozen or muddy condition shall be used for planting or backfilling. During the planting period all plants must be thoroughly watered two (2) or three (3) times.

All new trees shall be trimmed in accordance with accepted modern practice subject to approval of the Owner.

The planting shall be done within the periods of April 15 to June 1, and September 15 to November 1 when practicable. The Contractor may proceed at other times with consideration of the Article elsewhere in this Section entitled "Warranty." The preparation of plant areas may proceed at any time after the subgrade has been established.

Upon completion of landscape planting the grounds shall be cleared of debris, materials, and equipment, which shall be removed from the grounds.

- 3.02 Planters. The Contractor shall remove plants and soil from the planters. After the waterproofing has been completed, tested and accepted, the planters shall be filled with 6" of drainage aggregate on the bottom, with geotextile fabric placed over the aggregate. Planting soil shall be placed to within 6" of the top of the planter, and 4" of shredded hardwood mulch shall be placed over the surface of the planting soil following planting of shrubs in the planter. The Contractor, shall plant new shrubs of the same size family and genus.
- 3.03 MULCHING, TREES, SHRUBS, PLANTING, AND GRAVEL BEDS. As called for on the drawings, place mulch over planting beds.
- 3.04 IRRIGATION SYSTEM: Owner shall identify and locate private irrigation systems onsite. Contractor shall be responsible to protect existing system. The contractor shall be responsible for repairs to heads, lines or other system components if damaged as a result of construction activities.

END OF SECTION

SECTION 32 92 00

TURF AND GRASSES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Sodding.

1.02 DEFINITIONS

A. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

B. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See drawing designations for planting soils.

1.03 PREINSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

1.04 INFORMATIONAL SUBMITTALS

A. Product certificates.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
2. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the Professional Landcare Network:

- a. Landscape Industry Certified Technician - Exterior.
- b. Landscape Industry Certified Lawncare Manager.
- c. Landscape Industry Certified Lawncare Technician.

3. Pesticide Applicator: State licensed, commercial.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

PART 2 - PRODUCTS

2.01 TURFGRASS SOD

- A. Turfgrass Sod: Certified, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.
- B. Turfgrass Species:
 - 1. Sod of grass species as follows:
 - a. Sun and Partial Shade: MnDOT Sodding, Type Lawn

2.02 FERTILIZERS

- A. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 22 percent nitrogen, 5 percent phosphorous, and 10 percent potassium, by weight.

2.03 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.04 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 - EXECUTION

3.01 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil according to Plan.
- B. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.02 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.
- C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.03 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
- B. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings.

3.04 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
 - 1. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

END OF SECTION

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SECTION 33 40 00

STORM SEWER CONSTRUCTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included in this Section shall include furnishing of labor and materials for the complete construction of a storm sewer extension laid as shown on the plans, including manholes and all necessary excavation, backfilling, and connection to existing.
- B. Related Work. See Section 31 20 00 for earthwork in connection with building construction and subgrade construction for parking areas served by the storm sewer extension specified in this Section. Coordinate the work.

1.02 REFERENCES

- A. Minnesota Department of Transportation (Mn/DOT) Standard Specifications for Construction, 2016 Edition
- B. Minnesota Department of Transportation (Mn/DOT) Standard Plates
 - 1. Standard Plate 3040F
 - 2. Standard Plate 3123H
 - 3. Standard Plate 3141B
 - 4. Standard Plate 4180G

PART 2 - PRODUCTS

2.01 STORM SEWER PIPE

- A. Corrugated Polyethylene (CP) shall meet Mn/DOT 3247, and shall have joints gasketed.
- B. TheroPlastic shall meet Mn/DOT 3245.
- C. Corrugated Polyethelene Drainage Tubing shall meet Mn/DOT 3278.

2.02 MANHOLE AND CATCH BASIN STRUCTURES. The Contractor shall use precast sections whenever possible.

2.03 MANHOLE/CATCH BASIN STEPS. Manholes and catch basins shall be furnished with polypropylene plastic reinforced or approved equal, and shall be in accordance with Mn/DOT Plate 4180G.

2.04 MANHOLE CASTINGS. Manhole casting shall be Neenah Catalog No. R-1642 Type "B" solid cover with concealed pickholes, or equal.

2.05 CATCHBASIN GRATE NEENAH 3250 ESVP or approved equal.

2.06 RIP RAP shall meet Mn/DOT 3601.

2.07 GEOTEXTILE FABRIC shall meet Mn/DOT 3733.

PART 3 - EXECUTION

- 3.01 ALIGNMENT AND GRADE. All pipe shall be laid and maintained to the required lines and grades, with manholes, catch basins and special structures at the required locations. No deviation from line or grade shall be made without the written consent of the Engineer.

- 3.02 EXCAVATION. See Mn/DOT 2303.3 (B).

- 3.03 PIPELAYING. The piping that does not conform to line and grade shall be relaid at the Contractor's expense. Each section having a firm and uniform bearing throughout its entire length.

Pipe shall be laid against the grade of the sewer. The spigot end of the pipe shall be inserted full depth into the bell, and, when completed, each line of pipe shall have a uniform and smooth invert.

Joints for all sewers shall be made watertight. As soon as the joint is made, the bell depression shall be filled with granular bedding material which shall be pressed under and around the joint, by hand, in such a way as to protect it from sagging or being disturbed.

The interior of all pipe shall, as the work progresses, be cleaned of all dirt and superfluous materials. The exposed end of the pipes shall be protected with suitable temporary covers. Pipe laid in place shall be protected from injury and disturbance.

- 3.04 BACKFILL. See Mn/DOT 2503.3 (D).

- 3.05 MANHOLE CATCH BASIN CONSTRUCTION. See Mn/DOT 2506.3.

The adjusting rings and the castings shall be set in a bed of mortar, and the exterior of the adjusting rings shall be given a mortar covering. The joints of the adjusting rings shall be completely filled with mortar and the interior joints struck smooth.

All rows of steps shall be set vertical through the height of the manholes.

- 3.06 CONNECTION TO EXISTING MANHOLE. The Contractor shall cut a hole into the side of the structure, at the design invert elevation and just large enough to accept the new pipe. Insert the pipe into the hole so that the end of the pipe is flush with the inside face of the structure, allow for expansion of the pipe as required by the manufacturer. The annular space around the pipe shall be filled and patched with cement mortar.

Pour a concrete collar around the pipe inlet to the structure with a minimum thickness of 6 inches and extending a minimum of 12 inches beyond the exterior face of the structure.

- 3.07 RIP RAP. The Contractor shall hand place rip rap at the locations as shown on the plans.

- 3.08 GEOTEXTILE FILTER FABRIC. Contractor shall place geotextile filter fabric under all rip-rap and extend 3 feet under the culvert apron or flared end section.

END OF SECTION

SECTION 33 46 00

SUBDRAINAGE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Perforated-wall pipe and fittings.
2. Geotextile filter fabrics.

1.02 ACTION SUBMITTALS

A. Product Data: For geotextile filter fabrics.

PART 2 - PRODUCTS

2.01 PERFORATED-WALL PIPES AND FITTINGS

- A. Perforated PE Pipe and Fittings: ASTM F 405 or AASHTO M 252, Type CP; corrugated, for coupled joints.

2.02 SOIL MATERIALS

- A. Soil materials are specified in Section 312000 "Earthwork."
- B. Filter aggregate shall meet requirements of MnDOT 3149 Fine Filter Aggregate.

2.03 GEOTEXTILE FILTER FABRICS

- A. Description: Fabric of PP or polyester fibers or combination of both, with flow rate range from 110 to 330 gpm/sq. ft. (4480 to 13 440 L/min. per sq. m) when tested according to ASTM D 4491.
- B. Structure Type: Nonwoven, needle-punched continuous filament.
1. Survivability: AASHTO M 288 Class 2.
 2. Styles: Flat and sock.

2.04 Trace Wire & Connections

- A. Trace wire shall be #12 AWG Copper Clad Steel, High Strength with a minimum 450 lb. break load, with minimum 30 mil HDPE Insulation thickness.
- B. Snake Pit magnetized trace boxes shall be installed at all clean out locations per manufacture instructions.

PART 3 - EXECUTION

3.01 EARTHWORK

- A. Excavating, trenching, and backfilling are specified in Section 312000 "Earth Moving."

3.02 FOUNDATION DRAINAGE INSTALLATION

- A. Place impervious fill material on subgrade adjacent to bottom of footing after concrete footing forms have been removed. Place and compact impervious fill to dimensions indicated, but not less than 6 inches (150 mm) deep and 12 inches (300 mm) wide.
- B. Lay flat-style geotextile filter fabric in trench and overlap trench sides.
- C. Place supporting layer of drainage course over compacted subgrade and geotextile filter fabric, to compacted depth of not less than 4 inches (100 mm).
- D. Encase pipe with sock-style geotextile filter fabric before installing pipe. Connect sock sections with adhesive.
- E. Install drainage piping as indicated in Part 3 "Piping Installation" Article for foundation subdrainage.
- F. Add drainage course to width of at least 6 inches (150 mm) on side away from wall and to top of pipe to perform tests.
- G. After satisfactory testing, cover drainage piping to width of at least 6 inches (150 mm) on side away from footing and above top of pipe to within 12 inches (300 mm) of finish grade.
- H. Install drainage course and wrap top of drainage course with flat-style geotextile filter fabric.
- I. Place layer of flat-style geotextile filter fabric over top of drainage course, overlapping edges at least 4 inches (100 mm).
- J. Place backfill material over compacted drainage course. Place material in loose-depth layers not exceeding 6 inches (150 mm). Thoroughly compact each layer. Final backfill to finish elevations and slope away from building.

3.03 UNDERSLAB DRAINAGE INSTALLATION

- A. Excavate for underslab drainage system after subgrade material has been compacted but before drainage course has been placed. Include horizontal distance of at least 6 inches (150 mm) between drainage pipe and trench walls. Grade bottom of trench excavations to required slope, and compact to firm, solid bed for drainage system.
- B. Lay flat-style geotextile filter fabric in trench and overlap trench sides.
- C. Place supporting layer of drainage course over compacted subgrade and geotextile filter fabric, to compacted depth of not less than 4 inches (100 mm).
- D. Encase pipe with sock-style geotextile filter fabric before installing pipe. Connect sock sections with adhesive.
- E. Install drainage piping as indicated in Part 3 "Piping Installation" Article for underslab subdrainage.
- F. Add drainage course to width of at least 6 inches (150 mm) on side away from wall and to top of pipe to perform tests.
- G. After satisfactory testing, cover drainage piping with drainage course to elevation of bottom of slab, and compact and wrap top of drainage course with flat-style geotextile filter fabric.

3.04 PIPING INSTALLATION

- A. Install piping beginning at low points of system, true to grades and alignment indicated, with unbroken continuity of invert. Bed piping with full bearing in filtering material. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions and other requirements indicated.
 - 1. Foundation Subdrainage: Install piping level and with a minimum cover of 36 inches (915 mm) unless otherwise indicated.
 - 2. Underslab Subdrainage: Install piping level.
 - 3. Retaining-Wall Subdrainage: When water discharges at end of wall into stormwater piping system, install piping level and with a minimum cover of 36 inches (915 mm) unless otherwise indicated.
 - 4. Lay perforated pipe with perforations down.
 - 5. Excavate recesses in trench bottom for bell ends of pipe. Lay pipe with bells facing upslope and with spigot end entered fully into adjacent bell.
- B. Use increasers, reducers, and couplings made for different sizes or materials of pipes and fittings being connected. Reduction of pipe size in direction of flow is prohibited.
- C. Install thermoplastic piping according to ASTM D 2321.

3.05 PIPE JOINT CONSTRUCTION

- A. Join perforated PE pipe and fittings with couplings according to ASTM D 3212 with loose banded, coupled, or push-on joints.
- B. Special Pipe Couplings: Join piping made of different materials and dimensions with special couplings made for this application. Use couplings that are compatible with and fit materials and dimensions of both pipes.

3.06 BACKWATER VALVE INSTALLATION

- A. Comply with requirements for backwater valves specified in Section 334100 "Storm Utility Drainage Piping."
- B. Install horizontal backwater valves in header piping downstream from perforated subdrainage piping.
- C. Install horizontal backwater valves in piping in manholes where indicated.

3.07 CLEANOUT INSTALLATION

- A. Comply with requirements for cleanouts specified in Section 334100 "Storm Utility Drainage Piping."
- B. Cleanouts for Retaining-Wall Subdrainage:
 - 1. Install cleanouts from piping to grade. Locate cleanouts at beginning of piping run and at changes in direction. Install fittings so cleanouts open in direction of flow in piping.
 - 2. In nonvehicular-traffic areas, use NPS 4 (DN 100) PVC pipe and fittings for piping branch fittings and riser extensions to cleanout. Set top of cleanout at grade.

3.08 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. After installing drainage course to top of piping, test drain piping with water to ensure free flow before backfilling.
2. Remove obstructions, replace damaged components, and repeat test until results are satisfactory.

B. Drain piping will be considered defective if it does not pass tests and inspections.

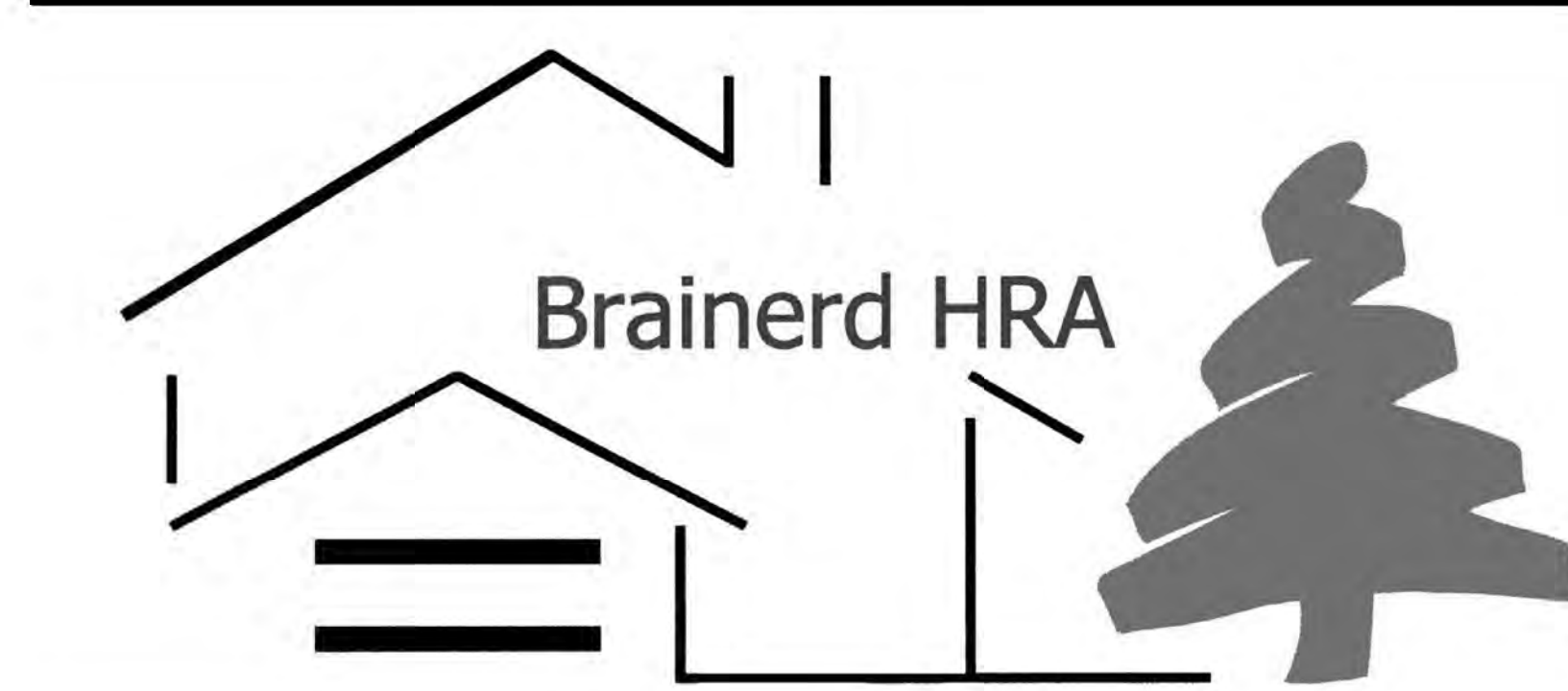
C. Prepare test and inspection reports.

3.09 CLEANING

- #### A.
- Clear interior of installed piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed. Place plugs in ends of uncompleted pipe at end of each day or when work stops.

END OF SECTION

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS DRAWING ADJUST SCALES ACCORDINGLY.



HOUSING AND REDEVELOPMENT AUTHORITY (HRA) OF BRAINERD NORTH STAR APARTMENTS & ADDITIONAL SITES - 2020 FLATWORK UPGRADES

410 EAST RIVER RD
BRAINERD, MN 56401

BIDDING SET,
2.25.2020

BRAINERD HRA

NORTH STAR
APARTMENTS &
ADDITIONAL
SITES - 2020
FLATWORK
UPGRADES

SHEET INDEX

A000	TITLE SHEET
A001	NORTH STAR APARTMENTS - DEMOLITION SITE PLAN
A100	NORTH STAR APARTMENTS - SITE PLAN
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A120	ADDITIONAL SITES - SITE PLAN
A130	ADDITIONAL SITES - SITE PLAN
A200	CONSTRUCTION DETAILS
A201	CONSTRUCTION DETAILS

GENERAL CONSTRUCTION NOTES

- 1 ALL WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES, RULES AND REGULATIONS.
- 2 CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, LICENSES AND CERTIFICATES AND PAY ALL FEES CONNECTED THEREWITH.
- 3 ALL DIMENSIONS MUST BE FIELD VERIFIED. EXISTING BUILDINGS ARE SHOWN FOR REFERENCE ONLY, AND ARE SUBJECT TO FIELD VERIFICATION. NOTIFY ARCHITECT REGARDING DISCREPANCIES BEFORE PROCEEDING WITH THE WORK AFFECTED.
- 4 REMOVE ALL DEBRIS AND MATERIALS GENERATED FROM DEMOLITION / CONSTRUCTION AND DISPOSE OF IN A LAWFUL MANNER. AT ALL TIMES, KEEP THE PERIMETER FREE FROM WASTE MATERIAL OR RUBBISH CAUSED BY THE WORK.
- 5 THE WORD "PROVIDE" AS USED IN THE DRAWINGS SHALL BE UNDERSTOOD TO MEAN "PROVIDE COMPLETE IN PLACE". THAT IS "FURNISHED AND INSTALLED". PROVIDE ALL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
- 6 ALL ITEMS WHICH ARE NECESSARY SHALL BE FURNISHED AND INSTALLED TO INSURE A GOOD WORKMANSHIP INSTALLATION EVEN THOUGH SUCH ITEMS ARE NOT SPECIFICALLY MENTIONED ON THE DRAWINGS. QUALITY AND FINISH REQUIREMENTS SHALL BE A MINIMUM ACCEPTABLE LEVEL OF QUALITY AS RECOGNIZED BY THE INDUSTRY.
- 7 VERIFY WITH OWNERS REPRESENTATIVE USE OF SITE, OR ADJACENT AREAS, FOR STAGING AND/OR STOCKPILING OF MATERIALS.
- 8 ALL MATERIALS SHALL BE STORED PER MANUFACTURERS RECOMMENDATIONS AND BE COVERED FROM WEATHER AND RAISED OFF OF THE GROUND TO PREVENT DAMAGE.
- 9 REVIEW ALL DRAWINGS AND SPECIFICATIONS TO COORDINATE WORK AND TO PROVIDE A COMPLETE INSTALLATION. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL FOR NOTES AS INFORMATION MAY PERTAIN TO MULTIPLE TRADES.
- 10 PATCH AND REPAIR EXISTING CONSTRUCTION TO LIKE NEW CONDITION AS A RESULT OF REMOVAL OR REPLACEMENT OF EXISTING CONSTRUCTION. ALL NEW AND EXISTING HOLES OR PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE PATCHED AND REPAIRED TO MAINTAIN THE INTEGRITY OF THE ASSEMBLY.

CONTACTS

OWNER'S REPRESENTATIVE
BRAINERD HRA
CONTACT: TERRY QUICK
P: 218.824.3434
E: TERRY@BRAINERDHRA.ORG

CIVIL ENGINEER
TKDA
CONTACT: WILL DEROCHE
P: 218.491.7384
E: WILL.DEROCHER@TKDA.COM

ARCHITECT
TKDA
CONTACT: WESLEY STABS
P: 218.491.7362
E: WESLEY.STABS@TKDA.COM

LOCATION MAP



GENERAL DEMOLITION NOTES

- 1 COORDINATE ALL WORK SHOWN ON DEMOLITION PLANS WITH WORK SHOWN ON CORRESPONDING FLOOR PLANS.
- 2 COORDINATE THE WORK WITH STRUCTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS.
- 3 CONTRACTOR SHALL PROVIDE SELECT DEMOLITION, REMOVAL AND RELOCATION OF EXISTING WORK AS REQUIRED FOR THE NEW WORK.
- 4 CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. THIS PLAN MAY DEVIATE FROM ACTUAL CONDITIONS - CONTRACTOR SHALL FIELD VERIFY.
- 5 PROTECT ALL WORK WHICH IS TO REMAIN. PATCH/REPAIR ANY DAMAGED WORK TO MATCH ADJACENT. PROVIDE ALL TEMPORARY SHORING AS REQUIRED.
- 6 CUTTING AND PATCHING SHALL BE DONE AS REQUIRED FOR THE PROPER EXECUTION OF THE WORK. WHERE OLD WORK IS REMOVED OR ALTERED, ALL WORK AFFECTED SHALL BE PROPERLY FILLED OUT TO MATCH EXISTING OR NEW WORK AS APPLICABLE.
- 7 CONTRACTOR SHALL VERIFY ALL MATERIALS, EQUIPMENT, ETC. TO BE SALVAGED PRIOR TO THE START OF ANY DEMOLITION. REMOVE AND STORE WITH CARE TO PREVENT DAMAGE AS DIRECTED BY OWNER.
- 8 ALL REMOVED WORK NOT OTHERWISE DIRECTED BY THE OWNER SHALL BECOME THE CONTRACTORS PROPERTY AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
- 9 COORDINATE LOCATION AND TYPE OF TEMPORARY SECURITY PARTITIONS WITH OWNER.

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PRINTED NAME: WESLEY STABS
LICENSE NO: 51237 DATE: 2.25.2020

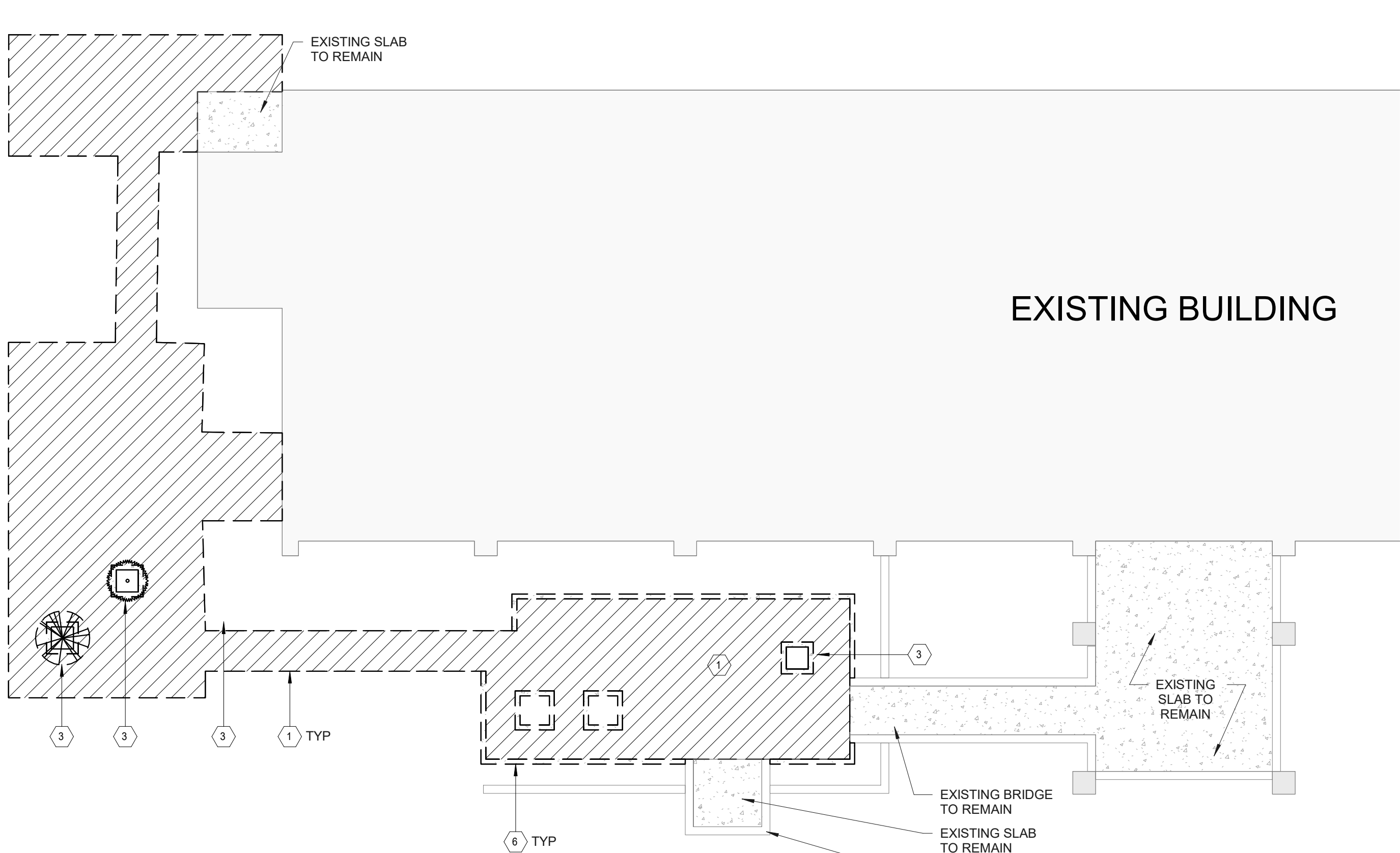
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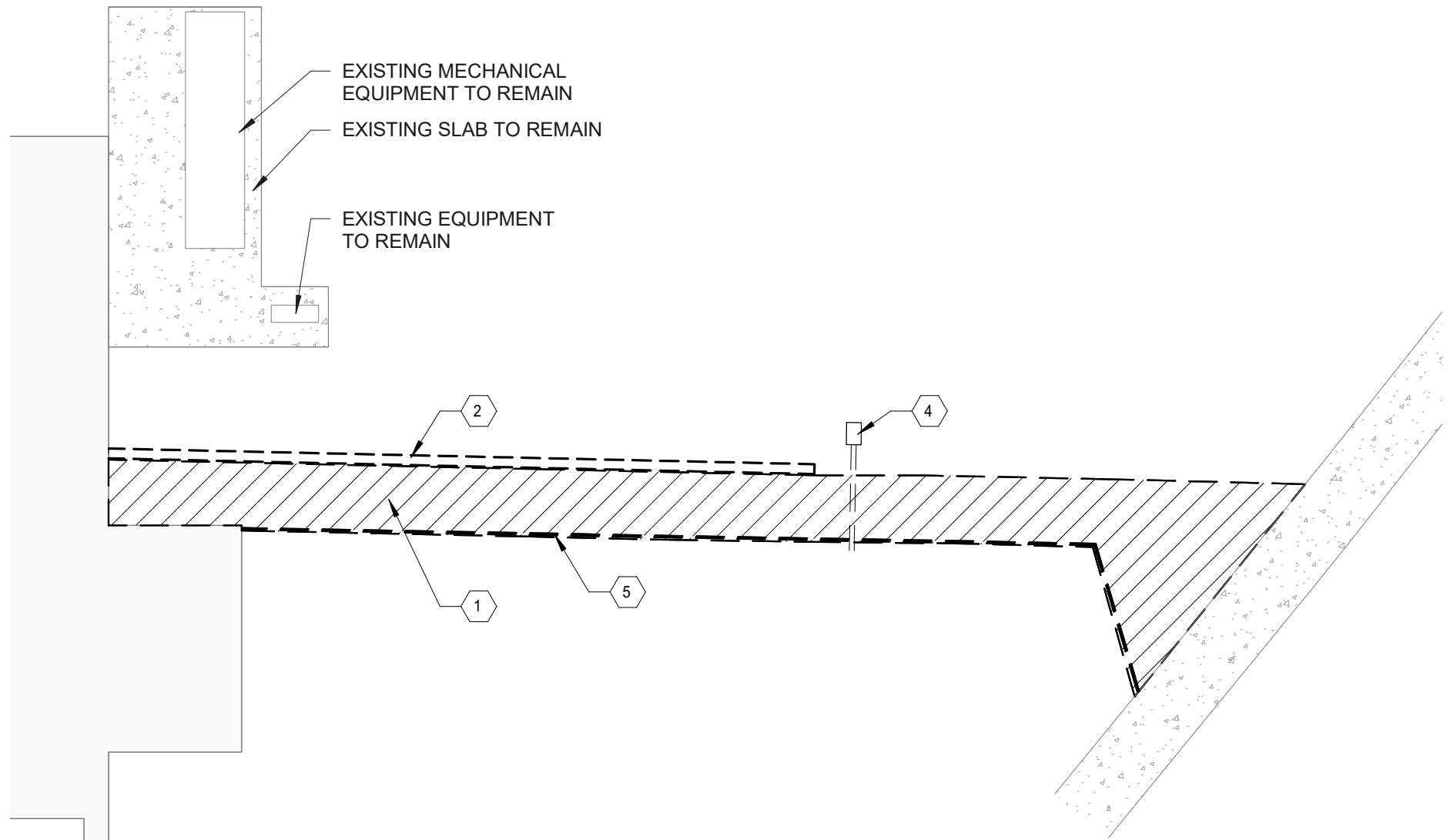
TITLE SHEET

A000

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ACCORDINGLY.



1
A001
DEMOLITION SITE PLAN - FIRST FLOOR
1" = 10'-0"

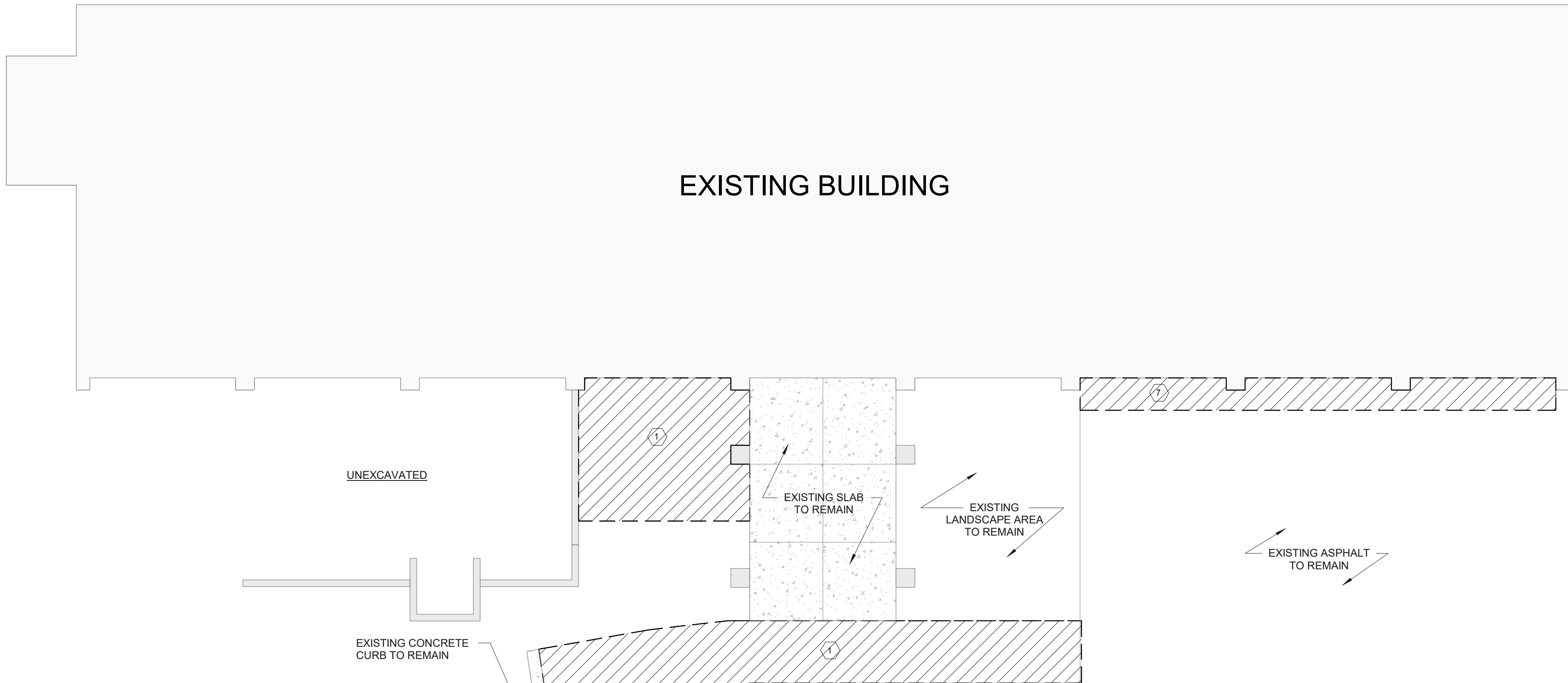


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DEMOLITION PLAN KEYNOTES

NOTE: ALL ITEMS DEMOLISHED ARE TO BE PROPERLY
DISPOSED OF ACCORDING TO LOCAL GUIDELINES.

- 1 REMOVE CONCRETE FLATWORK.
- 2 REMOVE RETAINING WALL.
- 3 REMOVE TREE AND SUBSURFACE ROOTS.
- 4 REMOVE YARD DRAIN, DRAINPIPE, AND ACCESSORIES.
- 5 REMOVE GUARDRAIL.
- 6 REMOVE CONCRETE CURB (INTEGRAL WITH CONCRETE FLATWORK).
- 7 REMOVE ASPHALT AND SUBGRADE AS REQUIRED FOR INSTALLATION OF NEW WORK.



2
A001
DEMOLITION SITE PLAN - GROUND FLOOR
1" = 10'-0"



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NORTH STAR
APARTMENTS -
DEMOLITION SITE
PLAN

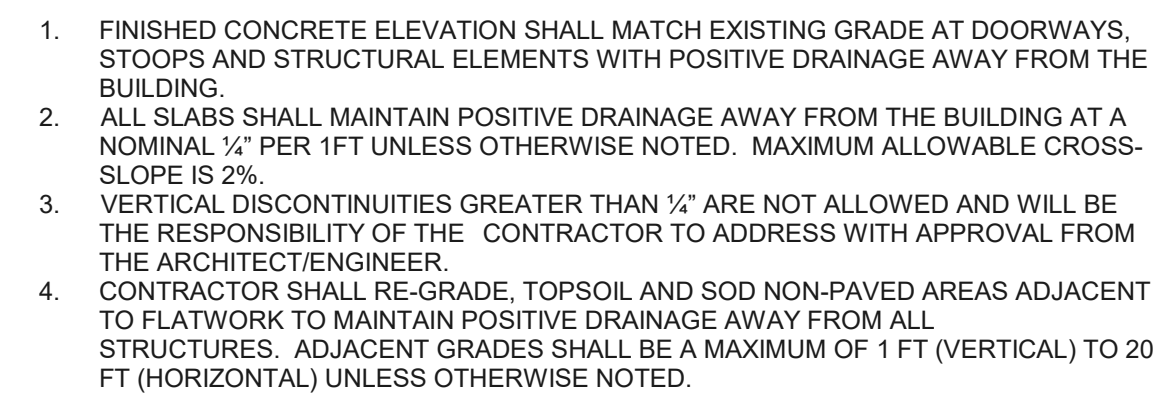
A001

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NORTH STAR APARTMENTS - SITE PLAN

686.000



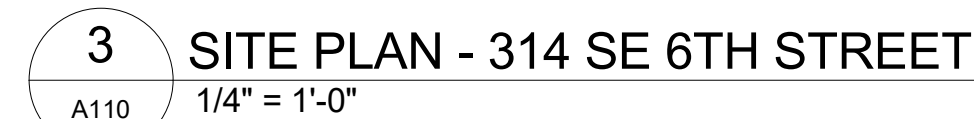
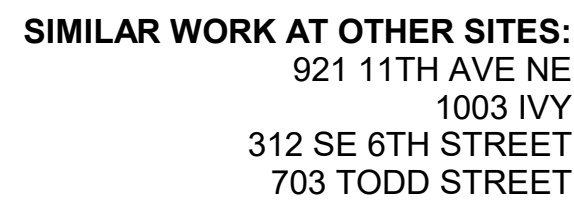
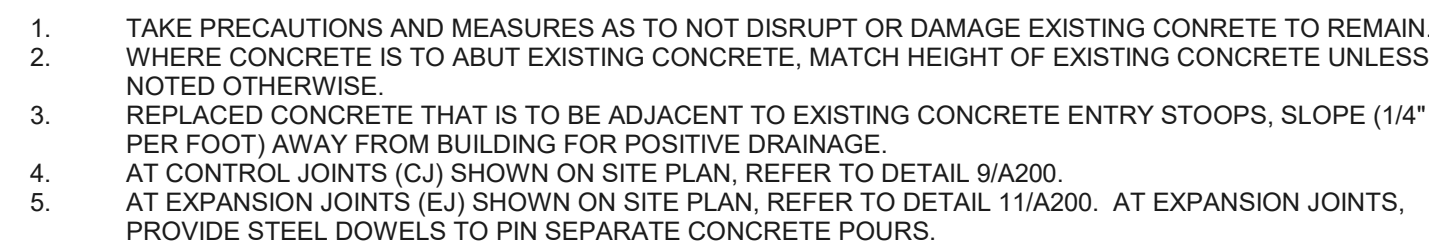
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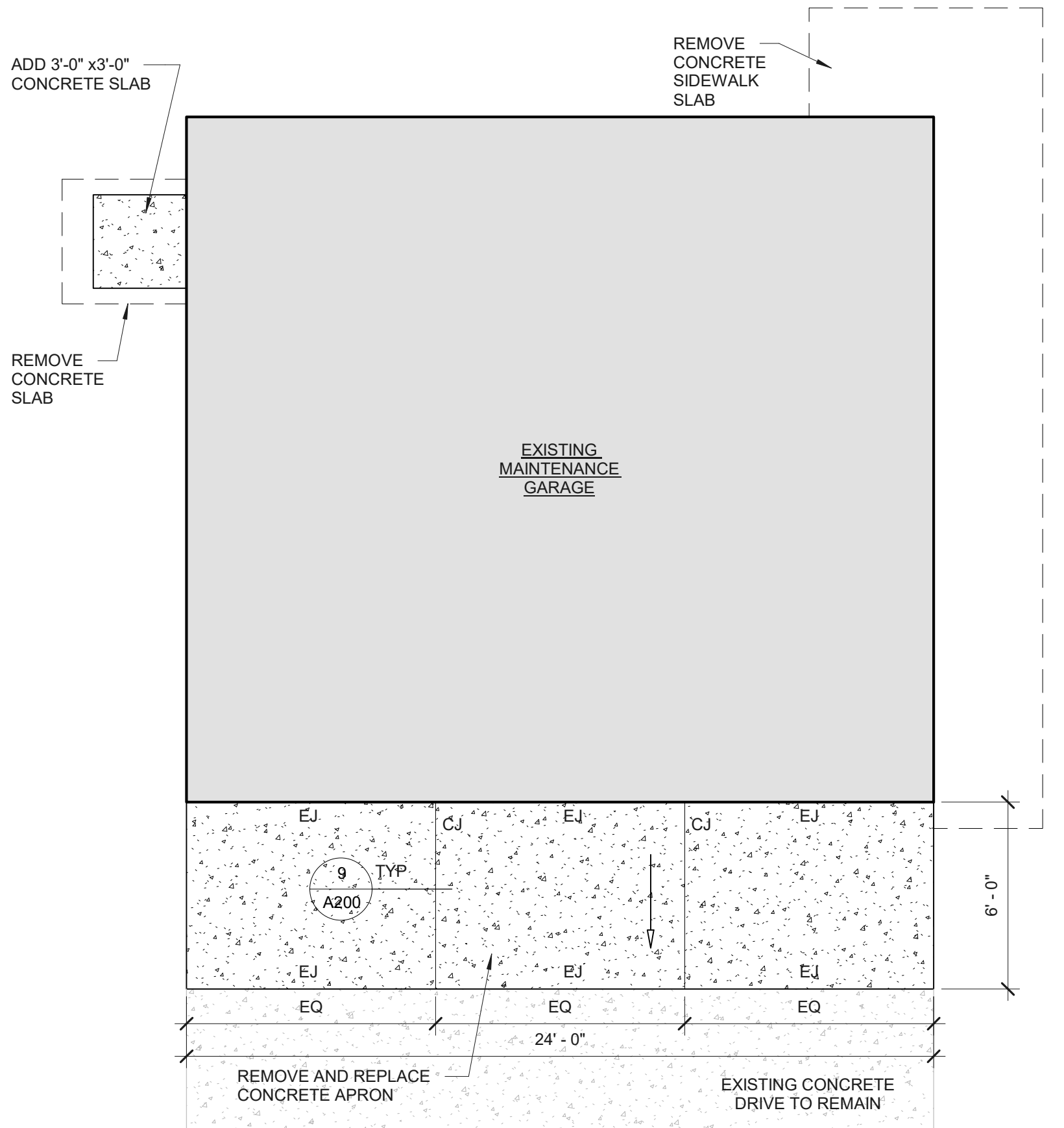
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ADDITIONAL SITES - SITE PLAN

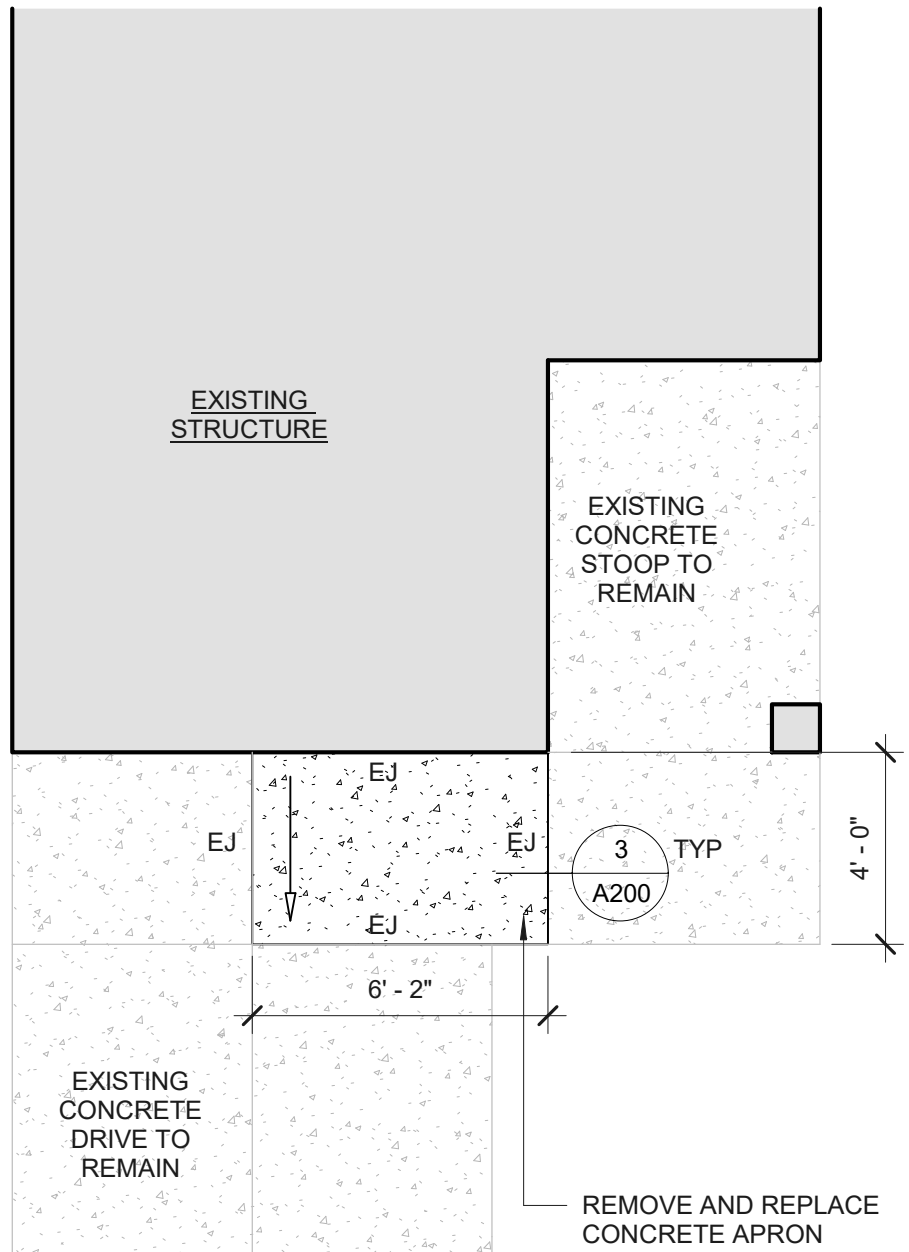
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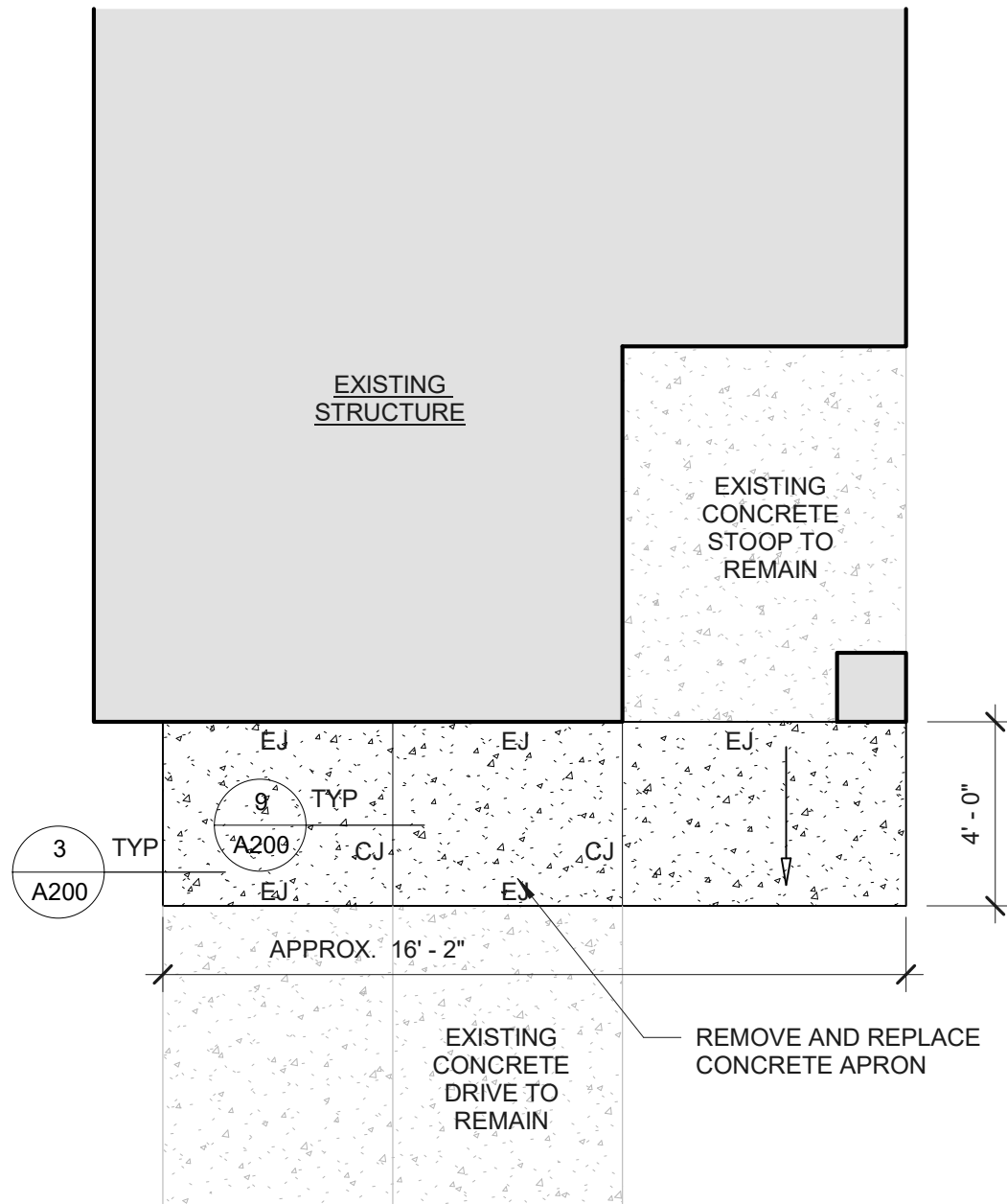


1 SITE PLAN - VALLEY TRAIL MAINTENANCE GARAGE
A120 1/4" = 1'-0"



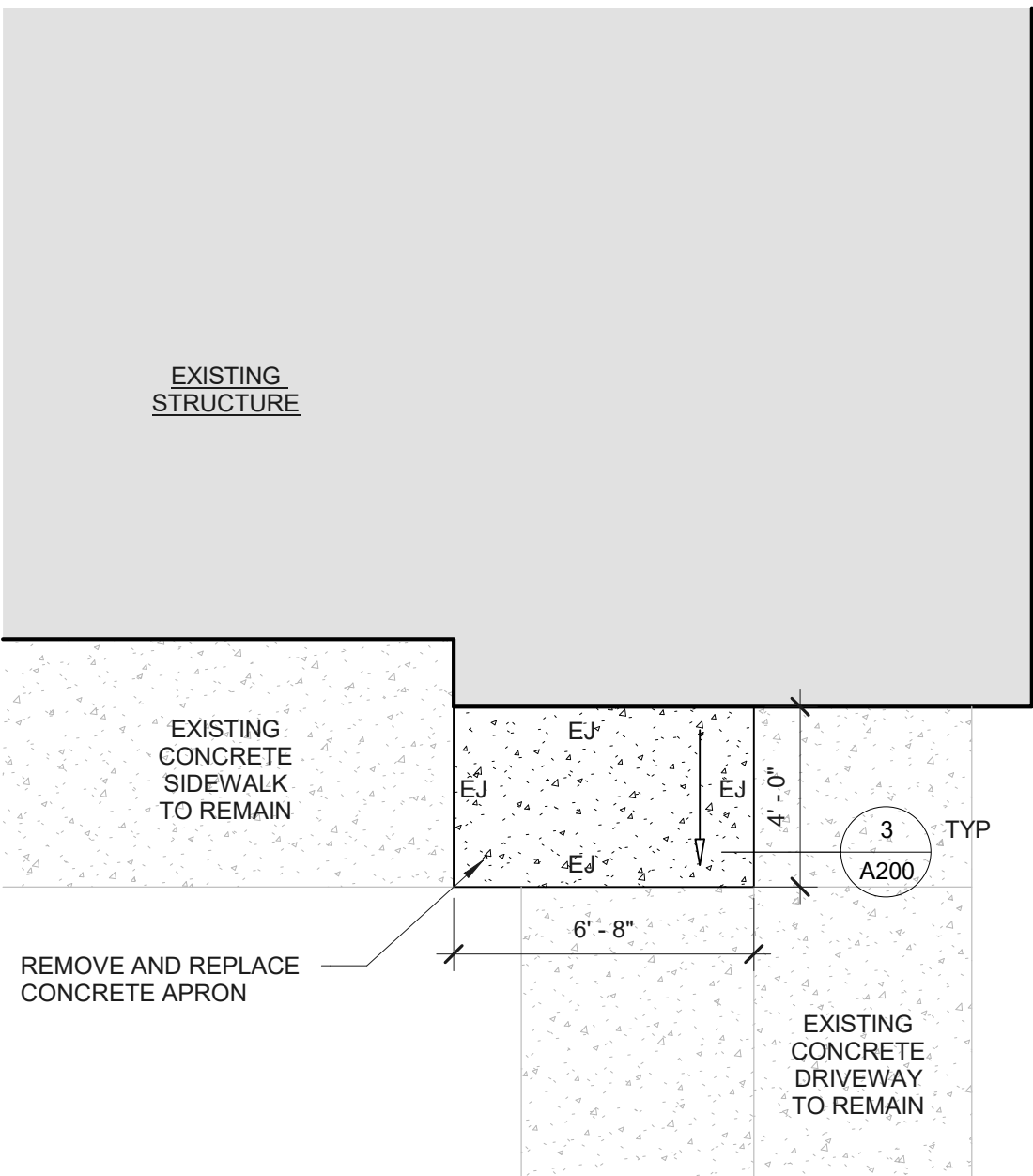
4 SITE PLAN - 712 SW 5TH STREET
A120 1/4" = 1'-0"

SIMILAR WORK AT OTHER SITES:
710 SW 5TH STREET



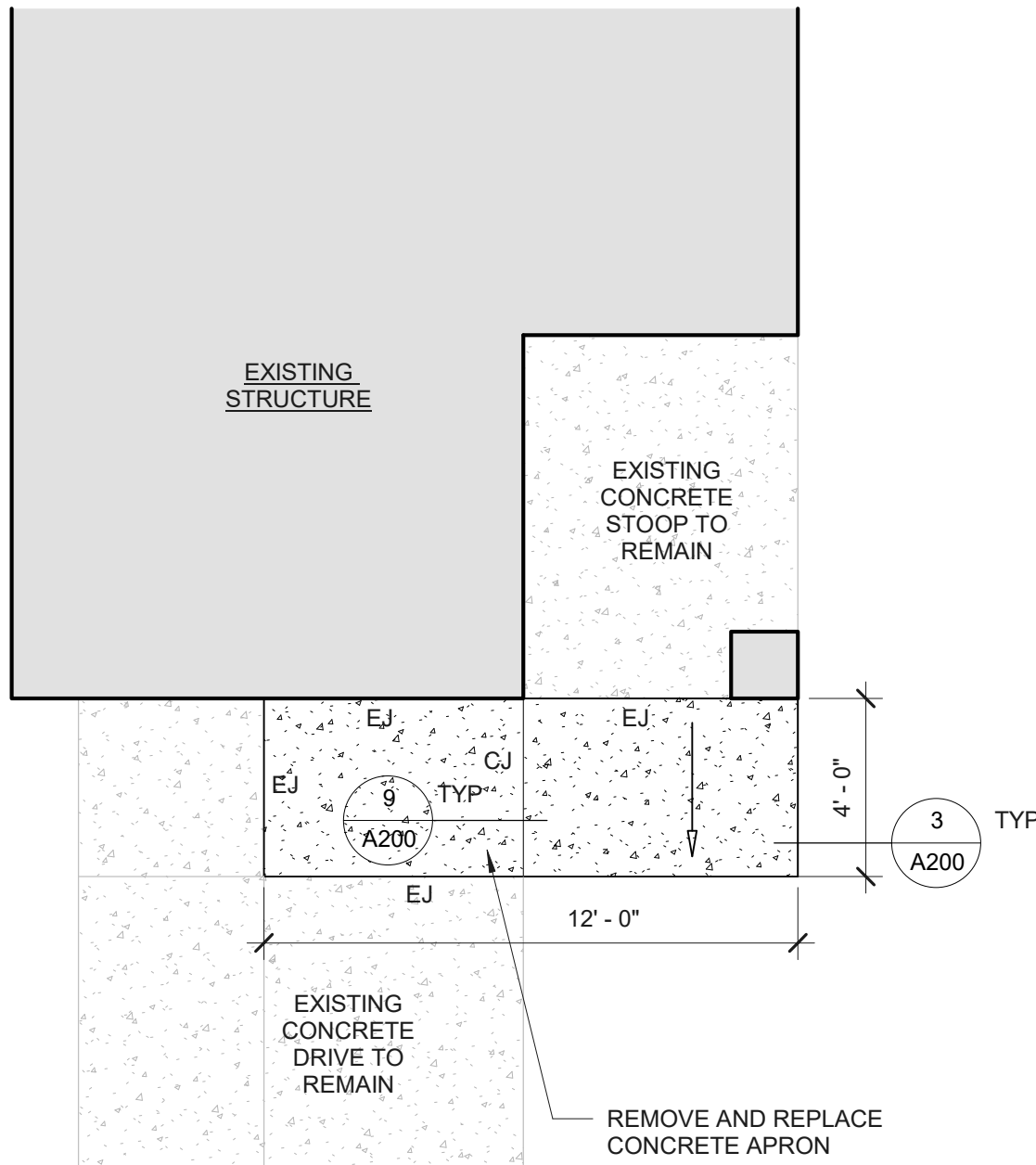
2 SITE PLAN - 1312 PINE STREET
A120 1/4" = 1'-0"

SIMILAR WORK AT OTHER SITES:
2503 PINE STREET
2505 PINE STREET (MIRRORED)
2312 PINE STREET



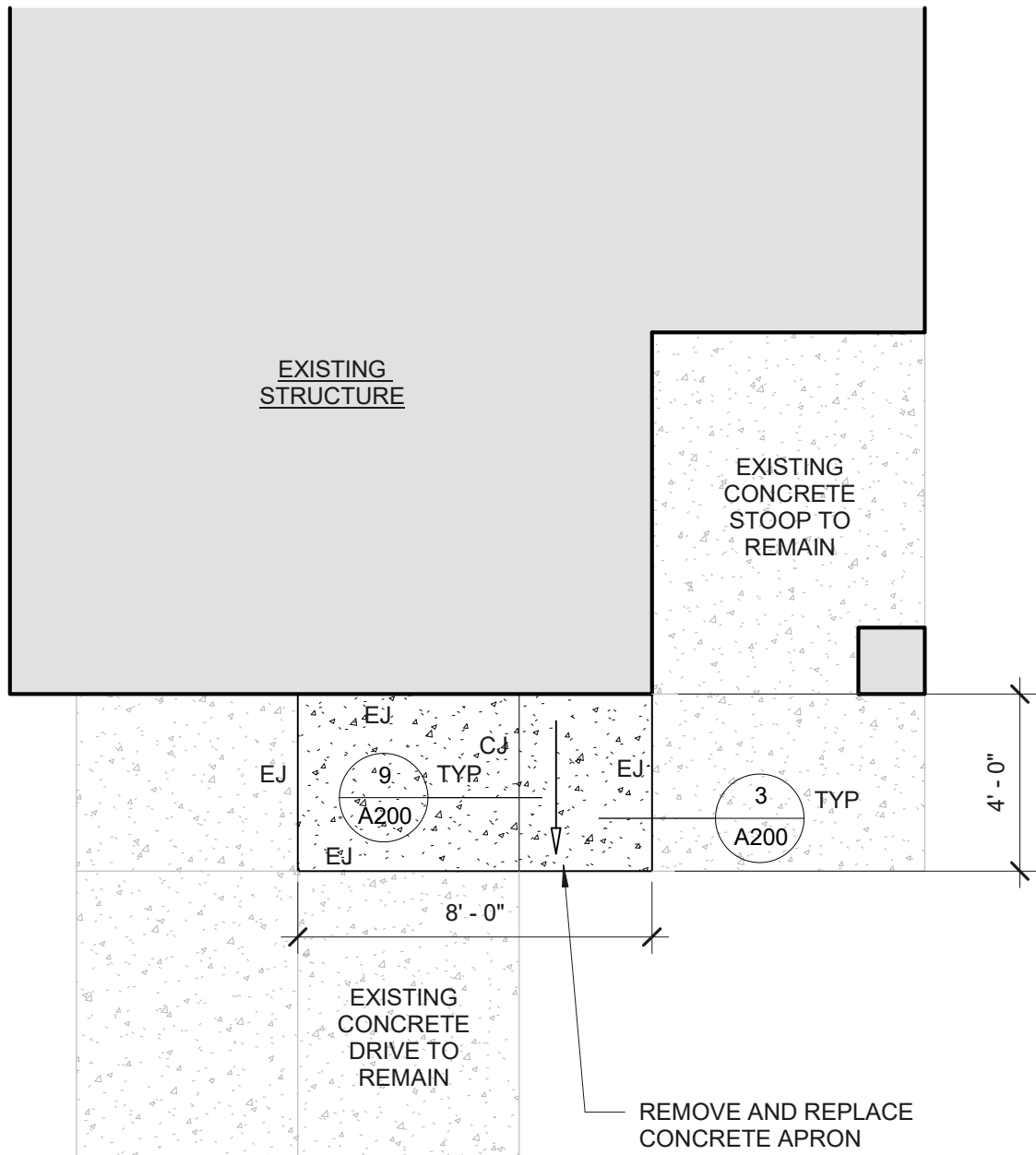
5 SITE PLAN - 701 SW 5TH STREET
A120 1/4" = 1'-0"

SIMILAR WORK AT OTHER SITES:
703 SW 5TH STREET (MIRRORED)



3 SITE PLAN - 623 SW 5TH STREET
A120 1/4" = 1'-0"

SIMILAR WORK AT OTHER SITES:
621 SW 5TH STREET (MIRRORED)



6 SITE PLAN - 707 SW 5TH STREET
A120 1/4" = 1'-0"

BRAINERD HRA

NORTH STAR APARTMENTS & ADDITIONAL SITES - 2020 FLATWORK UPGRADES

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2.25.2020

1	2.25.2020	BIDDING SET
NO.	DATE	ISSUE RECORD

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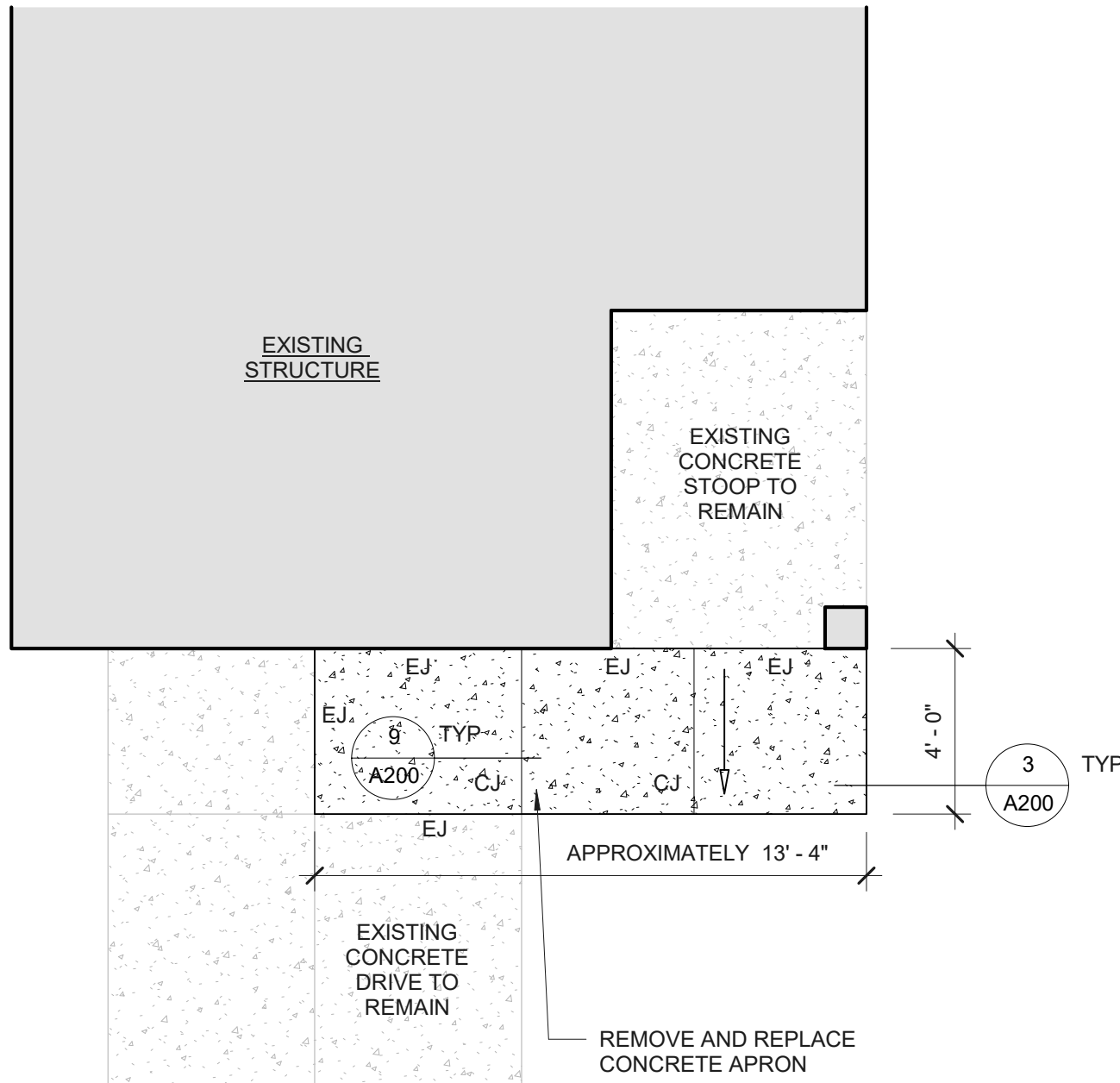
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ADDITIONAL SITES - SITE PLAN

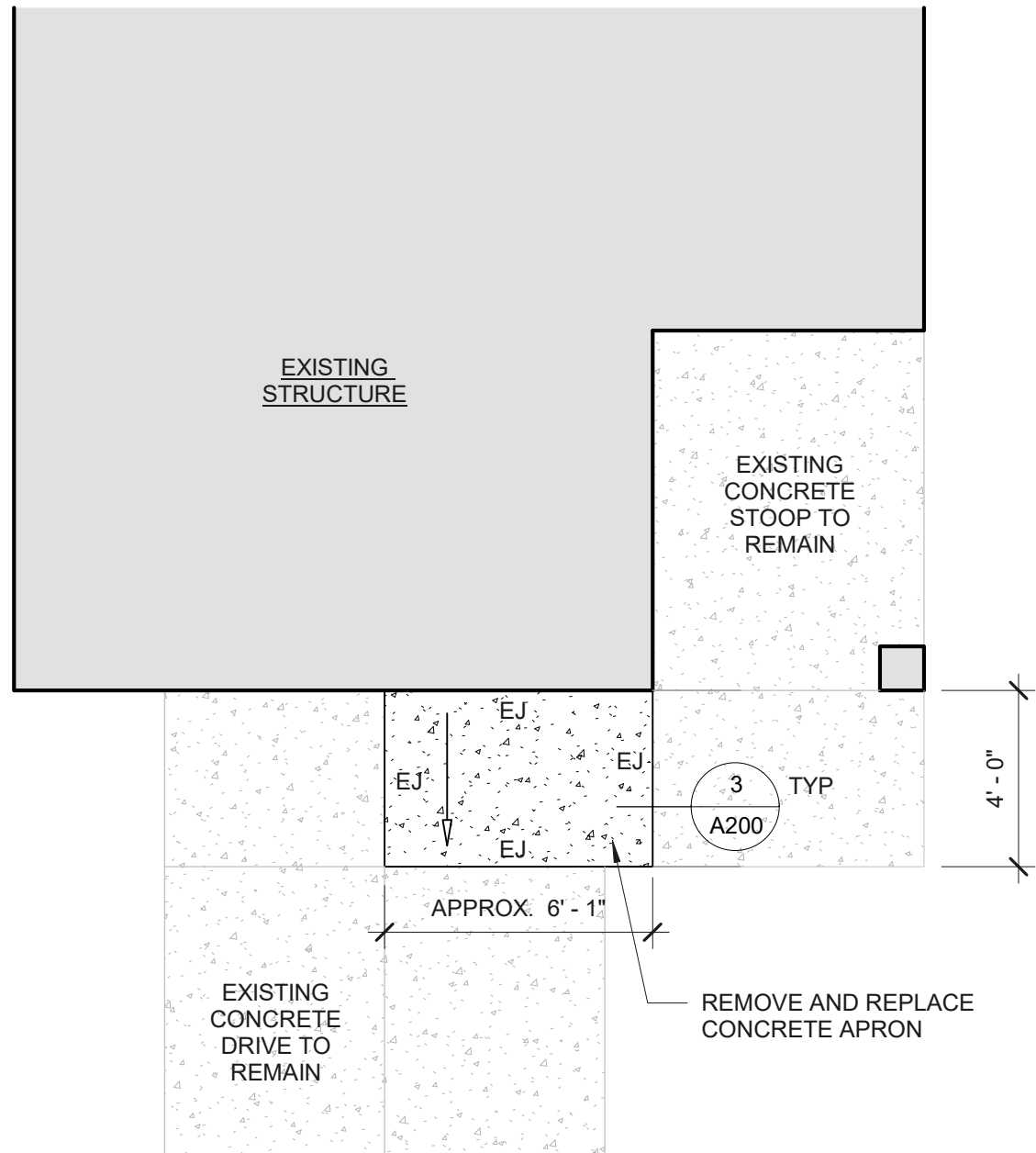
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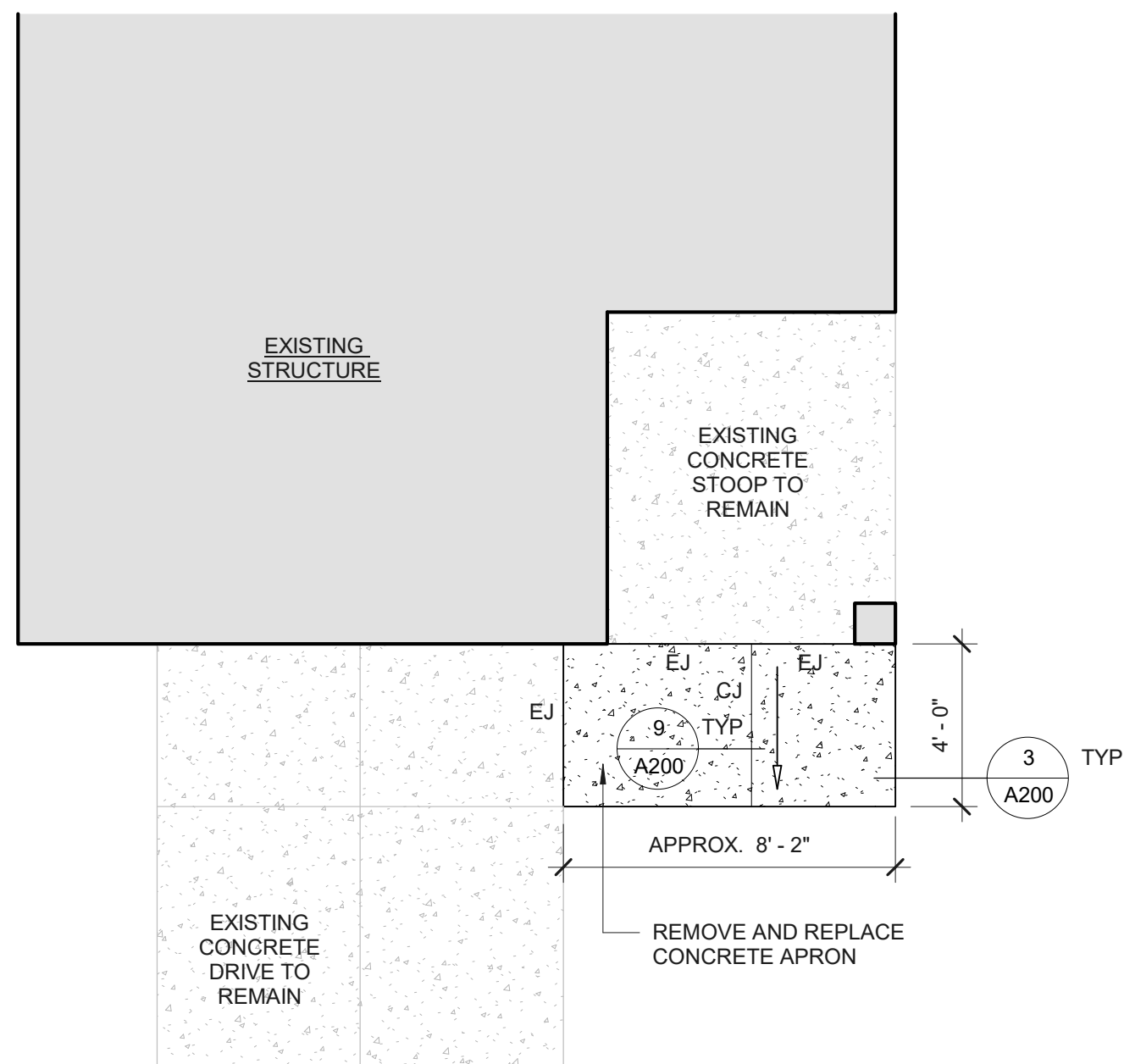
1 SITE PLAN - 717 SW 5TH STREET
1/4" = 1'-0"

SIMILAR WORK AT OTHER SITES:
711 SW 5TH STREET (MIRRORED)

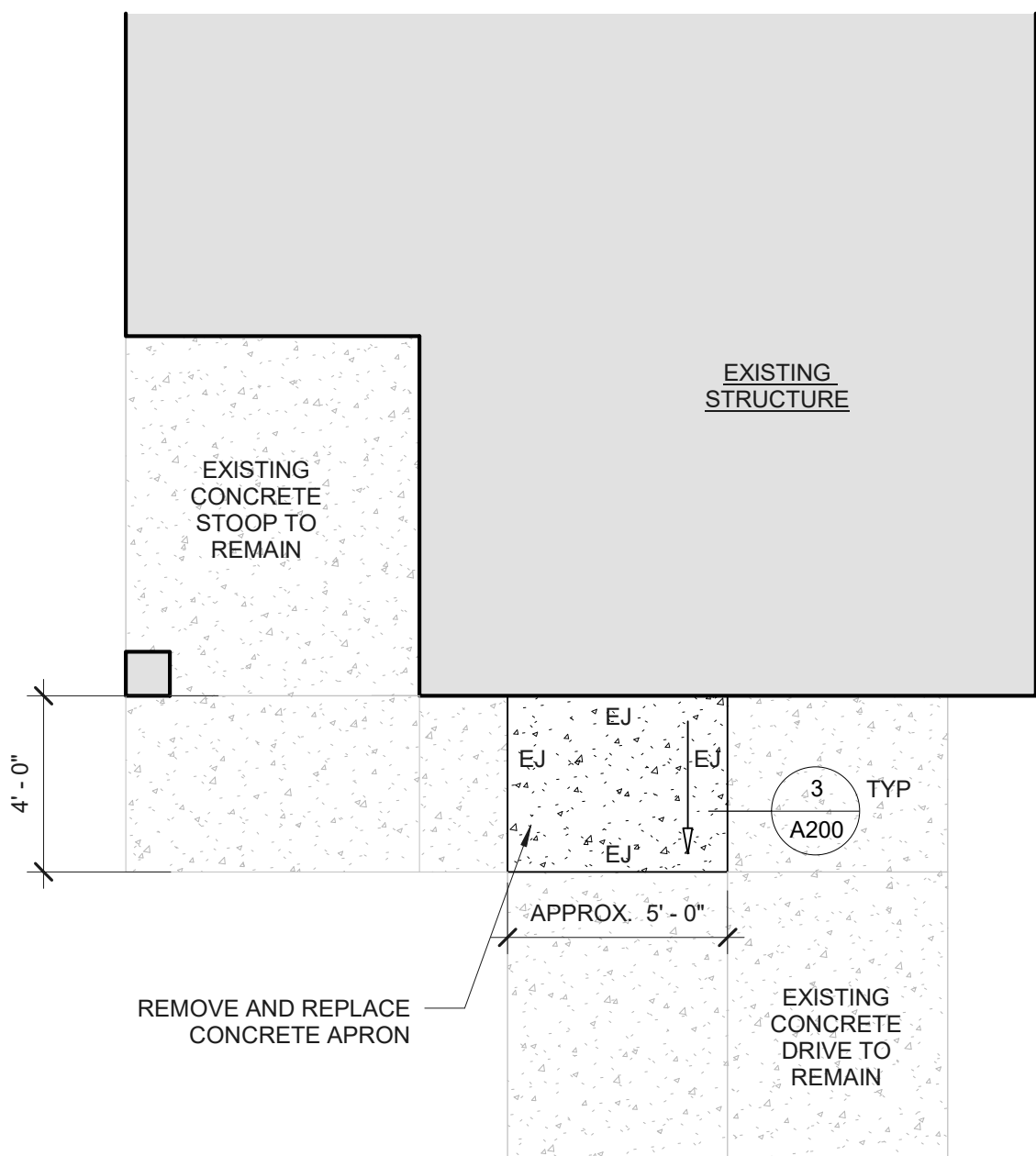


2 SITE PLAN - 709 SW 5TH STREET
1/4" = 1'-0"

SIMILAR WORK AT OTHER SITES:
715 SW 5TH STREET (MIRRORED)



3 SITE PLAN - 718 SW 5TH STREET
1/4" = 1'-0"



4 SITE PLAN - 705 SW 5TH STREET
1/4" = 1'-0"


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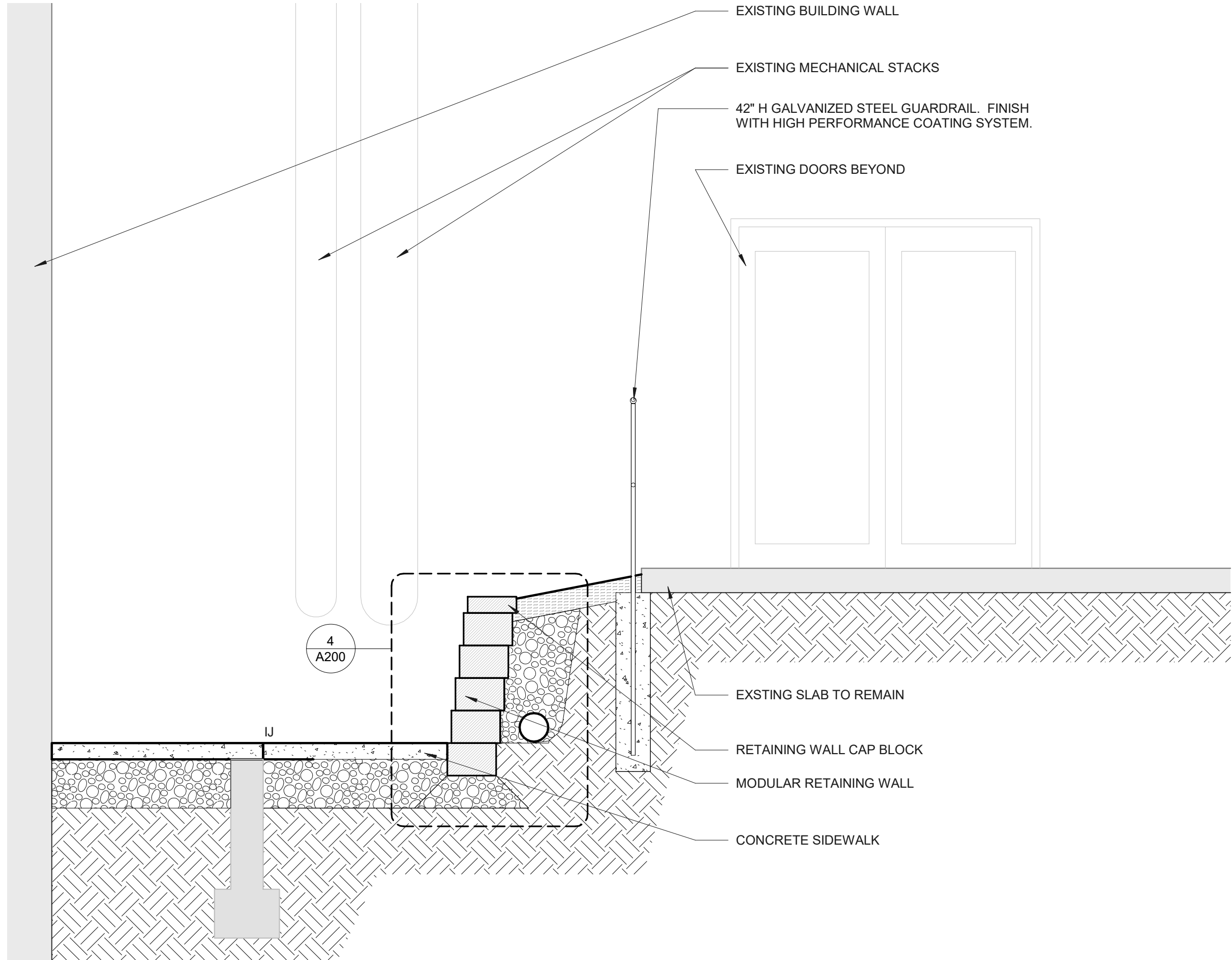
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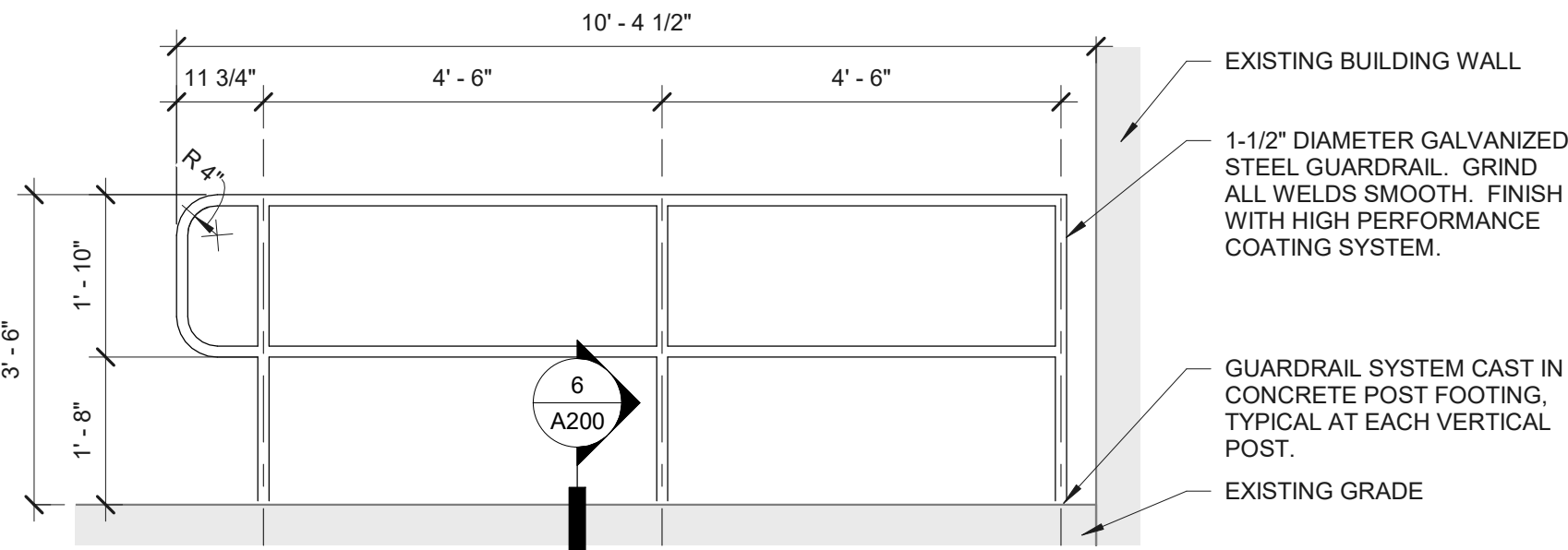
ADDITIONAL SITES - SITE PLAN

A130

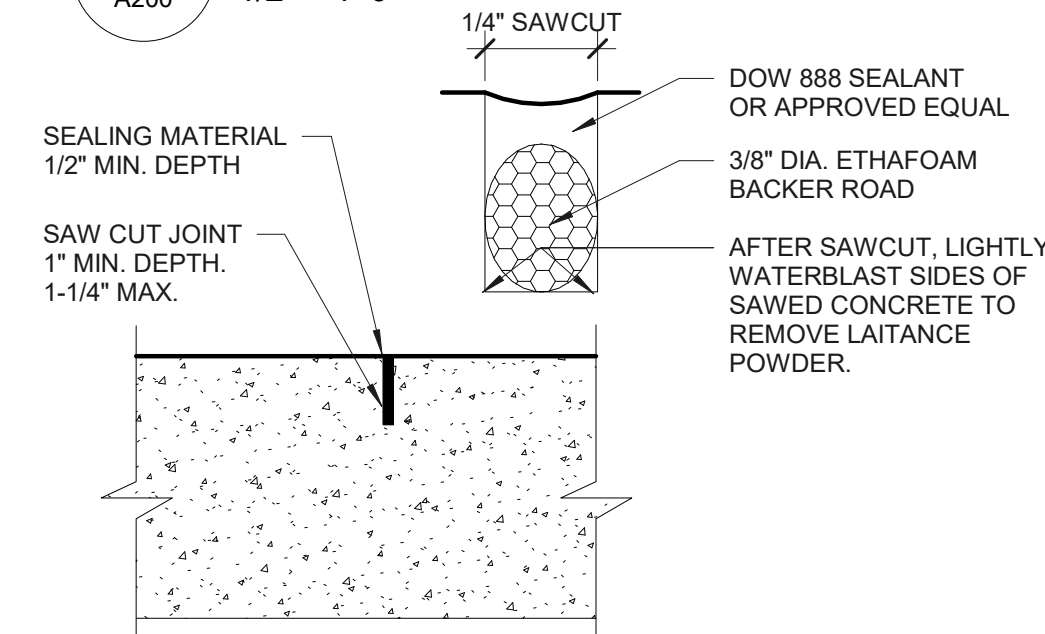
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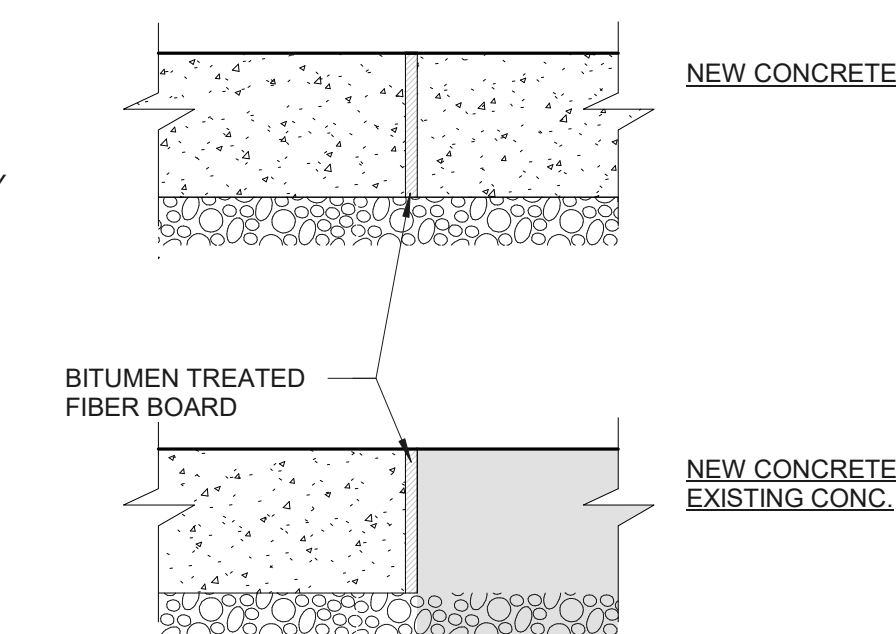
1 SECTION THROUGH RETAINING WALL
A200 1/2" = 1'-0"



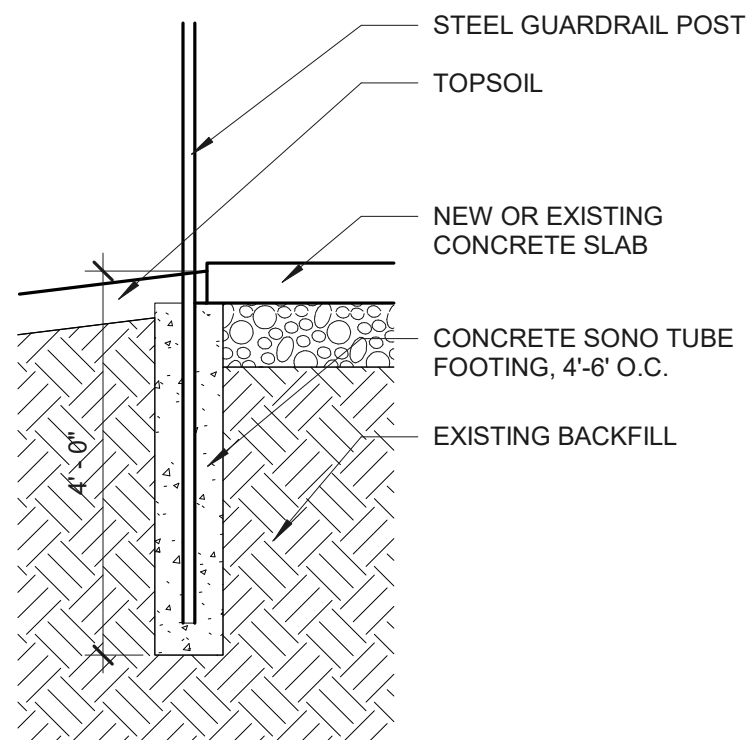
5 GUARDRAIL ELEVATION
A200 1/2" = 1'-0"



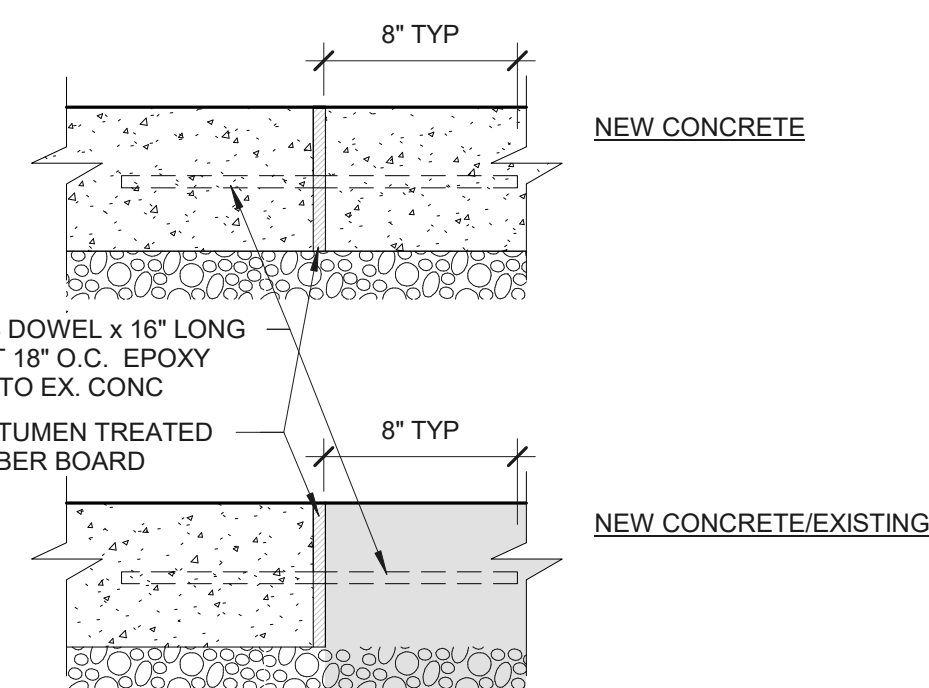
9 CONTROL JOINT (CJ) DETAIL
A200 1 1/2" = 1'-0"



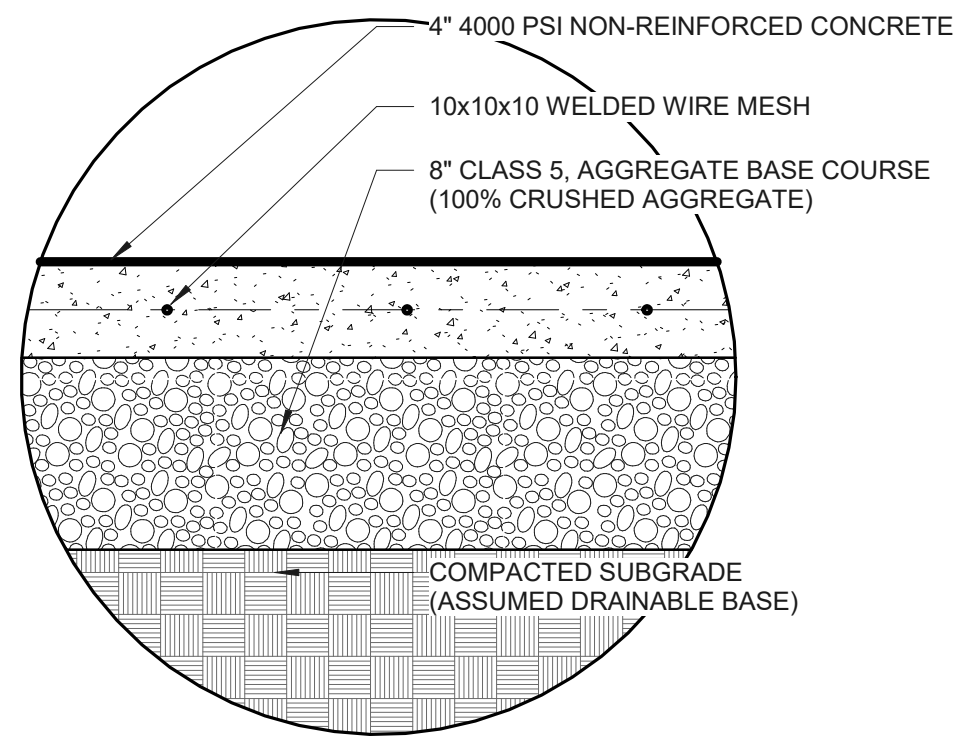
10 ISOLATION JOINT (IJ) DETAIL
A200 1 1/2" = 1'-0"



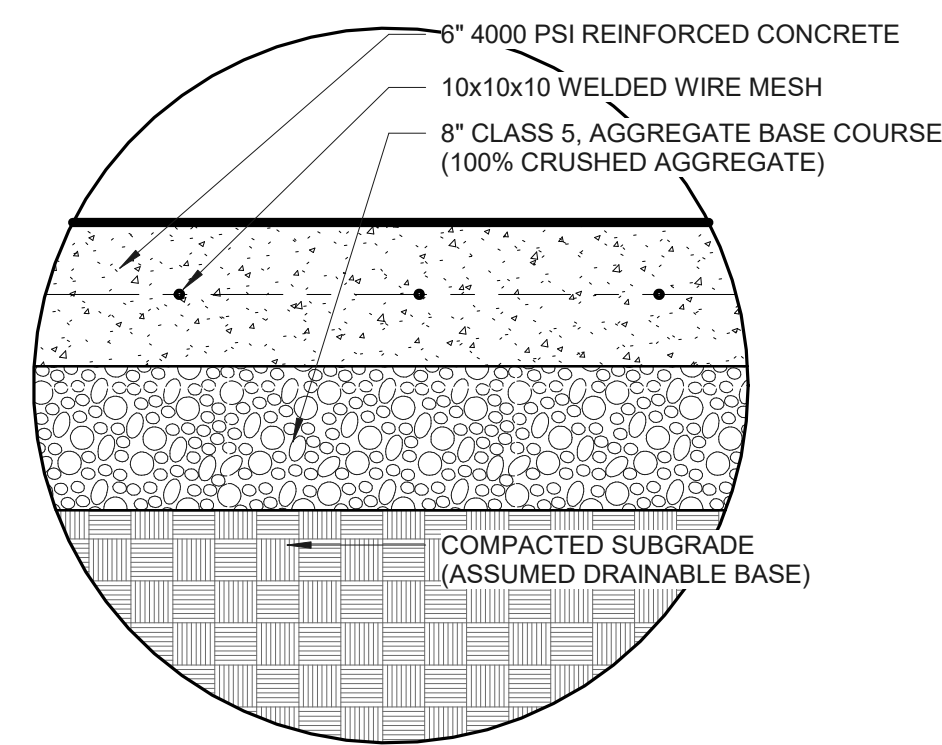
6 CONCRETE POST FOOTING DETAIL
A200 1/2" = 1'-0"



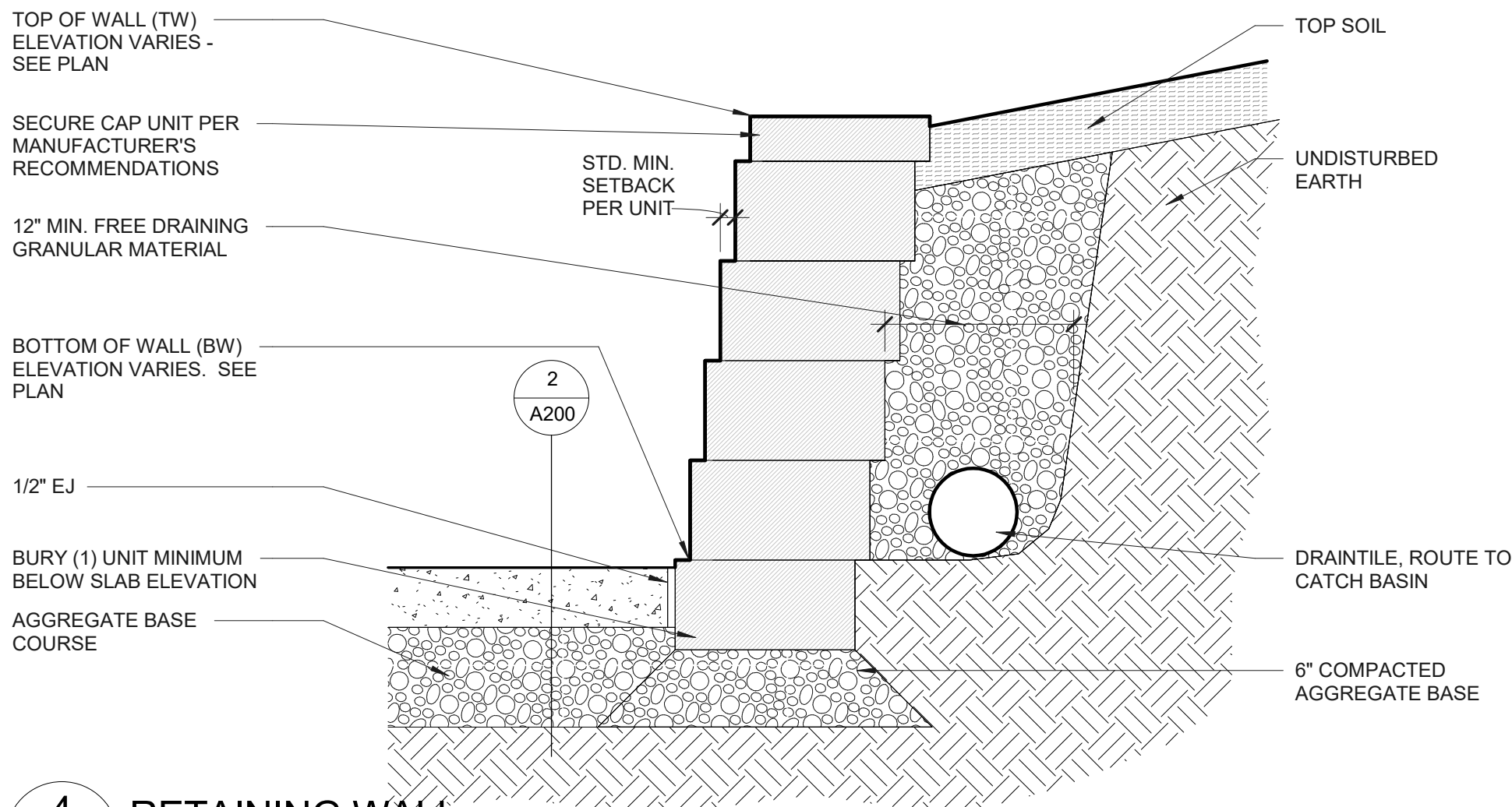
11 EXPANSION JOINT (EJ) DETAIL
A200 1 1/2" = 1'-0"



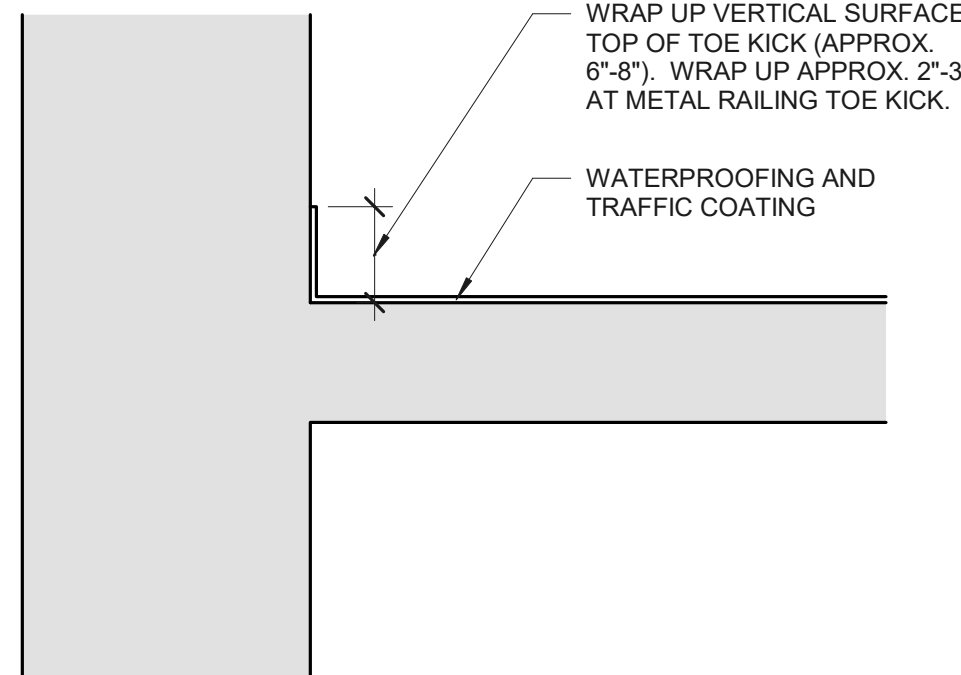
2 TYP. CONCRETE SIDEWALK SECTION
A200 1 1/2" = 1'-0"



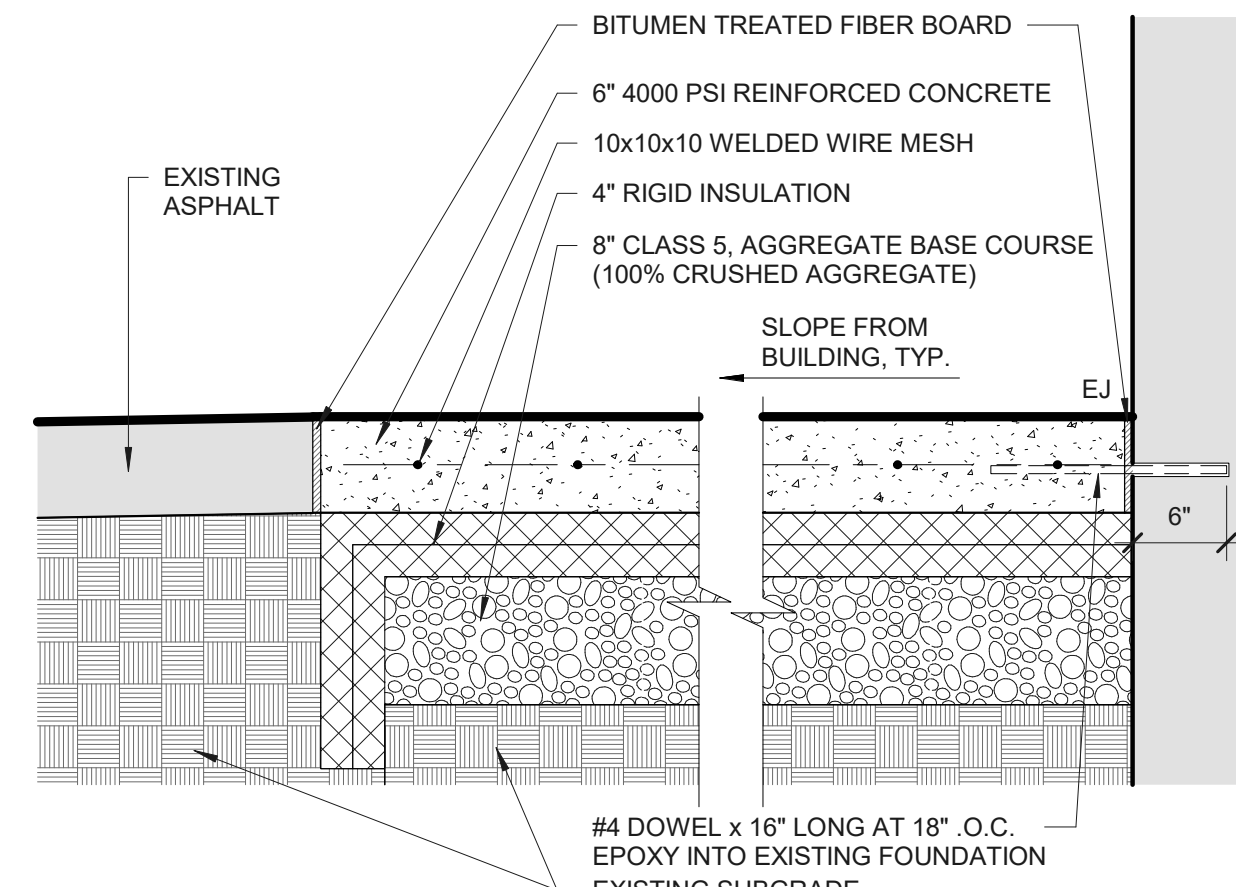
3 TYP. CONCRETE APRON SECTION
A200 1 1/2" = 1'-0"



4 RETAINING WALL
A200 1" = 1'-0"



7 COATING DETAIL
A200 1 1/2" = 1'-0"



8 CONCRETE APRON SECTION DETAIL
A200 1" = 1'-0"

BRAINERD HRA

NORTH STAR APARTMENTS & ADDITIONAL SITES - 2020 FLATWORK UPGRADES

BIDDING SET
2.25.2020

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CONSTRUCTION DETAILS

A200



1	2.25.2020	BIDDING SET
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Designer	WDS	BMO

A201