



April 27, 2023

KIRKLAND HEIGHTS REDEVELOPMENT
Owner: New Kirkland Heights LLLP

Addendum No. 1

ARCHITECT: SMR Architects

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bid Documents dated April 21, 2023 with amendments and additions noted below.

Addendum items are included in the Conformance Set drawings and are clouded and marked with an A1 delta.

Note:

- 1) As of the issuance of Addenda 1, no permits for construction have been issued by the City of Kirkland.
- 2) PSE has not issued their final construction drawings for the utility undergrounding.
- 3) Questions regarding the Bid Set or any of the subsequent addenda will not be accepted after May 12th, 2023.

Documents included in this Addenda:

- Revisions to the Kirkland Heights Redevelopment Bid Set Project Manual

CHANGES TO THE PROJECT MANUAL

Revised Sections have been noted. Text changes with replaced or revised Sections are noted: Additions are underlined. Deletions are ~~lined through~~.

REMOVE: Remove the following Sections in their entirety:

- **07 27 00 AIR BARRIERS AND WATER RESISTIVE BARRIERS**

REVISE: Revise the following Specifications:

- **00 01 10 Table of Contents_ADD 1**
- **00 00 05 Instructions to BiddersRev08Jan20 - \$250k-\$1m_ADD 1**
- **00 00 06 General Conditions Rev 08Jan20 - \$250k+_Add 1**
- **00 00 07 Bid Form & Bidder Information2018**
- **00 00 13 KH Preferred Construction Phasing**
- **01 10 00 SUMMARY_ADD 1**
- **03 01 00 MAINTENANCE OF CONCRETE_ADD 1**
- **03 20 00 CONCRETE REINFORCING_ADD 1**
- **03 30 00 CAST-IN-PLACE CONCRETE_ADD 1**
- **03 35 00 CONCRETE FINISHING_ADD 1**
- **05 51 00 METAL STAIRS_ADD 1**
- **06 17 33 WOOD I-JOISTS_ADD 1**

- 06 18 00 GLUE LAM MEMBERS_ADD 1
- 07 17 00 BENTONITE WATERPROOFING_ADD 1
- 07 26 00 UNDERSLAB VAPOR BARRIERS_ADD 1
- 01 81 13.01 KHNC_ESDS 4.0 Checklist (v1.0)_230309_ADD 1

*** End of Addendum ***

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Pages</u>
00 00 00	Project Title Page	1
00 01 05	Project Team	1
00 01 10	Table of Contents	6

VOLUME ONE: DIVISIONS 00-02

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 00 02	Invitation to Bid	2
<u>00 00 05</u>	<u>Instructions to Bidders</u>	6
<u>00 00 06</u>	<u>General Conditions</u>	<u>28</u>
<u>00 00 07</u>	<u>Bid Form & Bidder Information</u>	5
00 00 08	Sample Wage Schedule	1
00 00 09	Sample Agreements to Pay Prevailing Wage	2
00 00 10	Sample Affidavit Form	2
00 00 11	Contract Form	1
00 00 12	Insurance Sample	2
<u>00 00 13</u>	<u>KH Preferred Construction Phasing</u>	<u>4</u>

DIVISION 01 - GENERAL REQUIREMENTS

<u>01 10 00</u>	<u>Summary</u>	<u>3</u>
01 20 00	Price and Payment Procedures	3
01 21 00	Allowances	4
01 25 13	Product Substitution Procedures	2
01 25 14	Substitution Request Form	1
01 26 00	Contract Modification Procedures (Change Orders)	4
01 29 76	Progress Payment Procedures	3
01 30 00	Administrative Requirements	3
01 32 16	Construction Progress Schedule	2
01 33 00	Submittal Procedures	5
01 40 00	Quality Requirements	2
01 41 00	Regulatory Requirements	2
01 41 10	Air Barrier System	6
01 42 13	Abbreviations and Acronyms	3
01 45 23	Testing and Inspectings	4
01 50 00	Temporary Facilities and Controls	8
01 56 39	Temporary Tree and Vegetation Protection	6
01 60 00	Product Requirements	2
01 70 00	Execution and Closeout Requirements	6
01 73 29	Cutting and Patching	4
01 74 19	Construction Waste Management and Disposal	7
01 78 23	Operation and Maintenance Data	8
01 78 39	Project Record Documents	4
01 79 00	Demonstration and Training	5

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Pages</u>
01 81 15	Evergreen Sustainable Development Standard	8
	<u>Document Attachments: 01 81 13.01 KH ES DS 4.0 Checklist (v1.0)</u>	3
01 81 19	Indoor Air Quality (IAQ) Requirements	8
01 91 00	Commissioning	8
<u>DIVISION 02 - EXISTING CONDITIONS</u>		
02 24 00	Hazardous Materials Disclaimer	1
	Hazardous Materials Reports	
	<i>Documents by Reference :</i>	
	Phase I Environmental Site Assessment dated November 2018	
	<i>See Volume 3: Appendices</i>	277
02 32 00	Geotechnical Investigations	
	<i>Documents Attachment :</i>	
	Geotechnical Memorandum date March 1, 2022	12
	Geotechnical Memorandum date November 23, 2022	26
02 41 13	Selective Site Demolition	4
02 41 16	Structure Demolition	4
	Regulated Tree Inventory Report	16
	Traffic Impact Analysis	
	<i>See Volume 4: Appendices</i>	140

VOLUME TWO: DIVISIONS 03, 05-12**DIVISION 03 - CONCRETE**

<u>03 01 00</u>	<u>Maintenance of Concrete</u>	<u>4</u>
03 10 00	Concrete Forming and Accessories	9
<u>03 20 00</u>	<u>Concrete Reinforcing</u>	<u>4</u>
<u>03 30 00</u>	<u>Cast-In-Place Concrete</u>	<u>12</u>
<u>03 35 00</u>	<u>Concrete Finishing</u>	<u>5</u>
03 54 13	Gypsum Cast Underlayment	4

DIVISION 05 - METALS

05 05 23	Welding	3
05 12 00	Structural Steel Framing	6
05 50 00	Metal Fabrications	4
<u>05 51 00</u>	<u>Metal Stairs</u>	<u>6</u>
05 52 13	Handrails	2

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

06 10 00	Rough Carpentry	6
06 16 00	Sheathing	12
<u>06 17 33</u>	<u>Wood I-Joists</u>	<u>4</u>
06 17 53	Shop-Fabricated Trusses	8
<u>06 18 00</u>	<u>Glue Lam Members</u>	<u>3</u>
06 20 00	Finish Carpentry	6

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Pages</u>
06 30 00	Wood Treatment	3
06 61 16	Quartz Countertops	6
06 82 00	Architectural Fiberglass Railings	4
<u>DIVISION 07 - THERMAL AND MOISTURE PROTECTION</u>		
07 11 00	Dampproofing	3
<u>07 17 00</u>	<u>Bentonite Waterproofing</u>	<u>10</u>
07 21 13	Board Insulation	4
07 21 16	Blanket Insulation	3
<u>07 26 00</u>	<u>Underslab Vapor Barriers</u>	<u>4</u>
<u>07 27 00</u>	<u>Weather Resistive Barriers</u>	<u>4</u>
07 27 00	AIR BARRIERS AND WATER RESISTIVE BARRIERS	6
07 27 26	Aerosol-Applied Sealant	4
07 45 00	Rainscreen System	5
07 46 00	Fiber Cement Siding	4
07 54 23	Single Ply Roofing Membrane	13
07 62 00	Sheet Metal Flashing and Trim	5
07 65 00	Flexible Flashings	5
07 65 26	Self-Adhering Sheet Flashings	6
07 71 23	Manufactured Gutters and Downspouts	4
07 84 00	Firestopping	4
07 90 00	Joint Protection	6
<u>DIVISION 08 - OPENINGS</u>		
08 11 13	Hollow Metal Doors and Frames	8
08 14 16	Flush Wood Doors	5
08 16 00	Molded Composite Doors	3
08 16 13	Fiberglass Doors	4
08 31 13	Access Doors and Frames	3
08 36 13	Sectional Doors	5
08 53 00	Plastic (PVC) Windows & Sliding Glass Door (incl. window testing)	9
08 71 00	Door Hardware	13
08 80 00	Glazing	7
<u>DIVISION 09 - FINISHES</u>		
09 21 16	Gypsum Board Assemblies	6
09 65 00	Resilient Flooring	5
09 68 16	Sheet Carpeting	4
09 90 00	Painting and Coating	9
09 96 53	Elastomeric Coverings	6
<u>DIVISION 10 - SPECIALTIES</u>		
10 14 00	Signage	3
10 28 00	Toilet and Bath Accessories	4
10 44 00	Fire Protection Specialties	3

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Pages</u>
10 55 13	Postal Specialties	3
10 57 23	Closet and Utility Shelving	3
10 60 00	Interior and Exterior Specialties	3
	Interior: Closet Shelving, Tub Surrounds	
	Exterior: Deck Coating	

DIVISION 11 - EQUIPMENT

11 31 00	Residential Appliances	4
11 68 16	Play Equipment	3
11 81 29	Facility Fall Protection	4

DIVISION 12 - FURNISHINGS

12 20 00	Window Treatments	3
12 35 30	Casework	5
12 36 61.16	Solid Surfacing Countertops	4
12 93 13	Bicycle Racks	3

VOLUME THREE: DIVISIONS 21-28, 31-33**DIVISION 21 - FIRE SUPPRESSION**

21 00 00	Fire Suppression General Conditions	9
21 05 00	Common Work Results for Fire Suppression	11
21 13 13	Wet-Pipe Sprinkler Systems	4
21 00 00	Fire Suppression General Conditions - Community Building	9
21 05 00	Common Work Results for Fire Suppression - Community Building	11
21 13 13	Wet-Pipe Sprinkler Systems - Community Building	3

DIVISION 22 - PLUMBING

22 00 00	Plumbing General Conditions	13
22 05 00	Common Work Results for Plumbing	18
22 07 00	Plumbing Insulation	5
22 11 00	Facility Water Distribution	11
22 11 16	PEX Domestic Water Piping	6
22 13 00	Facility Sanitary Sewerage	8
22 30 00	Plumbing Equipment	4
22 36 00	Domestic Hot Water Heat Pump Equipment	5
22 40 00	Plumbing Fixtures	7
22 00 00	Plumbing General Conditions - Community Building	13
22 05 00	Common Work Results for Plumbing - Community Building	18
22 07 00	Plumbing Insulation - Community Building	5
22 11 00	Facility Water Distribution - Community Building	11
22 11 16	PEX Domestic Water Piping - Community Building	6
22 13 00	Facility Sanitary Sewerage - Community Building	7
22 30 00	Plumbing Equipment - Community Building	4
22 36 00	Domestic Hot Water Heat Pump Equipment - Community Building	4

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Pages</u>
22 40 00	Plumbing Fixtures - Community Building	6
<u>DIVISION 23 - HEATING, VENTING AND AIR-CONDITIONING</u>		
23 00 00	HVAC General Conditions	12
23 05 00	Common Work Results for HVAC	9
23 05 93	Testing, Adjusting and Balancing	5
23 07 00	HVAC Insulation	4
23 31 00	HVAC Ducts and Casings	6
23 37 00	Air Outlets and Inlets	4
23 72 00	Energy Recovery Units	3
23 00 00	HVAC General Conditions - Community Building	13
23 05 00	Common Work Results for HVAC - Community Building	17
23 05 93	Testing, Adjusting and Balancing - Community Building	7
23 07 00	HVAC Insulation - Community Building	8
23 09 00	Instrumentation and Control for HVAC - Community Building	8
23 23 00	Refrigerant Piping - Community Building	8
23 31 00	HVAC Duct and Casings - Community Building	7
23 33 00	Air Duct Accessories - Community Building	5
23 37 00	Air Outlets and Inlets - Community Building	6
23 40 00	HVAC Filters - Community Building	2
23 72 00	Energy Recovery Units - Community Building	3
23 81 43	Air-Cooled, Variable Refrigerant Flow, Multi-Unit Heat Pump - Community Building	15
23 83 23	Electric Terminal Heating Units - Community Building	2
<u>DIVISION 26 - ELECTRICAL</u>		
26 00 00	Electrical General Conditions	20
26 05 00	Common Work Results for Electrical	11
26 05 19	Low-Voltage Electrical Power Conductors and Cables	9
26 05 26	Grounding and Bonding for Electrical Systems	8
26 05 33	Raceways and Boxes for Electrical Systems	20
26 05 53	Identification for Electrical Systems	12
26 05 90	Electrical Requirements for A/V	8
26 09 23	Lighting Control Devices	7
26 24 13	Panelboards, Switchboards and Termination Cabinet	17
26 27 13	Electricity Metering	4
26 27 26	Wiring Devices	11
26 28 13	Fuses and Enclosed Switches and Circuit Breakers	8
26 43 13	Surge Protection for Low-Voltage Electrical Power Circuits	4
26 51 19	Interior and Exterior Lighting	10
26 83 23	Electric Unit Heaters	3
<u>DIVISION 27 - COMMUNICATIONS</u>		
27 00 00	Low Voltage System General Conditions	20
27 41 00	Basic Means and Methods for A/V	28

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Pages</u>
27 41 10	A/V Systems	8
<u>DIVISION 28 - ELECTRONIC SAFETY AND SECURITY</u>		
28 46 00	Fire Alarm General Conditions	22
<u>DIVISION 31 - EARTHWORK</u>		
31 10 00	Site Preparation	5
31 20 00	Earthwork	9
<u>DIVISION 32 - EXTERIOR IMPROVEMENTS</u>		
32 12 00	Asphalt Pavement	4
32 14 00	Cement Concrete Pavement	3
32 16 00	Curbs and Sidewalks	3
32 17 00	Pavement Markings	4
32 18 16	Playground Grass Resilient Surfacing	4
32 18 16.13	Playground Safety Underlayment	3
32 31 13	Chain Link Fence	2
32 33 00	Site Furnishings	5
32 84 00	Irrigation	14
32 91 13	Soil Preparation	7
32 93 00	Planting	6
<u>DIVISION 33 - UTILITIES</u>		
33 10 00	Water Distribution	4
33 30 00	Sanitary Sewer	3
33 40 00	Storm Drainage	4
VOLUME FOUR: APPENDIX A		
	Hazardous Materials Reports	
	<i>Documents by Reference :</i>	
	Phase I Environmental Site Assessment dated November 2018	277
VOLUME FIVE: APPENDIX B		
	Traffic Impact Analysis	140

END OF TABLE OF CONTENTS

INSTRUCTIONS TO BIDDERS

1.0 BIDDER RESPONSIBILITY CRITERIA

- A. It is the intent of Owner to award a contract to a responsible bidder submitting the lowest responsive bid. Before award, the bidder must meet the following bidder responsibility criteria to be considered a responsible bidder. The bidder may be required by the Owner to submit documentation demonstrating compliance with the criteria. The bidder must:
1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of bid submittal;
 2. Have a current Washington Unified Business Identifier (UBI) number;
 3. If applicable:
 - a. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
 - b. Have a Washington Employment Security Department number, as required in Title 50 RCW;
 - c. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;

1.1 SUBCONTRACTOR RESPONSIBILITY

- A. The Contractor shall include the language of this section in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this section apply to all subcontractors regardless of tier.
- B. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:
1. Have a current certificate of registration in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
 2. Have a current Washington Unified Business Identifier (UBI) number;
 3. If applicable, have:
 - a. Have Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;
 - b. A Washington Employment Security Department number, as required in Title 50 RCW;
 - c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
 - d. An electrical contractor license, if required by Chapter 19.28 RCW;
 - e. An elevator contractor license, if required by Chapter 70.87 RCW.

1.2 SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA

- A. For the work in this project a responsible/qualified Bidder must meet the following standards:

INSTRUCTIONS TO BIDDERS

1. Have a current certificate of registration as a contractor, in compliance with chapter 18.27 RCW, for the last three years under the same business name;
2. Have a good record of past performance that includes, but is not limited to, high quality work, ability to complete projects on time, contractor's integrity, compliance with public policy, financial, contractual and tax obligations, as well as Federal and State rules and regulations in performing construction contracts.
3. Have a current Experience Modification Rate (EMR) of 1.0 or less, or an average EMR rate of 1.0 or less over the last three years. The requirement may, at the Owner's sole discretion, be waived on review of a written explanation that includes details of accidents, L&I records, a Loss Ratio Report for the last five years, costs, dates of events, and changes that have been made by the contractor to reduce accidents. A current company Safety Plan shall also be reviewed.
4. Bidder shall provide evidence of previous successful completion of new construction and gut-rehabilitation projects, of similar scope and complexity for a minimum of five years. Poor performance, lack of response, or failure to complete projects successfully within the contract time may be grounds for the rejection of bidder.

- B. Subcontractors shall have had three years minimum experience licensed in Washington State in the specific specialty contracting business.

1.3 PREPARATION OF BIDS – CONSTRUCTION

- A. Bids must be submitted on the Bid Form furnished by the Owner.
- B. All fields and questions on required forms must be fully answered and complete. Failure to do so may result in the bid being declared non-responsive.
- C. Bidders shall acknowledge receipt of all addenda to this solicitation by inserting the addenda numbers in the space provided on the Bid Form. Failure to do so may result in the bid being declared non-responsive.
1. Bidder is responsible for ensuring that all addenda have been reviewed and included in their bid.
- D. In order for a bid to be considered responsive, bidders must submit the following signed documents with their bid package:
1. Bid Form
 2. Bidder's Information Form
 3. Bid Guarantee
- E. The Bidder agrees to hold the base bid prices for sixty (60) days from date of bid opening.
- F. Bidders shall acknowledge receipt and review of the Kirkland Heights Preferred Construction Phasing document. Failure to do so may result in the bid being declared non-responsive.

1.4 BID GUARANTEE

- A. A bid guarantee in the amount of 5% of the base bid amount is required. Failure of the Bidder to provide bid guarantee shall render the bid non-responsive.

INSTRUCTIONS TO BIDDERS

- B. Acceptable forms of bid guarantee are: A bid bond or postal money order, or certified check or cashier's check made payable to New Kirkland Heights LLLP.
- C. The Owner will return bid guarantees (other than bid bonds) to unsuccessful bidders as soon as practicable, but not sooner than the execution of a contract with the successful bidder. The successful bidder's bid guarantee will be returned to the successful bidder with its official notice to proceed with the work of the contract.

1.5 AMENDMENTS TO INVITATION TO BID

- A. If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

1.6 PRE-BID MEETING

- A. All potential bidders are required to attend at least one pre-bid meeting. Oral statements may not be relied upon and will not be binding or legally effective.

1.7 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE

- A. Before submitting a bid, the Bidder shall carefully examine each component of the Contract Documents prepared for the Work and any other available supporting data so as to be thoroughly familiar with all the requirements.
- B. The Bidder shall obtain copies of all agencies and associations guidelines and standards cited in the Contract Documents and necessary to perform the Work, including full size reproductions of material provided by Owner, at their own expense.
- C. The Bidder shall make a thorough and reasonable examination of the project site, facility and conditions under which the Work is to be performed, including but not limited to: Building access; resident occupancy; fire lanes; landscaping; obstacles and character of materials which may be encountered; traffic conditions; public and private utilities; the availability and cost of labor; and available facilities for transportation, handling, and storage of materials and equipment.

1.8 EXPLANATION TO PROSPECTIVE BIDDERS

- A. Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must submit a request in writing to the Owner seven (7) calendar days before the bid due date. Oral explanations or instructions given before the award of a contract will not be binding. Questions shall be submitted to:

Nate Kraus
New Kirkland Heights LLLP
600 Andover Park West
Seattle, WA 98188
Email: nathank@kcha.org

1.9 WAGE RATES

INSTRUCTIONS TO BIDDERS

- A. Prevailing Wage Rates are included in the Bid Documents. Contractor shall pay no less than the rates indicated to all workers, laborers, or mechanics employed in the performance of any part of the Work.
 - 1. Residential rates may be used where available.
 - 2. The Contractor shall submit an Agreement to Pay Prevailing Wages to the Owner prior to start of Work.

1.10 TAXES

- A. All taxes imposed by law shall be included in the bid amount. The Contractor shall pay the WSST to the Department of Revenue and shall furnish proof of payment to the Owner if requested.
- B. Washington State retail sales tax shall be included in the contract price.

1.11 ASSURANCE OF COMPLETION

- A. Payment and performance bonds for 100% of the Contract Sum, including all Change Orders and taxes imposed by law, shall be furnished for the Work, and shall be in a form acceptable to the Owner.

1.12 BID ERROR

- A. In the event Bidder discovers an error in its bid, the Bidder may, under certain conditions and if before the date and time that bids are due, modify, their bid, as detailed below:
 - 1. Prior to Date and Time Bids are Due:
 - a. A Bidder may withdraw its bid at any time prior to the date and time bids are due upon written request.
 - b. After withdrawing an original submitted bid, a Bidder may modify and resubmit its bid at any time prior to the date and time bids are due.
 - 2. After the Date and Time Bids are Due:
 - a. A bidder who submits an erroneous low bid may withdraw the bid. The bid withdrawal is permissible if there was an obvious error in the low bid, and the mistake is readily apparent from the bid itself.
 - b. Notification: Provide to the Owner, within 24 hours of bid opening, written notification of the bidder's intent to withdraw the bid due to error.
 - c. Documentation: Provide to the Owner within 48 hours of bid opening, documentation sufficient in content to justify bid withdrawal to the satisfaction of the Owner. Include description and evidence of the error.
 - d. Approval: the Owner will approve or reject the request for withdrawal in writing.
 - e. Any low bidder who withdraws its bid is prohibited from bidding on the same project if it is subsequently re-solicited.

1.13 ADDITIVE OR DEDUCTIVE BID ITEMS

INSTRUCTIONS TO BIDDERS

- A. The low bid, for purposes of award, shall be the lowest responsive bid from a qualified responsible bidder offering the low aggregate amount for the base bid, plus additive or deductive bid alternates selected by the Owner.

1.14 BID EVALUATION

- A. Responsive Bids: A bid will be considered responsive if it meets the conditions of the solicitation, in addition to but not limited to the following requirements:
 - 1. Bid is received not later than the time and date specified.
 - 2. Bid is submitted in the proper format on the form(s) provided.
 - 3. Bid includes the complete scope of work as defined in bid package.
 - 4. Bid does not include any exclusions or qualifications.
 - 5. Bid includes Unit and Lump Sum Costs as listed in Proposal Form.
 - 6. Forms are complete.
- B. After bid opening, bids will be checked for correctness of bid item prices, extensions and the total bid price. Discrepancies shall be resolved by accepting the bid item prices and the corrected extensions and total bid price.
- C. Responsible Bidders: the Owner will award contracts only to responsible bidders who demonstrate the ability to successfully perform under the terms and conditions as set forth in the Contract Documents and have successfully completed apartment renovation projects similar in scope and complexity.
 - 1. Bidders must demonstrate relevant experience on similar types of projects and submit detailed information as required on the Bidder Information Form.
- D. The Owner reserves the right to contact references and investigate past performance and qualifications of the Bidder, subcontractor, and project team members, including contacting third parties and/or the references provided by the Bidder.
 - 1. The Owner may contact references for other projects including those the Bidder did not identify and/or provided references.
 - 2. References may be asked to rate the performance of and describe their experience with project team members and subcontractors. Bidder Information may be solicited and evaluated on the following subjects: type and features of work; overall quality of project performance and quality of work; experience and technical knowledge and competence of the Bidder and Project Team Members; ability, capacity and skill to perform the Work; ability to manage submittals, requests for information, prevailing wage filings, and other paperwork; compliance with laws, ordinances, and contract provisions; and other information as deemed necessary.
 - 3. Poor reference(s) may be justification to determine a Bidder is not responsible.
- E. At the Owner's request, provide any additional explanation or information, which would assist in evaluating the qualifications of the Bidder, subcontractors, project team members, and bid price.
- F. The Owner will verify information submitted and if the lowest bidder is determined to be "not responsible," the Owner will issue, in writing, the specific reasons for this determination. The bidder may appeal this decision. The appeal must be in writing and shall be delivered to the Owner within two business days. The appeal may include additional information that was not included

INSTRUCTIONS TO BIDDERS

in the original bid documents. New Kirkland Heights LLLP will make a final determination after the receipt of the appeal. The final determination may not be appealed.

1.15 CONTRACT AWARD

- A. Bonding and Insurance: Contract award will be contingent on ability to secure payment/performance bonding, and Contractor's ability to meet the Owner insurance requirements as detailed in the Bid Documents.
- B. Must, for the duration of the contract, procure and maintain Builders Risk insurance. This shall be in addition to General Liability, Automobile Liability, and Professional Liability/Errors and Omissions (if applicable) Coverage.
- C. Bonding, insurance and Agreement to Pay Prevailing Wage Rates shall be submitted to the Owner within 10 days of contract award.
- D. A Notice to Proceed shall be issued approximately one month after award.
- E. Right to Reject Bids/Waiver: The Owner reserves the right to reject any or all bids or to waive any informalities or irregularities in the bidding.
- F. Retainage Funds: The Owner will not pay interest to the Contractor for accounts where retainage funds are maintained by the Owner. As part of the procurement by which the Contractor was selected for this work, the Contractor agrees to waive any other options and has made allowances for this waiver.

GENERAL CONDITIONS

PART 1 - GENERAL PROVISIONS

1.1 DEFINITIONS

- A. "Application for Payment" means a written request submitted by Contractor to Owner for payment of Work completed in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Owner or A/E may require.
- B. "Architect," "Engineer," or "A/E" means a person or entity lawfully entitled to practice architecture or engineering, representing Owner within the limits of its delegated authority.
- C. "Authority Having Jurisdiction" or "AHJ" means a federal, state, local, or other regional department, or an individual such as a fire official, labor department, health department, building official, or other individual having statutory authority.
- D. "Change Order" means a written instrument signed by Owner and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Sum, if any, and (3) the extent of the adjustment in the Contract Time, if any.
- E. "Claim" means Contractor's exclusive remedy for resolving disputes with Owner arising from the Contract Documents (including disputes regarding the terms of a Change Order or a request for equitable adjustment), as more fully set forth in Part 8.
- F. "Construction Schedule" means a schedule of the Work, in a form satisfactory to Owner, as further set forth in Part 3.2.
- G. "Contract Award Amount" is the sum of the Base Bid, any accepted Alternates, and Washington State Retail Sales Tax.
- H. "Contract Documents" means the Contract Form, Addenda, Instructions to Bidders, General Conditions, Bid Form and Bidder Information, applicable wage rates, drawings and specifications, hazardous material reports, performance and payment bonds, and all other parts of the bid solicitation.
- I. "Contract Sum" is the total amount payable by Owner to Contractor for performance of the Work in accordance with the Contract Documents, including Washington State sales tax and all other taxes imposed by law and properly chargeable to the Work.
- J. "Contract Time" is the number of consecutive Days allotted in the Contract Documents for achieving Substantial Completion of the Work.
- K. "Contracting Officer" means the person delegated the authority by Owner to enter into, and/or terminate this Contract. The term includes any successor Contracting Officer and any duly authorized representative of the Contracting Officer.
- L. "Contractor" means the person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.
- M. "Day" means calendar day, unless otherwise specified.
- N. "Drawings" are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.
- O. "Final Acceptance" means the written acceptance issued to Contractor by Owner after Contractor has completed the requirements of the Contract Documents.
- P. "Final Completion" means that the Work is fully and finally complete in accordance with the Contract Documents.
- Q. "Force Majeure" means those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in Part 3.5A.

GENERAL CONDITIONS

- R. "Furnish" means supply and deliver to Project site, ready for unpacking, assembly, installation, and similar operations.
- S. "Install" means operations at project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- T. "Manager" means the person who is an authorized agent of the Owner to administer the Contract.
- U. "Notice" means a written notice which has been delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice.
- V. "Notice to Proceed" means a notice from Owner to Contractor that defines the date on which the Contract Time begins to run.
- W. "Owner" means New Kirkland Heights LLLP or its authorized representative with the authority to enter into, administer, and/or terminate the Work in accordance with the Contract Documents and make related determinations and findings.
- X. "Person" means a corporation, partnership, business association of any kind, trust, company, or individual.
- Y. "Prior Occupancy" means Owner's use of all or parts of the Project before Substantial Completion, as more fully set forth in Part 6.7A.
- Z. "Provide" means furnish and install, complete and ready for the intended use.
- AA. "Project" means the total construction of which the Work performed in accordance with the Contract Documents may be the whole or a part and which may include construction by Owner or by separate contractors.
- BB. "Project Record" means the separate set of Drawings and Specifications as further set forth in Part 4.2A.
- CC. "Schedule of Values" means a written breakdown allocating the total Contract Sum to each principal category of Work, in such detail as requested by Owner.
- DD. "Specifications" are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.
- EE. "Subcontract" means a contract entered into by Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for or in connection with the Work.
- FF. "Subcontractor" means any person, other than Contractor, who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.
- GG. "Substantial Completion" means that stage in the progress of the Work where the Owner has full and unrestricted use and benefit of the facilities for the purposes intended [when the construction is sufficiently complete], as more fully set forth in Part 6.6.
- HH. "Work" means the construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents.

1.2 EXECUTION AND INTENT

Contractor makes the following representations to Owner:

- A. The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents;

GENERAL CONDITIONS

- B. Contractor has carefully reviewed the Contract Documents, had an opportunity to visit and examine the Project site, has become familiar with the local conditions in which the Work is to be performed, and has satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof.
- C. Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor's obligations required by the Contract Documents; and
- D. Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform the obligations required by the Contract Documents and has sufficient experience and competence to do so.
- E. All work is to be executed in accordance with the Building Codes, as adopted by the Authority Having Jurisdiction, and other applicable codes and generally accepted industry standards.
- F. The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. 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.

PART 2 - INSURANCE AND BONDS

2.1 INSURANCE REQUIREMENTS FOR BUILDING TRADES CONTRACTORS

- A. Within 7 days from the date of the Notice of Award and prior to commencing Work, Contractor shall obtain, and maintain, for the duration of the Contract and for one year after Final Acceptance, insurance against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or Subcontractors. Contractor shall also maintain such insurance coverage during the performance of any corrective Work required by Part 5.15. Review of the Contractor's insurance by Owner shall not relieve or decrease the liability of Contractor.

2.2 MINIMUM SCOPE OF INSURANCE

- A. Contractors shall maintain coverages no less than:
 - 1. Insurance Services Office Commercial General Liability coverage.
 - 2. Insurance Services Office covering Automobile Liability, code 1 (any auto).
 - 3. Workers' Compensation insurance as required by State law and Employer's Liability Insurance.
 - 4. Builders Risk (Property / Course of Construction) insurance covering for all risks of loss (completed value of the project.).

2.3 MINIMUM LIMITS OF INSURANCE

- A. Contractor shall maintain limits no less than:
 - 1. General Liability: \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit of \$2,000,000.
 - 2. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
 - 3. Employer's Liability: \$1,000,000 per accident for bodily injury/sickness or disease.

2.4 DEDUCTIBLES AND SELF INSURED RETENTION

- A. Any deductibles or self-insured retentions must be declared to and approved by the Owner. At the option of the Owner, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Owner, its officers, officials, employees and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the Owner guaranteeing payment of losses and related investigations, claim administration and

GENERAL CONDITIONS

defense expenses. **NOTE: If this contract deals with hazardous materials or activities (i.e. lead based paint, asbestos, armed security guards), additional provisions covering those exposures must be included in order to protect the Owner's interests.**

2.5 OTHER INSURANCE PROVISIONS

- A. The policies are to contain, or be endorsed to contain, the following provisions:
1. The Owner, the Property Manager, its officers, officials, employees, partners, agents and volunteers are to be covered as additional insureds under a "completed operations" type of additional insured endorsement with respect to general liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. The endorsement(s) effectuating the foregoing additional insured coverage shall be ISO form CG 20 10 11 85, or CG 20 10 10 01 issued concurrently with CG 20 37 10 01, or their equivalent as long as it provides additional insured coverage, without limitation, for (1) completed operations; (2) automobile liability arising out of vehicles owned, leased, hired, or borrowed by or on behalf of the Contractor; (3) any insurance written on a claims made basis, shall have a retroactive date that coincides with, or precedes, the commencement of any work under this contract. Evidence of such coverage shall be maintained for a minimum of six (6) years beyond the expiration of the project.
 2. The Owner will not accept Certificates of Insurance alone. Improperly completed endorsements will be returned to your insured for correction by an authorized representative of the insurance company.
 3. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the Owner, its officers, officials, agents, partners, employees, and volunteers. Any insurance or self-insurance maintained or expired by the Owner, its officers, officials, agents, partners, employees, volunteers shall be excess of the Contractor's insurance and shall not contribute with it. Owner's Insurance is Non-Contributory in claims settlement funding.
 4. The "General description of agreement(s) and/or activity(s) insured" shall include reference to the activity and/or to Owner's specific project or site name, contract number, lease number, permit number or construction approval number.
 5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled or materially changed, except after thirty (30) days' [ten (10) days for non-payment of premium] prior written notice, by certified mail, return receipt requested, has been given to the Owner.
 6. Maintenance of the proper insurance for the duration of the contract is a material element of the contract. Material changes in the required coverage or cancellation of the coverage shall constitute a material breach of the contract.

2.6 ACCEPTABILITY OF INSURERS

- A. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-:VII. The name of the Insurance Company underwriting the coverage and its address shall be noted on the endorsement form. Contractors must provide written verification of their insurer's rating.

2.7 VERIFICATION OF COVERAGE

- A. Contractor shall furnish the Owner with original certificates and amendatory endorsements effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Owner before work commences in sufficient time to permit contractor to remedy any deficiencies. The Owner reserves the right to require complete, certified copies of all required insurance policies or pertinent parts thereof, including endorsements affecting the coverage, required by these specifications at any time. Contractor shall include in its bid the cost of all insurance and bonds required to complete the base bid work and accepted alternates.

2.8 SUBCONTRACTORS

- A. Subcontractors shall include the Contractor as additional insured under their policies. All coverage for subcontractors shall be subject to all of the requirements stated herein. Contractor shall be responsible for the adequacy of required coverages for subcontractors, and compile related certificates of insurance and endorsements evidencing subcontractors' compliance.

GENERAL CONDITIONS

2.9 PAYMENT AND PERFORMANCE BONDS

- A. Payment and performance bonds for 100% of the Contract Award Amount shall be furnished for the Work, using the Payment Bond and Performance Bond form AIA – form A312. Change order increases of cumulative 15% increments require revisions to the bond to match the new Contract Sum.

PART 3 - TIME AND SCHEDULE

3.1 PROGRESS AND COMPLETION

- A. Contractor to meet schedule: Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within a reasonable period thereafter.

3.2 CONSTRUCTION SCHEDULE

- A. Preliminary Progress Schedule: Unless otherwise provided in Division 1, Contractor shall, within seven Days after issuance of the Notice to Proceed, submit a preliminary Construction Schedule. The Construction Schedule shall show the sequence in which Contractor proposes to perform the Work and the dates on which Contractor plans to start and finish major portions of the Work, including dates for shop drawings and other submittals, and for acquiring materials and equipment.
- B. Form of Construction Schedule: Unless otherwise provided in Division 1, the Construction Schedule shall be in the form of a bar chart or critical path method analysis, as specified by Owner. The preliminary Construction Schedule may be general, showing the major portions of the Work, with a more detailed Construction Schedule submitted as directed by Owner.
- C. Owner comments on Construction Schedule: Owner shall return comments on the preliminary Construction Schedule to Contractor within 7 Days of receipt. Review by Owner of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, or sequencing, or its ability to complete the Work within the Contract Time. Contractor shall revise and resubmit its schedule, as necessary. Owner may withhold a portion of the progress payments until a Construction Schedule has been submitted which meets the requirements of this section.
- D. Monthly updates and compliance with Construction Schedule: Contractor shall utilize and comply with the Construction Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Construction Schedule at its own expense to Owner indicating actual progress, accompanying each Application for Payment. If, in the opinion of Owner, Contractor is not in conformance with the Construction Schedule for reasons other than acts of Force Majeure as identified in Part 3.5, Contractor shall take such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Construction Schedule, or revise the Construction Schedule to reconcile with the actual progress of the Work.
- E. Contractor to notify Owner of delays: Contractor shall promptly notify Owner in writing of any actual or anticipated event which is delaying or could delay achievement of any milestone or performance of any critical path activity of the Work. Contractor shall indicate the expected duration of the delay, the anticipated effect of the delay on the Construction Schedule, and the action being or to be taken to correct the problem. Provision of such notice does not relieve Contractor of its obligation to complete the Work within the Contract Time.

3.3 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

- A. Owner may suspend Work: Owner may, at its sole discretion, order Contractor, in writing, to suspend all or any part of the Work for up to 90 Days, or for such longer period as mutually agreed.
- B. Compliance with suspension; Owner's options: Upon receipt of a written notice suspending the Work, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 Days after the notice is delivered to Contractor, or within any extension of that period to which the parties shall have agreed, Owner shall either:
 - 1. Cancel the written notice suspending the Work; or

GENERAL CONDITIONS

2. Terminate the Work covered by the notice as provided in the termination provisions of Part 9.

- C. Resumption of Work: If a written notice suspending the Work is cancelled or the period of the notice or any extension thereof expires, Contractor shall resume Work.
- D. Equitable Adjustment for suspensions: Contractor shall be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance directly attributable to such suspension, provided Contractor complies with all requirements set forth in Section 7.

3.4 OWNER'S RIGHT TO STOP THE WORK FOR CAUSE

- A. Owner may stop Work for Contractor's failure to perform: If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Owner may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.
- B. No Equitable Adjustment for Contractor's failure to perform: Contractor shall not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor's failure or refusal to perform or from any reasonable remedial action taken by Owner based upon such failure.

3.5 DELAY

- A. Force Majeure actions not a default; Force Majeure defined: Any delay in or failure of performance by Owner or Contractor, other than the payment of money, shall not constitute a default hereunder if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party ("Force Majeure"). Acts of Force Majeure include, but are not limited to:
 - 1. Acts of God or the public enemy;
 - 2. Acts or omissions of any government entity;
 - 3. Fire or other casualty for which Contractor is not responsible;
 - 4. Quarantine or epidemic;
 - 5. Strike or defensive lockout;
 - 6. Unusually severe weather conditions which could not have been reasonably anticipated; and
 - 7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Owner was available.
- B. Contract Time adjustment for Force Majeure: Contractor shall be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of Force Majeure, provided it makes a request for equitable adjustment according to Part 7.2A. Contractor shall not be entitled to an adjustment in the Contract Sum resulting from an act of Force Majeure.
- C. Contract Time or Contract Sum adjustment if Owner at fault: Contractor shall be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment in Contract Sum, if the cost or time of Contractor's performance is changed due to the fault or negligence of Owner, provided the Contractor makes a request according to Parts 7.2 and 7.2A.
- D. No Contract Time or Contract Sum adjustment if Contractor at fault: Contractor shall not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.
- E. Contract Time adjustment only for concurrent fault: To the extent any delay or failure of performance was concurrently caused by the Owner and Contractor, Contractor shall be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment according to Section 7.2A, but shall not be entitled to an adjustment in Contract Sum.
- F. Contractor to mitigate delay impacts: Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.

GENERAL CONDITIONS

3.6 NOTICE TO OWNER OF LABOR DISPUTES

- A. Contractor to notify Owner of labor disputes: If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract Documents, Contractor shall immediately give notice, including all relevant information, to Owner.
- B. Pass through notification provisions to Subcontractors: Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor shall immediately notify the next higher tier Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

3.7 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

- A. Liquidated Damages
 - 1. Reason for Liquidated Damages: Timely performance and completion of the Work is essential to Owner and time limits stated in the Contract Documents are of the essence. Owner will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time. However, it would be difficult if not impossible to determine the exact amount of such damages. Consequently, liquidated damages of \$ [2000.00 per Day unless other amount indicated here or in Division 1] will be assessed.
 - 2. Calculation of Liquidated Damages amount: The liquidated damage amounts set forth above will be assessed not as a penalty, but as liquidated damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. This amount shall be construed as the actual amount of damages sustained by the Owner, and may be retained by the Owner and deducted from any payments to the Contractor.
 - 3. Contractor responsible even if Liquidated Damages assessed: Assessment of liquidated damages shall not release Contractor from any further obligations or liabilities pursuant to the Contract Documents.
 - 4. 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.
- B. Actual Damages
 - 1. Calculation of Actual Damages: Actual damages will be assessed for failure to achieve Final Completion within the time provided. Actual damages will be calculated on the basis of direct administrative, financial, and other related costs attributable to the Project from the date when Substantial Completion should have been achieved to the date Final Completion is actually achieved. The amount of these costs may be retained by Owner and deducted from any payment due Contractor.

PART 4 - SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

4.1 DISCREPANCIES AND CONTRACT DOCUMENT REVIEW

- A. Specifications and Drawings are basis of the Work: The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.
- B. Parts of the Contract Documents are complementary: The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. 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.
- C. Contractor to report discrepancies in Contract Documents: Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Owner. If, during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the Work affected thereby, report such conflict, error, inconsistency, or omission to Owner in writing.

GENERAL CONDITIONS

- D. Contractor knowledge of discrepancy in documents – responsibility: Contractor shall do no Work without applicable Drawings, Specifications, or written modifications, or Shop Drawings where required, unless instructed to do so in writing by Owner. If Contractor performs any construction activity, and it knows or should have known that any of the Contract Documents contain a conflict, error, inconsistency, or omission, Contractor shall be responsible for the performance and shall bear the cost for its correction.
- E. Contractor to perform Work implied by Contract Documents: Contractor shall provide any work or materials the provision of which is clearly implied and is within the scope of the Contract Documents even if the Contract Documents do not mention them specifically.
- F. Interpretation questions referred to Owner: Questions regarding interpretation of the requirements of the Contract Documents shall be referred to the Owner.

4.2 PROJECT RECORD

- A. Contractor to maintain Project Record Drawings and Specifications: Contractor shall legibly mark in ink on a separate set of the Drawings and Specifications all actual construction, including depths of foundations, horizontal and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order Proposals (COP). This separate set of Drawings and Specifications shall be the “Project Record.”
- B. Update Project Record weekly and keep on site: The Project Record shall be maintained on the project site throughout the construction and shall be clearly labeled “PROJECT RECORD” The Project Record shall be updated at least weekly noting all changes and shall be available to Owner at all times.
- C. Final Project Record to A/E before Final Acceptance: Contractor shall submit the completed and finalized Project Record to Owner prior to Final Acceptance.

4.3 SHOP DRAWINGS

- A. Definition of Shop Drawings: “Shop Drawings” means documents and other information required to be submitted to Owner by Contractor pursuant to the Contract Documents, showing in detail: the proposed fabrication and assembly of structural elements; and the installation (i.e. form, fit, and attachment details) of materials and equipment. Shop Drawings include, but are not limited to, drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, samples, and similar materials furnished by Contractor to explain in detail specific portions of the Work required by the Contract Documents. For materials and equipment to be incorporated into the Work, Contractor submittal shall include the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the item. When directed, Contractor shall submit all samples at its own expense. Owner may duplicate, use, and disclose Shop Drawings provided in accordance with the Contract Documents.
- B. Approval of Shop Drawings by Contractor and A/E: Contractor shall coordinate all Shop Drawings, and review them for accuracy, completeness, and compliance with the Contract Documents and shall indicate its approval thereon as evidence of such coordination and review. Where required by law, Shop Drawings shall be stamped by an appropriate professional licensed by the state of Washington. Shop Drawings submitted to Owner without evidence of Contractor’s approval shall be returned for resubmission. Contractor shall review, approve, and submit Shop Drawings with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or separate contractors. Contractor’s submittal schedule shall allow a reasonable time for A/E review. Owner will review, approve, or take other appropriate action on the Shop Drawings. Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings until the respective submittal has been reviewed and the Owner has approved or taken other appropriate action. Owner shall respond to Shop Drawing submittals with reasonable promptness. Any Work by Contractor shall be in accordance with reviewed Shop Drawings. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.
- C. Contractor not relieved of responsibility when Shop Drawings approved: Approval, or other appropriate action with regard to Shop Drawings, by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such Shop Drawings, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Owner or A/E shall not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of

GENERAL CONDITIONS

Contractor's means or methods of construction. If Contractor fails to obtain approval before installation and the item or work is subsequently rejected, Contractor shall be responsible for all costs of correction.

- D. Variations between Shop Drawings and Contract Documents: If Shop Drawings show variations from the requirements of the Contract Documents, Contractor shall describe such variations in writing, separate from the Shop Drawings, at the time it submits the Shop Drawings containing such variations. If Owner approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification shall be recorded upon the Project Record.
- E. Contractor to submit 4 copies of Shop Drawings: Unless otherwise provided in Division 1, Contractor shall submit to Owner for approval 4 copies of all Shop Drawings. Unless otherwise indicated, 3 sets of all Shop Drawings shall be retained by Owner and 1 set shall be returned to Contractor.

4.4 ORGANIZATION OF SPECIFICATIONS

- A. Specification organization by trade: Specifications are prepared in sections which conform generally with trade practices. These sections are for Owner and Contractor convenience and shall not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by any trade.

PART 5 - PERFORMANCE

5.1 CONTRACTOR CONTROL AND SUPERVISION

- A. Contractor responsible for Means and Methods of construction: Contractor shall supervise and direct the Work, using its best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters. Contractor shall disclose its means and methods of construction when requested by Owner.
- B. Competent Superintendent required: Performance of the Work shall be directly supervised by a competent superintendent who has authority to act for Contractor. The superintendent must be satisfactory to the Owner and shall not be changed without the prior written consent of Owner. Owner may require Contractor to remove the superintendent from the Work or Project site, if Owner reasonably deems the superintendent incompetent, careless, or otherwise objectionable, provided Owner has first notified Contractor in writing and allowed a reasonable period for transition.
- C. Contractor responsible for acts and omissions of self and agents: Contractor shall be responsible to Owner for acts and omissions of Contractor, Subcontractors, and their employees and agents.
- D. Contractor to employ competent and disciplined workforce: Contractor shall enforce strict discipline and good order among all of the Contractor's employees and other persons performing the Work. Contractor shall not permit employment of persons not skilled in tasks assigned to them. Contractor's employees shall at all times conduct business in a manner which assures fair, equal, and nondiscriminatory treatment of all persons. Owner may, by written notice, request Contractor to remove from the Work or Project site any employee Owner reasonably deems incompetent, careless, or otherwise objectionable.
- E. Contractor to keep project documents on site: Contractor shall keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed Shop Drawings, and permits and permit drawings.

5.2 PERMITS, FEES, AND NOTICES

- A. Contractor to obtain and pay for permits: Unless otherwise provided in the Contract Documents, Contractor shall pay for and obtain all permits, licenses, and inspections necessary for proper execution and completion of the Work. Prior to Final Acceptance, the approved, signed permits shall be delivered to Owner.

GENERAL CONDITIONS

- B. Allowances for permit fees: If allowances for permits or utility fees are called for in the Contract Documents and set forth in Contractor's bid, and the actual costs of those permits or fees differ from the allowances in the Contract Documents, the difference shall be adjusted by Change Order.
- C. Contractor to comply with all applicable laws: Contractor shall comply with and give notices required by all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of public authorities applicable to performance of the Work.

5.3 PREVAILING WAGES

- A. Contractor to pay Prevailing Wages: Contractor shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with the requirements of the Owner.
- B. Agreement to Pay Prevailing Wages: Before commencing the Work Contractor shall submit to the Owner an Agreement to Pay Prevailing Wages.
- C. Affidavit of Wages Paid: Prior to release of retainage, the Contractor shall submit to the Owner an Affidavit of Wages Paid, for the Contractor and every subcontractor, of any tier, that performed work on the Project.
- D. Disputes: Disputes regarding prevailing wage rates shall be referred to the Owner.
- E. Certified Payrolls: Contractor and any subcontractor shall submit a certified copy of payroll records if requested.

5.4 HOURS OF LABOR

- A. Overtime: Contractor shall comply with all applicable provisions of RCW 49.28 and they are incorporated herein by reference. Pursuant to that statute, no laborer, worker, or mechanic employed by Contractor, any Subcontractor, or any other person performing or contracting to do the whole or any part of the Work, shall be permitted or required to work more than eight hours in any one calendar day, provided, that in cases of extraordinary emergency, such as danger to life or property, the hours of work may be extended, but in such cases the rate of pay for time employed in excess of eight hours of each calendar day shall be not less than one and one-half times the rate allowed for this same amount of time during eight hours of service.

5.5 NONDISCRIMINATION

- A. During performance of the Work:
 - 1. Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, marital status, the presence of any physical, sensory, or mental disability, sexual orientation, Vietnam-era veteran status, disabled veteran status or political affiliation, nor commit any unfair practices as defined in RCW 49.60.
 - 2. 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, of any physical, sensory, or mental disability, sexual orientation, Vietnam-era veteran status, disabled veteran status, or political affiliation.
 - 3. The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and orders in regard to Equal Employment Opportunity including but not limited to Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and the rules, regulations, and orders of the Secretary of Labor. The Contractor shall include the terms of this Clause in every subcontract so that such term shall be binding on each Subcontractor.
 - 4. Non-Discrimination R.C.W. 49.60: These special requirements establish minimum requirements for affirmative action and are intended to define and implement the basic discrimination provisions of these specifications. Failure to comply with these requirements may constitute grounds for application of contract default.

5.6 SAFETY PRECAUTIONS

GENERAL CONDITIONS

- A. Contractor responsible for safety: Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work.
- B. Contractor safety responsibilities: In carrying out its responsibilities according to the Contract Documents, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether on site or stored off-site; and prevent damage to other property at the site or adjacent thereto. Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss; shall erect and maintain all necessary safeguards for such safety and protection; and shall notify owners of adjacent property and utilities when prosecution of the Work may affect them. For these purposes, the Contractor shall:
1. Follow Washington Industrial Safety and Health Act (WISHA) regional directives and provide a site-specific safety program that will require an accident prevention and hazard analysis plan for the contractor and each subcontractor on the work site. The Contractor shall submit a site-specific safety plan to the Owner's representative prior to the initial scheduled construction meeting.
 2. Provide adequate safety devices and measures including, but not limited to, the appropriate safety literature, notice, training, permits, placement and use of barricades, signs, signal lights, ladders, scaffolding, staging, runways, hoist, construction elevators, shoring, temporary lighting, grounded outlets, wiring, hazardous materials, vehicles, construction processes, and equipment required by Chapter 19.27 RCW, State Building Code (Uniform Building, Electrical, Mechanical, Fire, and Plumbing Codes); Chapter 212-12 WAC, Fire Marshal Standards, Chapter 49.17 RCW, WISHA; Chapter 296-155 WAC, Safety Standards for Construction Work; Chapter 296-65 WAC; WISHA Asbestos Standard; WAC 296-62-071, Respirator Standard; WAC 296-62, General Occupation Health Standards, WAC 296-24, General Safety and Health Standards, WAC 296-24, General Safety and Health Standards, Chapter 49.70 RCW, and Right to Know Act.
 3. Comply with the State Environmental Policy Act (SEPA), Clean Air Act, Shoreline Management Act, and other applicable federal, state, and local statutes and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources.
 4. Post all permits, notices, and/or approvals in a conspicuous location at the construction site.
 5. Provide any additional measures that the Owner determines to be reasonable and necessary for ensuring a safe environment in areas open to the public. Nothing in this part shall be construed as imposing a duty upon the Owner to prescribe safety conditions relating to employees, public, or agents of the Contractors.
- C. Contractor to maintain safety records: Contractor shall maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. Contractor shall immediately report any such incident to Owner. Owner shall, at all times, have a right of access to all records of exposure.
- D. Contractor to provide HazMat training: Contractor shall provide all persons working on the Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.
1. Information. At a minimum, Contractor shall inform persons working on the Project site of:
 - a. WAC: The requirements of chapter 296-62 WAC, General Occupational Health Standards;
 - b. Presence of hazardous chemicals: Any operations in their work area where hazardous chemicals are present; and
 - c. Hazard communications program: The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and material safety data sheets required by chapter 296-62 WAC.
 2. Training. At a minimum, Contractor shall provide training for persons working on the Project site which includes:
 - a. Detecting hazardous chemicals: Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
 - b. Hazards of chemicals: The physical and health hazards of the chemicals in the work area;
 - c. Protection from hazards: The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as

GENERAL CONDITIONS

- appropriate work practices, emergency procedures, and personal protective equipment to be used; and
 - d. Hazard communications program: The details of the hazard communications program developed by Contractor, or its Subcontractors, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.
 - E. Hazardous, toxic or harmful substances: Contractor's responsibility for hazardous, toxic, or harmful substances shall include the following duties:
 - 1. Illegal use of dangerous substances: Contractor shall not keep, use, dispose, transport, generate, or sell on or about the Project site, any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or harmful by any federal, state or local law, regulation, statute or ordinance (hereinafter collectively referred to as "hazardous substances"), in violation of any such law, regulation, statute, or ordinance, but in no case shall any such hazardous substance be stored on the Project site.
 - 2. Contractor notifications of spills, failures, inspections, and fines: Contractor shall promptly notify Owner of all spills or releases of any hazardous substances which are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor shall promptly notify Owner of all failures to comply with any federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.
 - F. Public safety and traffic: All Work shall be performed with due regard for the safety of the public. Contractor shall perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic shall be Contractor's responsibilities. All expenses involved in the maintenance of traffic by way of detours shall be borne by Contractor.
 - G. Contractor to act in an emergency: In an emergency affecting the safety of life or the Work or of adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened loss or injury, and Contractor shall so act if so authorized or instructed.
 - H. No duty of safety by Owner or A/E: Nothing provided in this section shall be construed as imposing any duty upon Owner or A/E with regard to, or as constituting any express or implied assumption of control or responsibility over, Project site safety, or over any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public.
- 5.7 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS
 - A. Limited storage areas: Contractor shall confine all operations, including storage of materials, to Owner-approved areas.
 - B. Temporary buildings and utilities at Contractor expense: Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Owner and without expense to Owner. The temporary buildings and utilities shall be removed by Contractor at its expense upon completion of the Work.
 - C. Roads and vehicle loads: Contractor shall use only established roadways or temporary roadways authorized by Owner. 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 federal, state, or local law or regulation.
 - D. Ownership and reporting by Contractor of demolished materials: Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor shall immediately vest in Contractor upon severance of the component from the facility or severance of the material from the Project site. Contractor shall be responsible for compliance with all laws governing the storage and ultimate disposal. Contractor shall provide Owner with a copy of all manifests and receipts evidencing proper disposal when required by Owner or applicable law.
 - E. Contractor responsible for care of materials and equipment on-site: Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be

GENERAL CONDITIONS

stored on the premises subject to approval of Owner. When Contractor uses any portion of the Project site as a shop, Contractor shall be responsible for any repairs, patching, or cleaning arising from such use.

- F. Contractor responsible for loss of materials and equipment: Contractor shall protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Final Acceptance, and shall repair or replace without cost to Owner any damage or loss that may occur.

5.8 PRIOR NOTICE OF EXCAVATION

- A. Excavation defined; Use of locator services: "Excavation" means an operation in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means, except the tilling of soil less than 12-inches in depth for agricultural purposes, or road ditch maintenance that does not change the original road grade or ditch flow line. Before commencing any excavation, Contractor shall engage a locate service for all underground facilities or utilities and provide notice of the scheduled commencement of excavation to all owners of underground facilities or utilities. Contractor shall pay all fees for locator services and pay for all damages caused by excavation.

5.9 UNFORESEEN PHYSICAL CONDITIONS

- A. Notice requirement for concealed or unknown conditions: If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor shall give written notice to Owner promptly and in no event later than 7 Days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.
- B. Adjustment in Contract Time and Contract Sum: If such conditions differ materially and cause a change in Contractor's cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum, or both, provided it makes a request therefore as provided in Part 7.

5.10 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, VEGETATION, UTILITIES AND IMPROVEMENTS

- A. Contractor to protect and repair property: Contractor shall protect from damage all existing structures, equipment, improvements, utilities, and vegetation at or near the Project site; and on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor shall repair any damage, including that to the property of a third party, resulting from failure to comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, Owner may have the necessary work performed and charge the cost to Contractor.
- B. Tree and vegetation protection: Contractor shall only remove trees when specifically authorized to do so, and shall protect vegetation that will remain in place.

5.11 LAYOUT OF WORK

- A. Advanced planning of the Work: Contractor shall plan and lay out the Work in advance of operations so as to coordinate all work without delay or revision.
- B. Layout responsibilities: Contractor shall lay out the Work from Owner-established baselines and bench marks indicated on the Drawings, and shall be responsible for all field measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor shall be responsible for executing the Work to the lines and grades that may be established. Contractor shall be responsible for maintaining or restoring all stakes and other marks established.

5.12 MATERIAL AND EQUIPMENT

GENERAL CONDITIONS

- A. Contractor to provide new and equivalent equipment and materials: All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard quality and shall not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of Owner, is equal to that named in the Specifications, unless otherwise specifically provided in the Contract Documents.
- B. Contractor responsible for fitting parts together: Contractor shall do all cutting, fitting, or patching that may be required to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonably implied by, the Contract Documents. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the Work and shall not cut or alter the work of any other contractor unless approved in advance by Owner.
- C. Owner may reject defective Work: Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this work, in whatever stage of completion, may be rejected by Owner.

5.13 AVAILABILITY AND USE OF UTILITY SERVICES

- A. Owner to provide and charge for utilities: Owner shall make all reasonable utilities available to Contractor from existing outlets and supplies, as specified in the Contract Documents. Unless otherwise provided in the Contract Documents, the utility service consumed shall be charged to or paid for by Contractor at prevailing rates charged to Owner or, where the utility is produced by Owner, at reasonable rates determined by Owner. Contractor will carefully conserve any utilities furnished.
- B. Contractor to install temporary connections and meters: Contractor shall, at its expense and in a skillful manner satisfactory to Owner, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices, and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

5.14 TESTS AND INSPECTION

- A. Contractor to provide for all testing and inspection of Work: Contractor shall maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract Documents. Contractor shall be responsible for inspection and quality surveillance of all its Work and all Work performed by any Subcontractor. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. Contractor shall give Owner timely notice of when and where tests and inspections are to be made. Contractor shall maintain complete inspection records and make them available to Owner.
- B. Owner may conduct tests and inspections: Owner may, at any reasonable time, conduct such inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Owner shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Owner, such Owner inspection and tests are for the sole benefit of Owner and do not:
 - 1. Constitute or imply acceptance;
 - 2. Relieve Contractor of responsibility for providing adequate quality control measures;
 - 3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
 - 4. Relieve Contractor of its responsibility to comply with the requirements of the Contract Documents; or
 - 5. Impair Owner's right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.
- C. Inspections or inspectors do not modify Contract Documents: Neither observations by an inspector retained by Owner, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.

GENERAL CONDITIONS

- D. Contractor responsibilities on inspections: Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Owner. Owner may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes reinspection or retest necessary. Owner shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

5.15 CORRECTION OF NONCONFORMING WORK

- A. Work covered by Contractor without inspection: If a portion of the Work is covered contrary to the requirements in the Contract Documents, it must, if required in writing by Owner, be uncovered for Owner's observation and be replaced at the Contractor's expense and without change in the Contract Time.
- B. Payment provisions for uncovering covered Work: If, at any time prior to Final Completion, Owner desires to examine the Work, or any portion of it, which has been covered, Owner may request to see such Work and it shall be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and, if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes such a request as provided in Part 7. If such Work is not in accordance with the Contract Documents, the Contractor shall pay the costs of examination and reconstruction.
- C. Contractor to correct and pay for non-conforming Work: Contractor shall promptly correct Work found by Owner not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear all costs of correcting such nonconforming Work, including additional testing and inspections.
- D. Contractor's compliance with warranty provisions: If, within one year after the date of Substantial Completion of the Work or designated portion thereof, or within one year after the date for commencement of any system warranties established under Part 6.7, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor shall correct it promptly after receipt of written notice from Owner to do so. Owner shall give such notice promptly after discovery of the condition. This period of one year shall be extended, with respect to portions of Work first performed after Substantial Completion, by the period of time between Substantial Completion and the actual performance of the Work. Contractor's duty to correct with respect to Work repaired or replaced shall run for one year from the date of repair or replacement. Obligations under this paragraph shall survive Final Acceptance.
- E. Contractor to remove non-conforming Work: Contractor shall remove from the Project site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.
- F. Owner may charge Contractor for non-conforming Work: If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Owner may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.
- G. Contractor to pay for damaged Work during correction: Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.
- H. No Period of limitation on other requirements: Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have according to the Contract Documents. Establishment of the time period of one year as described in Section 5.16D relates only to the specific obligation of Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.
- I. Owner may accept non-conforming Work and charge Contractor: If Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, Owner may do so instead of requiring its removal and correction, in which case the Contract Sum may be reduced as appropriate and equitable.

5.16 CLEAN UP

GENERAL CONDITIONS

- A. Contractor to keep site clean and leave it clean: Contractor shall at all times keep the Project site, including hauling routes, infrastructures, utilities, and storage areas, free from accumulations of waste materials. Before completing the Work, Contractor shall remove from the premises its rubbish, tools, scaffolding, equipment, and materials. Upon completing the Work, Contractor shall leave the Project site in a clean, neat, and orderly condition satisfactory to Owner. If Contractor fails to clean up as provided herein, and after reasonable notice from Owner, Owner may do so and the cost thereof shall be charged to Contractor.

5.17 ACCESS TO WORK

- A. Owner and A/E access to Work site: Contractor shall provide Owner and A/E access to the Work in progress wherever located.

5.18 OTHER CONTRACTS

- A. Owner may award other contracts; Contractor to cooperate: Owner may undertake or award other contracts for additional work at or near the Project site. Contractor shall reasonably cooperate with the other contractors and with Owner's employees and shall carefully adapt scheduling and perform the Work in accordance with these Contract Documents to reasonably accommodate the other work.

5.19 SUBCONTRACTORS AND SUPPLIERS

- A. Subcontractor Responsibility: The Contractor shall include the language of this paragraph in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this paragraph apply to all subcontractors regardless of tier. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:
 - 1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
 - 2. Have a current Washington Unified Business Identifier (UBI) number;
 - 3. If applicable, have:
 - a. Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;
 - b. A Washington Employment Security Department number, as required in Title 50 RCW;
 - c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
 - d. An electrical contractor license, if required by Chapter 19.28 RCW;
 - e. An elevator contractor license, if required by Chapter 70.87 RCW.
- B. Provide names of Subcontractors and use qualified firms: Before submitting the first Application for Payment, Contractor shall furnish in writing to Owner the names, addresses, and telephone numbers of all Subcontractors, as well as suppliers. Contractor shall utilize Subcontractors and suppliers which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor shall not utilize any Subcontractor or supplier to whom the Owner has a reasonable objection, and shall obtain Owner's written consent before making any substitutions or additions.
- C. Subcontracts in writing and pass through provision: All Subcontracts must be in writing. By appropriate written agreement, Contractor shall require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Owner in accordance with the Contract Documents. Each Subcontract shall preserve and protect the rights of Owner in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. However, nothing in this paragraph shall be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.
- D. Coordination of Subcontractors; Contractor responsible for Work: Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work shall relieve Contractor

GENERAL CONDITIONS

from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.

- E. Automatic assignment of subcontracts: Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Owner provided that:
1. Effective only after termination and Owner approval: The assignment is effective only after termination by Owner for cause pursuant to Part 9.1 and only for those Subcontracts which Owner accepts by notifying the Subcontractor in writing; and
 2. Owner assumes Contractor's responsibilities: After the assignment is effective, Owner will assume all future duties and obligations toward the Subcontractor which Contractor assumed in the Subcontract.
 3. Impact of bond: The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

5.20 WARRANTY OF CONSTRUCTION

- A. Contractor warranty of Work: In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed by Contractor.
- B. Contractor responsibilities: With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract Documents, Contractor shall:
1. Obtain warranties: Obtain all warranties that would be given in normal commercial practice;
 2. Warranties for benefit of Owner: Require all warranties to be executed, in writing, for the benefit of Owner;
 3. Enforcement of warranties: Enforce all warranties for the benefit of Owner, if directed by Owner; and
 4. Contractor responsibility for subcontractor warranties: Be responsible to enforce any subcontractor's, manufacturer's, or supplier's warranties should they extend beyond the period specified in the Contract Documents.
- C. Warranties beyond Final Acceptance: The obligations under this section shall survive Final Acceptance.

5.21 INDEMNIFICATION

- A. The Contractor hereby agrees to indemnify, defend, and hold harmless the Owner, its successors and assigns, directors, officers, officials, employees, agents, partners and volunteers (all foregoing singly and collectively "Indemnitees") from and against any and all claims, losses, harm, costs, liabilities, damages and expenses, including, but not limited to, reasonable attorney's fees, arising or resulting from the performance of the services, or the acts or omissions of the Contractor its successors, and assigns, employees, subcontractors or anyone acting on the contractor's behalf in connection with the Contract Documents or its performance thereof.
- B. Provided, however, that the Contractor will not be required to indemnify, defend, or save harmless the indemnitee as provided in the preceding paragraphs of this section if the claim, suit, or action for injuries, death, or damages is caused by the sole negligence of the indemnitee. Where such claims, suites, or actions result from the concurrent negligence of (a) the Indemnitee or the Indemnitee's agents or employees and (b) the Contractor or the Contractor's agents or employees, the indemnity provisions provided in the proceeding paragraphs of this section shall be valid and enforceable only to the extent of the Contractor's negligence or the negligence of its agents and employees..
- C. The foregoing indemnity is specifically and expressly intended to constitute a waiver of the Contractor's immunity under Washington's Industrial Insurance act, RCW Title 51. The parties acknowledge that these provisions were specifically negotiated and agreed upon by them. If any portion of this indemnity clause is invalid or unenforceable, it shall be deemed excised and the remaining portions of the clause shall be given full force and effect.
- D. The Contractor hereby agrees to require all its Subcontractors or anyone acting under its direction or control or on its behalf in connection with or incidental to the performance of the Contract Documents to execute an indemnity clause identical to the preceding clauses, specifically naming the Indemnitees as indemnitee, and failure to do so shall constitute a material breach of the Contract Documents by the Contractor.

GENERAL CONDITIONS

PART 6 - PAYMENTS AND COMPLETION

6.1 CONTRACT SUM

- A. Taxes: The Contract Sum shall include all taxes imposed by law and properly chargeable to the Project, including retail sales tax. The contractor shall pay the WSST to the Department of Revenue and shall furnish proof of payment to the Owner if requested.

6.2 SCHEDULE OF VALUES

- A. Contractor to submit Schedule of Values: Before submitting its first Application for Payment, Contractor shall submit to Owner for approval a breakdown allocating the total Contract Sum to each principal category of work, in such detail as requested by Owner ("Schedule of Values"). The approved Schedule of Values shall include appropriate amounts for demobilization, record drawings, O&M manuals, and any other requirements for Project closeout, and shall be used by Owner as the basis for progress payments. Payment for Work shall be made only for and in accordance with those items included in the Schedule of Values.

6.3 APPLICATION FOR PAYMENT

- A. Monthly Application for Payment with substantiation: At monthly intervals, unless determined otherwise by Owner, Contractor shall submit to Owner an itemized Application for Payment for Work completed in accordance with the Contract Documents and the approved Schedule of Values. Each application shall be supported by such substantiating data as Owner may require.
- B. Contractor certifies Subcontractors paid: By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage, as their interests appeared in the last preceding certificate of payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in Part 1.2, are true and correct, to the best of Contractor's knowledge, as of the date of the Application for Payment.
- C. Reconciliation of Work with Progress Schedule: At the time it submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Progress Schedule. Each Application for Payment shall be consistent with previous applications and payments. Each Application for Payment needs to be accompanied by updated Construction Schedule.
- D. Payment for material delivered to site or stored off-site: If authorized by Owner, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:
 - 1. Suitable facility or location: The material will be placed in a facility or location that is structurally sound, dry, lighted and suitable for the materials to be stored;
 - 2. Facility or location within 10 miles of Project: The facility or location is located within a 10-mile radius of the Project. Other locations may be utilized, if approved in writing, by Owner;
 - 3. Facility or location exclusive to Project's materials: Only materials for the Project are stored within the facility or location (or a secure portion of a facility or location set aside for the Project);
 - 4. Insurance provided on materials in facility or location: Contractor furnishes Owner a certificate of insurance extending Contractor's insurance coverage for damage, fire, and theft to cover the full value of all materials stored, or in transit;
 - 5. Facility or location locked and secure: The facility or location (or secure portion thereof) is continuously under lock and key, and only Contractor's authorized personnel shall have access;
 - 6. Owner right of access to facility or location: Owner shall at all times have the right of access in company of Contractor;
 - 7. Contractor assumes total responsibility for stored materials: Contractor and its surety assume total responsibility for the stored materials; and
 - 8. Contractor provides documentation and Notice when materials moved to site: Contractor furnishes to Owner certified lists of materials stored, bills of lading, invoices, and other information as may be required, and shall also furnish Notice to Owner when materials are moved from storage to the Project site.

GENERAL CONDITIONS

6.4 PROGRESS PAYMENTS

- A. Owner to pay within 30 Days: Owner shall make progress payments, in such amounts as Owner determines are properly due, within 30 Days after receipt of a properly executed Application for Payment. Owner shall notify Contractor if the Application for Payment does not comply with the requirements of the Contract Documents.
- B. Withholding retainage; Options for retainage: Owner shall retain 5% of the amount of each progress payment until 45 Days after Final Acceptance and receipt of all documents required by law or the Contract Documents, including consent of surety to release of the retainage. The Owner will not pay interest to the Contractor for accounts where retainage funds are maintained by the Owner. The Contractor agrees to waive any other options and has made allowances for this waiver. Owner may permit Contractor to provide an appropriate bond in lieu of the retained funds.
- C. Title passes to Owner upon payment: Title to all Work and materials covered by a progress payment shall pass to Owner at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title shall not, however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Owner to insist on full compliance by Contractor with the Contract Documents.
- D. Waivers of Lien: With each Application for Payment, submit conditional waivers lien from every entity who is lawfully entitled to file a lien arising out of the Work covered by the payment.
 - 1. Submit partial waivers on each item for amount requested, before deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - a. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- E. Final Payment Application: Submit final Application for Payment with releases and close out supporting documentation.
- F. Approved payments shall be mailed to the Contractor within 30 days.

6.5 PAYMENTS WITHHELD

- A. Owner's right to withhold payment: Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary to protect Owner from loss or damage for reasons including but not limited to:
 - 1. Non-compliant Work: Work not in accordance with the Contract Documents;
 - 2. Remaining Work to cost more than unpaid balance: Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum;
 - 3. Owner correction or completion Work: Work by Owner to correct defective Work or complete the Work in accordance with Section 5.15;
 - 4. Contractor's failure to perform: Contractor's failure to perform in accordance with the Contract Documents; or
 - 5. Contractor's negligent acts or omissions: Cost or liability that may occur to Owner as the result of Contractor's fault or negligent acts or omissions.
- B. Owner to notify Contractor of withholding for unsatisfactory performance: In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Owner shall notify Contractor.

6.6 SUBSTANTIAL COMPLETION

- A. Substantial Completion defined: Substantial Completion is the stage in the progress of the Work when the construction is sufficiently complete, in accordance with the Contract Documents, so Owner has full and unrestricted use and benefit of the facilities for the use for which it is intended. All Work other than incidental corrective or punch list work shall be completed. Substantial Completion shall not have been achieved if all systems and parts are not functional, if utilities are not connected and operating normally, if all required occupancy permits have not been issued, or if the Work is not accessible by normal vehicular and pedestrian

GENERAL CONDITIONS

traffic routes. The date Substantial Completion is achieved shall be established in writing by Owner. Contractor may request an early date of Substantial Completion which must be approved by Change Order. Owner's occupancy of the Work or designated portion thereof does not necessarily indicate that Substantial Completion has been achieved.

6.7 PRIOR OCCUPANCY

- A. Prior Occupancy defined; Restrictions: Owner may, upon written notice thereof to Contractor, take possession of or use any completed or partially completed portion of the Work ("Prior Occupancy") at any time prior to Substantial Completion. Unless otherwise agreed in writing, Prior Occupancy shall not: be deemed an acceptance of any portion of the Work; accelerate the time for any payment to Contractor; prejudice any rights of Owner provided by any insurance, bond, guaranty, or the Contract Documents; relieve Contractor of the risk of loss or any of the obligations established by the Contract Documents; establish a date for termination or partial termination of the assessment of liquidated damages; or constitute a waiver of claims.
- B. Damage; Duty to repair and warranties: Notwithstanding anything in the preceding paragraph, Owner shall be responsible for loss of or damage to the Work resulting from Prior Occupancy. Contractor's one year duty to repair any system warranties shall begin on building systems activated and used by Owner as agreed in writing by Owner and Contractor.

6.8 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT

- A. Final Completion defined: Final Completion shall be achieved when the Work is fully and finally complete in accordance with the Contract Documents. The date Final Completion is achieved shall be established by a final inspection of the Work by Owner following receipt of (1) written notice from the Contractor that the Work is ready for final inspection and (2) a final Application for Payment. When the Owner finds the Work acceptable and fully performed under the Contract Documents and the Contractor has delivered to the Owner all warranties, permits, and operations manuals, the Owner will issue a Notice of Final Completion. In no case shall Final Completion constitute Final Acceptance which is a subsequent, separate, and distinct action.
- B. Final Acceptance defined: Final Acceptance shall be achieved when the Contractor has completed the requirements of the Contract Documents. The date Final Acceptance is achieved shall be established by Owner in writing. Prior to Final Acceptance, Contractor shall, in addition to all other requirements in the Contract Documents, submit to Owner a written notice of any outstanding disputes or claims between Contractor and any of its Subcontractors, including the amounts and other details thereof. Neither Final Acceptance, nor final payment, shall release Contractor or its sureties from any obligations of these Contract Documents or the payment and performance bonds, or constitute a waiver of any claims by Owner arising from Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Final payment waives Claim rights: Acceptance of final payment by Contractor, or any Subcontractor, shall constitute a waiver and release to Owner of all claims by Contractor, or any such Subcontractor, for an increase in the Contract Sum or the Contract Time, and for every act or omission of Owner relating to or arising out of the Work, except for those Claims made in accordance with the procedures, including the time limits, set forth in Part 8.

PART 7 - CHANGES

7.1 CHANGE IN THE WORK

- A. Changes in Work, Contract Sum, and Contract Time by Change Order: Owner may, at any time and without notice to Contractor's surety, order additions, deletions, revisions, or other changes in the Work. These changes in the Work shall be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by Owner causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment shall be made as provided in Section 7.2 or 7.2A, respectively, and such adjustment(s) shall be incorporated into a Change Order.
- B. Owner may request COP from Contractor: If Owner desires to order a change in the Work, it may request a written Change Order Proposal (COP) from Contractor. Contractor shall submit a Change Order Proposal within 7 Days of the request from Owner, or within such other period as mutually agreed. Contractor's Change Order

GENERAL CONDITIONS

Proposal shall be full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption of schedule, or loss of efficiency or productivity occasioned by the change in the Work.

- C. COP negotiations: Upon receipt of the Change Order Proposal, or a request for equitable adjustment in the Contract Sum or Contract Time, or both, as provided in Sections 7.2 and 7.3, Owner may accept or reject the proposal, request further documentation, or negotiate acceptable terms with Contractor. Pending agreement on the terms of the Change Order, Owner may direct Contractor to proceed immediately with the Change Order Work. Contractor shall not proceed with any change in the Work until it has obtained Owner's approval. All Work done pursuant to any Owner-directed change in the Work shall be executed in accordance with the Contract Documents.
- D. Change Order as full payment and final settlement: If Owner and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment.
- E. Failure to agree upon terms of Change Order; Final offer and Claims: If Owner and Contractor are unable to reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, Contractor may at any time in writing, request a final offer from Owner. Owner shall provide Contractor with its written response within 30 Days of Contractor's request. Owner may also provide Contractor with a final offer at any time. If Contractor rejects Owner's final offer, or the parties are otherwise unable to reach agreement, Contractor's only remedy shall be to file a Claim as provided in Part 8.
- F. Field Authorizations: The Owner may direct the Contractor to proceed with a change in the work through a written Field Authorization when the time required to price and execute a Change Order would impact the Project.

The Field Authorization shall describe and include the following:

- 1. The scope of work
- 2. An agreed upon maximum not-to-exceed amount
- 3. Any estimated change to the Contract Time
- 4. The method of final cost determination in accordance with the requirements of Part 7 of the General Conditions
- 5. The supporting cost data to be submitted in accordance with the requirements of Part 7 of the General Conditions

Upon satisfactory submittal by the Contractor and approval by the Owner of supporting cost data, a Change Order will be executed. The Owner will not make payment to the Contractor for Field Authorization work until that work has been incorporated into an executed Change Order.

7.2 CHANGE IN THE CONTRACT SUM

- A. Change Order Pricing - Fixed Price: When the fixed price or time and materials method is used to determine the value of any Work covered by a Change Order, or of a request for an equitable adjustment in the Contract Sum, the following procedures shall apply:
 - 1. Contractor's Change Order proposal, or request for adjustment in the Contract Sum, shall be accompanied by a complete itemization of the costs, including labor, material, subcontractor costs, and overhead and profit. The costs shall be itemized in the manner set forth below, and shall be submitted on breakdown sheets with documentation in a form approved by Owner.
 - 2. Any request for adjustment of Contract Sum shall include only the following items:
 - a. Craft labor costs for Contractors and Subcontractors.
 - 1) Basic wages and benefits: Hourly rates and benefits according to applicable prevailing wages.

GENERAL CONDITIONS

- 2) Direct supervision shall not to exceed 15% of the cost of direct labor. No supervision markup shall be allowed for a working supervisor's hours.
 - 3) Worker's Insurance. Direct contributions to the State for industrial insurance, medical aid, and supplemental pension by the class and rates established by L&I.
 - 4) Federal Insurance. Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.
 - 5) Safety and small tools: 4% of the sum of the amounts calculated in (1), (2), and (3) above.
 - b. Material Costs: Material costs shall be developed from actual known costs, supplier quotations or standard industry pricing guides and shall consider all available discounts. Freight costs, express charges, or special delivery charges shall be itemized.
 - c. Equipment Costs: Itemization of the type of equipment and the estimated or actual length of time the equipment appropriate for the Work is or will be used on the change in the Work. Costs will be allowed for equipment only if used solely for the changed Work, or for additional rental costs actually incurred by the Contractor. The Date Quest Rental Rate (Blue Book) shall be used as a basis for establishing rental rates of equipment not listed in the above sources. The maximum rate for standby equipment shall not exceed 50% of the applicable rate.
 - d. Allowance for Overhead: This allowance shall compensate Contractor for all noncraft labor, temporary construction facilities, field engineering, schedule updating, as-built drawings, home office cost, B&O taxes, office engineering, estimating costs, additional overhead because of extended time and any other cost incidental to the change in the Work. This allowance shall be strictly limited in all cases an amount not to exceed the following:
 - 1) For Contractor, for any Work actually performed by Contractor's own forces, 16% of the cost.
 - 2) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 16% of the cost.
 - 3) For Contractor, for any Work performed by its Subcontractor(s), 6% of the amount due each Subcontractor.
 - 4) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 5% of the amount due the sub-Subcontractor.
 - e. Allowance for Profit:
 - 1) For Contractor or Subcontractor of any tier for work performed by their forces, 5% of the cost developed in accordance with subsections a, b & c above.
 - 2) For Contractor or Subcontractor of any tier for work performed by a subcontractor of a lower tier, 5% of the Subcontractor cost.
 - f. Insurance or Bond Premium: The costs of any change or additional premium of Contractor's liability insurance and public works bond arising directly from the changed Work. The costs of any change in insurance or bond premium shall be added after overhead and profit are calculated.
 - g. Washington State sales tax as applicable.
- B. Change Order Pricing - Unit Prices
1. Work on a unit-price basis as stated in the Specifications and at the price submitted in the Bid Form or as subsequently modified.
 - a. Unit prices shall include reimbursement for all direct and indirect costs of the Work, including overhead and profit, and bond, insurance costs and retail sales tax; and
 - b. Quantities must be supported by field measurement verified by Owner.

7.3 CHANGE IN THE CONTRACT TIME

- A. The Contract Time shall only be changed by a Change Order. Contractor shall immediately notify Owner, and shall include any request for a change in the Contract Time in its Change Order proposal.
- B. If the time of Contractor's performance is changed due to an act of Force Majeure, Contractor shall request for an equitable adjustment in the Contract Time in writing within 24-hours of the occurrence.

GENERAL CONDITIONS

PART 8 - CLAIMS AND DISPUTE RESOLUTION

8.1 CLAIMS PROCEDURE

- A. Claim is Contractor's remedy: If the parties fail to reach agreement on the terms of any Change Order for Owner-directed Work as provided in Part 7.1, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in Part 7.2 or the Contract Time as provided in Part 7.3, Contractor's only remedy shall be to file a Claim with Owner as provided in this section.
- B. Claim filing deadline for Contractor: Contractor shall file its Claim within 30 Days from Owner's final offer made in accordance with Part 7.1E, or by the date of Final Acceptance, whichever occurs first.
- C. Claim must cover all costs and be documented: The Claim shall be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor may be entitled. It shall be fully substantiated and documented. At a minimum, the Claim shall contain the following information:
 - 1. Factual statement of Claim: A detailed factual statement of the Claim for additional compensation and time, if any, providing all necessary dates, locations, and items of Work affected by the Claim;
 - 2. Dates: The date on which facts arose which gave rise to the Claim;
 - 3. Owner and A/E employees knowledgeable about Claim: The name of each employee of Owner or A/E knowledgeable about the Claim;
 - 4. Support from Contract Documents: The specific provisions of the Contract Documents which support the Claim;
 - 5. Identification of other supporting information: The identification of any documents and the substance of any oral communications that support the Claim;
 - 6. Copies of supporting documentation: Copies of any identified documents, other than the Contract Documents, that support the Claim;
 - 7. Details on Claim for Contract Time: If an adjustment in the Contract Time is sought: the specific days and dates for which it is sought; the specific reasons Contractor believes an extension in the Contract Time should be granted; and Contractor's analysis of its Progress Schedule to demonstrate the reason for the extension in Contract Time;
 - 8. Details on Claim for adjustment of Contract Sum: If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories set forth in, and in the detail as required by Part 7.2; and
 - 9. Statement certifying Claim: A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Owner is liable.
- D. Owner's response to Claim filed: After Contractor has submitted a fully documented Claim that complies with all applicable provisions of Parts 7 and 8, Owner shall respond, in writing, to Contractor with a decision within 30 Days from the date the Claim is received.
- E. Owner's review of Claim and finality of decision: To assist in the review of Contractor's Claim, Owner may visit the Project site, or request additional information, in order to fully evaluate the issues raised by the Claim. Contractor shall proceed with performance of the Work pending final resolution of any Claim. Owner's written decision as set forth above shall be final and conclusive as to all matters set forth in the Claim, unless Contractor follows the procedure set forth in Part 8.2.
- F. Waiver of Contractor rights for failure to comply with this Section: Any Claim of the Contractor against the Owner for damages, additional compensation, or additional time, shall be conclusively deemed to have been waived by the Contractor unless timely made in accordance with the requirements of this Section.

8.2 ARBITRATION

GENERAL CONDITIONS

- A. Timing of Contractor's demand for arbitration: If Contractor disagrees with Owner's decision rendered in accordance with Part 8.1D, Contractor shall provide Owner with a written demand for arbitration. No demand for arbitration of any such Claim shall be made later than 30 Days after the date of Owner's decision on such Claim; failure to demand arbitration within said 30 Day period shall result in Owner's decision being final and binding upon Contractor and its Subcontractors.
- B. Filing of Notice for arbitration: Notice of the demand for arbitration shall be filed with the American Arbitration Association (AAA), with a copy provided to Owner. The parties shall negotiate or mediate under the Voluntary Construction Mediation Rules of the AAA, or mutually acceptable service, before seeking arbitration in accordance with the Construction Industry Arbitration Rules of AAA as follows:
 - 1. Claims less than \$30,000: Disputes involving \$30,000 or less shall be conducted in accordance with the Northwest Region Expedited Commercial Arbitration Rules; or
 - 2. Claims greater than \$30,000: Disputes over \$30,000 shall be conducted in accordance with the Construction Industry Arbitration Rules of the AAA, unless the parties agree to use the expedited rules.
- C. Arbitration is forum for resolving Claims: All Claims arising out of the Work shall be resolved by arbitration. The judgment upon the arbitration award may be entered, or review of the award may occur, in the superior court having jurisdiction thereof. No independent legal action relating to or arising from the Work shall be maintained.
- D. Owner may combine Claims into same arbitration: Claims between Owner and Contractor, Contractor and its Subcontractors, Contractor and A/E, and Owner and A/E shall, upon demand by Owner, be submitted in the same arbitration or mediation.
- E. Settlement outside of arbitration to be documented in Change Order: If the parties resolve the Claim prior to arbitration judgment, the terms of the resolution shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of the Claim, including all claims for time and for direct, indirect, or consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity.

8.3 CLAIMS AUDITS

- A. Owner may audit Claims: All Claims filed against Owner shall be subject to audit at any time following the filing of the Claim. Failure of Contractor, or Subcontractors of any tier, to maintain and retain sufficient records to allow Owner to verify all or a portion of the Claim or to permit Owner access to the books and records of Contractor, or Subcontractors of any tier, shall constitute a waiver of the Claim and shall bar any recovery.
- B. Contractor to make documents available: In support of Owner audit of any Claim, Contractor shall, upon request, promptly make available to Owner the following documents:
 - 1. Daily time sheets and supervisor's daily reports;
 - 2. Collective bargaining agreements;
 - 3. Insurance, welfare, and benefits records;
 - 4. Payroll registers;
 - 5. Earnings records;
 - 6. Payroll tax forms;
 - 7. Material invoices, requisitions, and delivery confirmations;
 - 8. Material cost distribution worksheet;
 - 9. Equipment records (list of company equipment, rates, etc.);
 - 10. Vendors', rental agencies', Subcontractors', and agents' invoices;
 - 11. Contracts between Contractor and each of its Subcontractors, and all lower-tier Subcontractor contracts and supplier contracts;
 - 12. Subcontractors' and agents' payment certificates;
 - 13. Cancelled checks (payroll and vendors);
 - 14. Job cost report, including monthly totals;
 - 15. Job payroll ledger;
 - 16. Planned resource loading schedules and summaries;
 - 17. General ledger;
 - 18. Cash disbursements journal;
 - 19. Financial statements for all years reflecting the operations on the Work. In addition, the Owner may require, if it deems it appropriate, additional financial statements for 3 years preceding execution of the Work;

GENERAL CONDITIONS

20. Depreciation records on all company equipment whether these records are maintained by the company involved, its accountant, or others;
 21. If a source other than depreciation records is used to develop costs for Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;
 22. All nonprivileged documents which relate to each and every Claim together with all documents which support the amount of any adjustment in Contract Sum or Contract Time sought by each Claim;
 23. Work sheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors, all documents which establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals; and
 24. Work sheets, software, and all other documents used by Contractor to prepare its bid.
- C. Contractor to provide facilities for audit and shall cooperate: The audit may be performed by employees of Owner or a representative of Owner. Contractor, and its Subcontractors, shall provide adequate facilities acceptable to Owner, for the audit during normal business hours. Contractor, and all Subcontractors, shall make a good faith effort to cooperate with Owner's auditors.

PART 9 - TERMINATION OF THE WORK

9.1 TERMINATION BY OWNER FOR CAUSE

- A. 7 Day Notice to Terminate for Cause: Owner may, upon Notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:
1. Contractor fails to prosecute Work: Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;
 2. Contractor bankrupt: Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency;
 3. Contractor fails to correct Work: Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents;
 4. Contractor fails to supply workers or materials: Contractor repeatedly fails to supply skilled workers or proper materials or equipment;
 5. Contractor failure to pay Subcontractors or labor: Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor;
 6. Contractor violates laws: Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction; or
 7. Contractor in material breach of Contract: Contractor is otherwise in material breach of any provision of the Contract Documents.
- B. Owner's actions upon termination: Upon termination, Owner may at its option:
1. Take possession of Project site: Take possession of the Project site and take possession of or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of, and to finish, the Work;
 2. Accept assignment of Subcontracts: Accept assignment of subcontracts pursuant to Part 5.20; and
 3. Finish the Work: Finish the Work by whatever other reasonable method it deems expedient.
- C. Surety's role: Owner's rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.
- D. Contractor's required actions: When Owner terminates the Work in accordance with this section, Contractor shall take the actions set forth in Part 9.2B, and shall not be entitled to receive further payment until the Work is accepted.
- E. Contractor to pay for unfinished Work: If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for A/E's services and expenses made necessary thereby and any other extra costs or damages incurred by Owner in completing the Work, or as a result of Contractor's actions, such excess shall be paid to Contractor. If such costs exceed the unpaid balance, Contractor shall pay the difference to Owner. These obligations for payment shall survive termination.

GENERAL CONDITIONS

- F. Contractor and Surety still responsible for Work performed: Termination of the Work in accordance with this section shall not relieve Contractor or its surety of any responsibilities for Work performed.
- G. Conversion of "Termination for Cause" to "Termination for Convenience": If Owner terminates Contractor for cause and it is later determined that none of the circumstances set forth in Part 9.1A exist, then such termination shall be deemed a termination for convenience pursuant to Part 9.2.

9.2 TERMINATION BY OWNER FOR CONVENIENCE

- A. Owner Notice of Termination for Convenience: Owner may, upon Notice, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for the convenience of Owner.
- B. Contractor response to termination Notice: Unless Owner directs otherwise, after receipt of a Notice of termination for either cause or convenience, Contractor shall promptly:
 - 1. Cease Work: Stop performing Work on the date and as specified in the notice of termination;
 - 2. No further orders or Subcontracts: Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;
 - 3. Cancel orders and Subcontracts: Cancel all orders and subcontracts, upon terms acceptable to Owner, to the extent that they relate to the performance of Work terminated;
 - 4. Assign orders and Subcontracts to Owner: Assign to Owner all of the right, title, and interest of Contractor in all orders and subcontracts;
 - 5. Take action to protect the Work: Take such action as may be necessary or as directed by Owner to preserve and protect the Work, Project site, and any other property related to this Project in the possession of Contractor in which Owner has an interest; and
 - 6. Continue performance not terminated: Continue performance only to the extent not terminated
- C. Terms of adjustment in Contract Sum if Contract terminated: If Owner terminates the Work or any portion thereof for convenience, Contractor shall be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination, plus reasonable allowance for overhead and profit on Work performed prior to termination, plus the reasonable administrative costs of the termination, but shall not be entitled to any other costs or damages, whatsoever, provided however, the total sum payable upon termination shall not exceed the Contract Sum reduced by prior payments. Contractor shall be required to make its request in accordance with the provisions of Part 7.
- D. Owner to determine whether to adjust Contract Time: If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.

PART 10 - MISCELLANEOUS PROVISIONS

10.1 GOVERNING LAW

- A. Applicable law and venue: The Contract Documents and the rights of the parties herein shall be governed by the laws of the state of Washington. Venue shall be in the county in which Owner's principal place of business is located, unless otherwise specified.

10.2 SUCCESSORS AND ASSIGNS

- A. Bound to successors; Assignment of Contract: Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party shall assign the Work without written consent of the other, except that Contractor may assign the Work for security purposes, to a bank or lending institution authorized to do business in the state of Washington. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations set forth in the Contract Documents.

10.3 MEANING OF WORDS

GENERAL CONDITIONS

- A. Meaning of words used in Specifications: Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or to the code of any governmental authority, whether such reference be specific or by implication, shall be to the latest standard specification, manual, or code in effect on the date for submission of bids, except as may be otherwise specifically stated. Wherever in these Drawings and Specifications an article, device, or piece of equipment is referred to in the singular manner, such reference shall apply to as many such articles as are shown on the drawings, or required to complete the installation.

10.4 RIGHTS AND REMEDIES

- A. No waiver of rights: No action or failure to act by Owner or A/E shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall action or failure to act constitute approval or an acquiescence in a breach therein, except as may be specifically agreed in writing. Waiver of any provision of the Contract Documents shall not be construed to be a modification of the such provisions, unless the Contract Documents are modified pursuant to the Clause entitled "Contract Modifications" herein.
- B. If any provision of the Contract Documents is or becomes void or unenforceable by operation of law, the remaining provisions shall be valid and enforceable.

10.5 TIME COMPUTATIONS

- A. Computing time: When computing any period of time, the day of the event from which the period of time begins shall not be counted. The last day is counted unless it falls on a weekend or legal holiday, in which event the period runs until the end of the next day that is not a weekend or holiday. When the period of time allowed is less than 7 days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation.

10.6 RECORDS RETENTION AND REPORTING

- A. Record keeping: The Contractor and all Subcontractors shall maintain accounts and records in accordance with State Auditor's procedures, including personnel, property, financial and programmatic records which sufficiently and properly reflect all direct and indirect costs of any nature expended and services performed in the performance of the Contract Documents and other such records as may be deemed necessary by the Owner to ensure proper accounting for all funds contributed by the Owner to the performance of the Contract Documents and compliance with this Contract.
- B. Six year records retention period: Contractor and its Subcontractors shall maintain these records for a period of not less than 6 years after the date of Final Acceptance.

10.7 THIRD-PARTY AGREEMENTS

- A. No third party relationships created: The Contract Documents shall not be construed to create a contractual relationship of any kind between: A/E and Contractor; Owner and any Subcontractor; or any persons other than Owner and Contractor. Contractor is an independent contractor with respect to the Work. Nothing in the Contract Documents shall be considered to create a relationship of employer and employee between the parties hereto. Neither the Contractor nor any employee of the Contractor shall be entitled to any benefits accorded Owner employees by virtue of the services provided. The Owner shall not be responsible for withholding or otherwise deducting federal income tax or social security or contributing to the State Industrial Insurance Program, or otherwise assuming the duties of an employer with respect to the Contractor, or any employees of the Contractor.

10.8 ANTITRUST ASSIGNMENT

- A. Contractor assigns overcharge amounts to Owner: Owner and Contractor recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, Contractor hereby assigns to Owner any and all claims for such overcharges as to goods, materials, and equipment purchased in connection with the Work performed in accordance with the Contract Documents, except as to overcharges which result from antitrust violations commencing after the Contract Sum is established and which are not passed on to Owner under a Change Order. Contractor shall put a similar clause in its Subcontracts,

GENERAL CONDITIONS

and require a similar clause in its sub- Subcontracts, such that all claims for such overcharges on the Work are passed to Owner by Contractor.

10.9 AUDITS AND INSPECTIONS

- A. The records and documents with respect to all matters covered by the Contract Documents shall be subject at all times to inspection, review or audit by the Owner or any other government agency so authorized by law during the performance of the Work. The Owner shall have the right to an annual audit of the Contractor's financial statement and condition.

10.10 ORGANIZATION CONFLICTS OF INTEREST

- A. The Contractor warrants that, to the best of its knowledge and belief and except as otherwise disclosed, it does not have any organizational conflict of interest which is defined as a situation in which the nature of work under the Contract Documents and the Contractor's organizational, financial, contractual or other interests are such that:
 - 1. Award of the Work may result in an unfair competitive advantage; or
 - 2. The Contractor's objectivity in performing the Work may be impaired.
- B. The Contractor agrees that if after award it discovers an organizational conflict of interest with respect to performance of the Work, it shall make an immediate and full disclosure in writing to the Contracting Officer, which shall include a description of the action the Contractor has taken or intends to take to eliminate or neutralize the conflict. The Owner may, however, terminate the Work if it deems the action to be in the best interest of the Owner.
- C. In the event the Contractor was aware of an organizational conflict of interest before the award of this Contract and intentionally did not disclose the conflict to the Contracting Officer, the Owner may terminate the Work for cause.
- D. The provisions of this Section 10.11 shall be included in all subcontracts and consulting agreements wherein the work to be performed is similar to the services provided by the Contractor. The Contractor shall include in such subcontracts and consulting agreements any necessary provisions to eliminate or neutralize conflicts of interest.

10.11 INTERESTS OF MEMBERS OF CONGRESS

- A. No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of the Contract Documents or to any benefit to arise therefrom, but this provision shall not be construed to extend to the Contract Documents if made with a corporation for its general benefit.

10.12 HEADINGS AND CAPTIONS

- A. Headings for convenience only: All headings and captions used in these General Conditions are only for convenience of reference, and shall not be used in any way in connection with the meaning, effect, interpretation, construction, or enforcement of the General Conditions, and do not define the limit or describe the scope or intent of any provision of these General Conditions.

BID FORM

PROJECT NAME AND LOCATION:

**Kirkland Heights
Redevelopment**

Contract Number: TC2300131

BID FORM

The undersigned, Legal Name of Bidder: _____

on this date: _____, 2023, having familiarized him/herself with the contract documents, site conditions, and has field verified all measurements contained in the project manual as prepared by the Owner, hereby proposes to furnish labor, materials and necessary equipment – all including, but not limited to, demolition, disposal, new installation and the required applicable taxes and fees to complete the work for the following bid amounts:

BASE BID _____ (\$ _____)

RETAIL SALES TAX _____ (\$ _____)

TOTAL BASE BID _____ (\$ _____)

ADDENDA _____
Acknowledge receipt of any addenda by inserting the number(s) above

PHASING _____
Acknowledge receipt of the Preferred Construction Phasing document.

In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids. The undersigned hereby agrees that this proposal shall be a valid and firm offer for a period of One Hundred Twenty (120) calendar days from the date of Bid Opening.

Bidder agrees that Work will be substantially complete and ready for final payment in accordance with the Contract Documents on or before the date, within the number of calendar days indicated.

The undersigned Bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date for this Project, the bidder is not a “willful” violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I certify (or declare) under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Signature of Bidder

Print Your Name

Submitted on _____ day of _____ 2023

City

State

BIDDER INFORMATION

BIDDER INFORMATION

Name of Bidder (Company): _____

Address: _____

Contact Name: _____

Phone Number: _____ Email Address: _____

Business Type: General Contractor () Other () (Please specify): _____

Bidder is a(n): ☐ Individual ☐ Partnership ☐ Joint Venture ☐ Incorporated in the state of _____

List business names & associated UBI # used by Bidder during the past 5 years if different than above:

Bidder has been in business continuously from: _____
Month, Year

Business License #: _____ Federal ID #: _____

Current UBI #: _____ Dept. of L&I Worker's Comp. Acct. #: _____

Bidder has experience in work "Similar in Scope and Complexity" comparable to that required for this Project:

As a prime contractor for _____ years. As a subcontractor for _____ years.

OWNER(S) OF COMPANY (List all owners):	OWNER'S SOCIAL SECURITY NUMBER (only required if sole proprietorship):

No. of regular full-time employees other than owner(s): _____

Indicate clearly the kind of work your company will actually perform in this project:

Approximate % of work your company will actually perform:

List the supervisory personnel to be employed by the Bidder and available for, and intended to, work on this project:

<u>Name</u>	<u>Title</u>	<u>How Long With Bidder</u>
_____	_____	_____
_____	_____	_____

BIDDER INFORMATION

SUBCONTRACTORS

Do you intend to use Subcontractor(s) in this project? Yes ☐ No ☐ See Instructions to Bidders, Part 1.3, C

Subcontractors Name	Subcontractor's UBI#	Phone Number	Trade	Years in Business
1.			HVAC	
2.			PLUMBING	
3.			ELECTRICAL	
4.				
5.				
6.				
7.				
8.				

BIDDER'S EXPERIENCE

Projects successfully supervised and completed by your company for work of similar scope and value as specified in bid documents in the last 5 years. Attach additional pages as necessary.

Name of Project	Completion Date	Duration (Months)	Nature of Work	Amount of Contract
1.				
2.				
3.				
4.				
5.				

Owner's Name (of project listed above)	Project Address	Contact Person	Phone Number
1.			
2.			
3.			
4.			
5.			

Has Bidder ever been found guilty of violating any State or Federal employment laws? ☐ No ☐ Yes

If yes, give details & attach additional pages as necessary: _____

BIDDER INFORMATION

Has Bidder ever filed for protection under any provision of the federal bankruptcy laws or state insolvency laws?

☐ No ☐ Yes. If yes, give details & attach additional pages as necessary: _____

Has any lien, claim and/or adverse legal action related to construction been rendered against Bidder in the past five years? (i.e., open claims, lawsuits, warrants, judgements including but not limited to those that would show on the L&I website) ☐ No ☐ Yes. If yes, give details & attach additional pages as necessary: _____

Has Bidder or any of its employees filed any claims with Washington State Worker's Compensation or other insurance company for accidents resulting in fatal injury or dismemberment in the past 5 years? ☐ No ☐ Yes. If yes, please state:

<u>Date</u>	<u>Type of Injury</u>	<u>Agency Receiving Claim</u>
_____	_____	_____
_____	_____	_____

Bidders current Experience Modification Rate (EMR): _____

(If Bidder is self-insured, attach proof of EMR stated, showing complete worksheet calculations)

The bidder hereby certifies that the information contained in this Bidder's Information is accurate, complete and current.

BY: _____ NAME: _____
(signature) (print)

TITLE: _____ DATE: _____

Kirkland Heights

Preferred Construction Phasing by Building

	Townhome 4-plex Rehab
	New Residential Building
	Stacked flat Rehab + new floor
	Stacked flat Rehab
	Community Building

2023

2024

Building	Building Type	Total Pre	Total Post	Construction Phase	Construction Duration	Construction Start	Construction Complete	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24
8	Pilot Project	0	12	0	14	5/1/2022	6/30/2023										
26	New Construction	0	24	1	11	7/1/2023	5/31/2024										
27	New Construction	0	24	1	11	7/1/2023	6/30/2024										
10	8-plex + 4 (early)	8	12	2	5	8/1/2023	12/31/2023										
11	8-plex + 4 (early)	8	12	2	5	8/1/2023	1/31/2024										
28	Community Building	0	0	3	12	12/1/2023	11/30/2024										
17	Townhomes (early)	4	4	4	5	1/1/2024	5/31/2024										
13	8-plex + 4 (early)	8	12	4	5	1/1/2024	6/30/2024										
12	8-plex + 4 (early)	8	12	5	5	2/1/2024	6/30/2024										
20	8-plex + 4 (late)	8	12	6	5	5/1/2024	9/30/2024										
21	8-plex + 4 (late)	8	12	6	5	5/1/2024	10/31/2024										
19	Townhomes (early)	4	4	7	5	6/1/2024	10/31/2024										
18	8-plex + 4 (early)	8	12	7	5	6/1/2024	11/30/2024										
22	8-plex + 4 (early)	8	12	8	5	7/1/2024	11/30/2024										
24	8-plex (early)	8	8	8	4	7/1/2024	11/30/2024										
6	8-plex (late)	8	8	9	4	8/1/2024	11/30/2024										
7	8-plex (late)	8	8	9	4	8/1/2024	12/31/2024										
23	Townhomes (late)	4	4	10	4	11/1/2024	2/28/2025										
25	8-plex (late)	8	8	10	4	11/1/2024	3/31/2025										
5	8-plex + 4 (late)	8	12	11	5	12/1/2024	4/30/2025										
4	8-plex (late)	8	8	11	4	12/1/2024	4/30/2025										
2	8-plex (late)	8	8	12	4	1/1/2025	4/30/2025										
3	8-plex (late)	8	8	12	4	1/1/2025	5/31/2025										
1	8-plex (late)	8	8	12	4	1/1/2025	6/30/2025										
14	8-plex + 4 (early)	8	12	13	5	2/1/2025	6/30/2025										
15	Townhomes (late)	4	4	14	4	3/1/2025	6/30/2025										
16	8-plex + 4 (late)	8	12	14	5	3/1/2025	8/31/2025										
9	Townhomes (late)	4	4	15	4	7/1/2025	10/31/2025										

Assumed Households

172 276

Units Rehab not yet Started

172 156 156 156 156 156 144 136 136 136

Units Completed

12 12 12 12 12 12 24 36 36 36

Existing Units Offline for Construction

0 16 16 16 16 16 20 20 20 20

Vacancies Needed

0 4 4 4 4 4 4 0 0 0

Buildings Under Construction

2 4 4 4 4 5 6 6 6 6

Townhome Buildings Under Construction

0 0 0 0 0 0 1 1 1 1

Kirkland Heights

Preferred Construction Phasing by Building

	Townhome 4-plex Rehab
	New Residential Building
	Stacked flat Rehab + new floor
	Stacked flat Rehab
	Community Building

2025

Building	Building Type	Total Pre	Total Post	Construction Phase	Construction Duration	Construction Start	Construction Complete	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25
8	Pilot Project	0	12	0	14	5/1/2022	6/30/2023										
26	New Construction	0	24	1	11	7/1/2023	5/31/2024										
27	New Construction	0	24	1	11	7/1/2023	6/30/2024										
10	8-plex + 4 (early)	8	12	2	5	8/1/2023	12/31/2023										
11	8-plex + 4 (early)	8	12	2	5	8/1/2023	1/31/2024										
28	Community Building	0	0	3	12	12/1/2023	11/30/2024										
17	Townhomes (early)	4	4	4	5	1/1/2024	5/31/2024										
13	8-plex + 4 (early)	8	12	4	5	1/1/2024	6/30/2024										
12	8-plex + 4 (early)	8	12	5	5	2/1/2024	6/30/2024										
20	8-plex + 4 (late)	8	12	6	5	5/1/2024	9/30/2024										
21	8-plex + 4 (late)	8	12	6	5	5/1/2024	10/31/2024										
19	Townhomes (early)	4	4	7	5	6/1/2024	10/31/2024										
18	8-plex + 4 (early)	8	12	7	5	6/1/2024	11/30/2024										
22	8-plex + 4 (early)	8	12	8	5	7/1/2024	11/30/2024										
24	8-plex (early)	8	8	8	4	7/1/2024	11/30/2024										
6	8-plex (late)	8	8	9	4	8/1/2024	11/30/2024										
7	8-plex (late)	8	8	9	4	8/1/2024	12/31/2024										
23	Townhomes (late)	4	4	10	4	11/1/2024	2/28/2025										
25	8-plex (late)	8	8	10	4	11/1/2024	3/31/2025										
5	8-plex + 4 (late)	8	12	11	5	12/1/2024	4/30/2025										
4	8-plex (late)	8	8	11	4	12/1/2024	4/30/2025										
2	8-plex (late)	8	8	12	4	1/1/2025	4/30/2025										
3	8-plex (late)	8	8	12	4	1/1/2025	5/31/2025										
1	8-plex (late)	8	8	12	4	1/1/2025	6/30/2025										
14	8-plex + 4 (early)	8	12	13	5	2/1/2025	6/30/2025										
15	Townhomes (late)	4	4	14	4	3/1/2025	6/30/2025										
16	8-plex + 4 (late)	8	12	14	5	3/1/2025	8/31/2025										
9	Townhomes (late)	4	4	15	4	7/1/2025	10/31/2025										

Assumed Households 172 276

Units Rehab not yet Started	120	108	92	76	76	76	64	48	24	16
Units Completed	36	64	112	112	112	124	140	180	188	188
Existing Units Offline for Construction	36	44	44	60	60	52	52	36	52	60
Vacancies Needed	16	0	0	0	0	0	0	0	0	0

Buildings Under Construction	8	8	7	9	9	8	8	5	7	8
Townhome Buildings Under Construction	1	1	1	1	1	1	1	1	1	1

Kirkland Heights

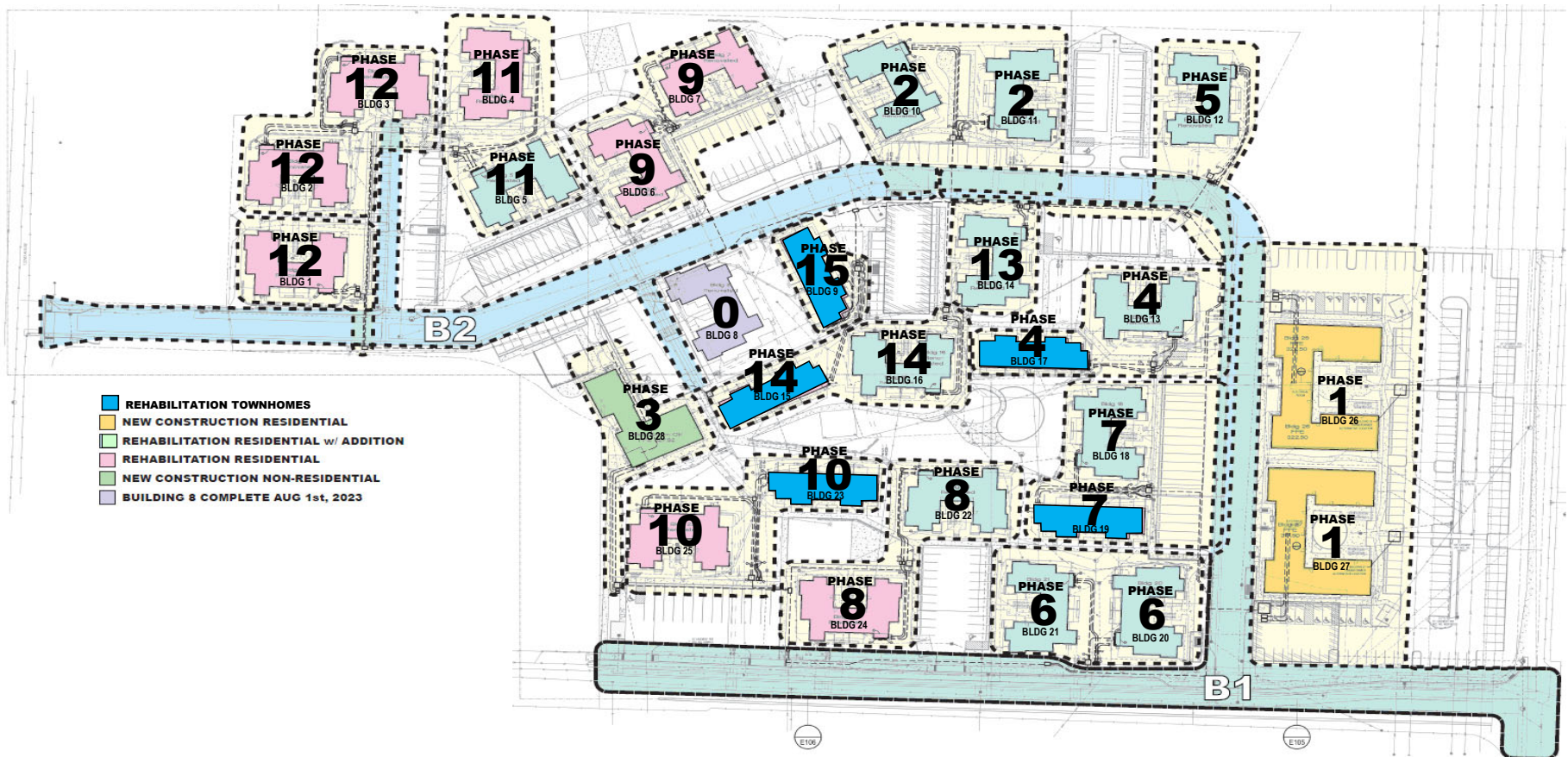
Preferred Construction Phasing by Building

	Townhome 4-plex Rehab
	New Residential Building
	Stacked flat Rehab + new floor
	Stacked flat Rehab
	Community Building

Building	Building Type	Total Pre	Total Post	Construction Phase	Construction Duration	Construction Start	Construction Complete	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
8	Pilot Project	0	12	0	14	5/1/2022	6/30/2023										
26	New Construction	0	24	1	11	7/1/2023	5/31/2024										
27	New Construction	0	24	1	11	7/1/2023	6/30/2024										
10	8-plex + 4 (early)	8	12	2	5	8/1/2023	12/31/2023										
11	8-plex + 4 (early)	8	12	2	5	8/1/2023	1/31/2024										
28	Community Building	0	0	3	12	12/1/2023	11/30/2024										
17	Townhomes (early)	4	4	4	5	1/1/2024	5/31/2024										
13	8-plex + 4 (early)	8	12	4	5	1/1/2024	6/30/2024										
12	8-plex + 4 (early)	8	12	5	5	2/1/2024	6/30/2024										
20	8-plex + 4 (late)	8	12	6	5	5/1/2024	9/30/2024										
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22	8-plex + 4 (early)	8	12	8	5	7/1/2024	11/30/2024										
24	8-plex (early)	8	8	8	4	7/1/2024	11/30/2024										
6	8-plex (late)	8	8	9	4	8/1/2024	11/30/2024										
7	8-plex (late)	8	8	9	4	8/1/2024	12/31/2024										
23	Townhomes (late)	4	4	10	4	11/1/2024	2/28/2025										
25	8-plex (late)	8	8	10	4	11/1/2024	3/31/2025										
5	8-plex + 4 (late)	8	12	11	5	12/1/2024	4/30/2025										
4	8-plex (late)	8	8	11	4	12/1/2024	4/30/2025										
2	8-plex (late)	8	8	12	4	1/1/2025	4/30/2025										
3	8-plex (late)	8	8	12	4	1/1/2025	5/31/2025										
1	8-plex (late)	8	8	12	4	1/1/2025	6/30/2025										
14	8-plex + 4 (early)	8	12	13	5	2/1/2025	6/30/2025										
15	Townhomes (late)	4	4	14	4	3/1/2025	6/30/2025										
16	8-plex + 4 (late)	8	12	14	5	3/1/2025	8/31/2025										
9	Townhomes (late)	4	4	15	4	7/1/2025	10/31/2025										

Assumed Households	172	276															
Units Rehab not yet Started								4	4	4	4	0	0	0	0	0	0
Units Completed								192	200	228	236	260	260	272	272	276	276
Existing Units Offline for Construction								68	60	36	28	12	12	4	4	0	0
Vacancies Needed								0	0	0	0	0	0	0	0	0	0
Buildings Under Construction								9	8	5	4	2	2	1	1	0	0
Townhome Buildings Under Construction								1	1	1	1	1	1	1	1	0	0

Kirkland Heights Preferred Phasing Plan



SECTION 01 10 00
SUMMARY

PART 1 GENERAL

- 1.1 Conform to the requirements of Division 00 and Division 01, including the General Conditions, Special Conditions, and Supplementary Conditions of the Contract.
- 1.2 CONTRACT DESCRIPTION: EARTHWORK AND UTILITY WORK
 - A. The Project site is a single, developed lot in Kirkland, Washington with twenty-five existing wood-framed apartment buildings with 179 residential units, demolition of one existing community/office building, and two existing utility buildings as illustrated on the drawings identified as bidding and/or construction drawings. The existing wood frame structures will be renovated per the drawings identified as bidding and/or construction drawings, three new buildings will be constructed as part of the scope of work including two 24 unit apartment buildings, Buildings 26 and 27, and a new Community Building, Building 28, to be constructed on the site of the current Community and Laundry Buildings as illustrated on the drawings identified as bidding and/or construction drawings.
 1. sitework and utility work;
 2. site specialties and landscaping work;
 3. concrete footings, slabs-on-grade, and cast in place concrete;
 4. Type 5-A construction.
 5. the balance of building construction including MEP, and fire sprinkler work shown on the drawings and specified herein.
 - B. Perform Work of Contract under a stipulated sum amount contract with Owner in accordance with Conditions of Contract.
 - C. First-class workmanship is expected; that is not intended to demand "deluxe" work, but only to guard against and prevent poor workmanship.
 1. Before installing any item or material, verify that receiving surfaces are plumb, level, true to line, and straight to the degree necessary to achieve tolerances specified or required. Perform without extra cost all shimming, blocking, grinding, or patching required to make such surfaces plumb, level, true to line, and straight.
 2. Take care in attention to details and fitting at intersections and junctures of materials. All joints are to be tight, straight, even, and smooth.
 - D. Work of each separate Contract, if any, is identified on Drawings.

1.3 WORK SEQUENCE

- A. The Work shall be completed in 1,000 calendar days commencing on July 5, 2023.
- B. The Work shall meet below sequencing requirement.
1. New Construction
 - a. Begin two new residential buildings on 7/5/2023
 - b. Complete two new residential buildings no later than 11/30/2024
 - c. Complete community building no later than 12/31/24
 2. Rehab
 - a. Begin with Buildings 10 and 11 as soon as you can.
 - b. Only one Townhome 4-plex can be empty for rehab at a time (Buildings 9, 15, 17, 19, 23).
 - c. Additional buildings will be made available for rehab as new units are placed in service post rehab and post new construction. To the extent that additional vacancies allow us to empty more buildings, we will make those buildings available for rehab.
 - d. Complete at least 54 units of rehab (including additional 3rd floor units) by 11/30/24
 - e. Complete at least 206 units of rehab (including all additional 3rd floor units) by 12/31/25
 - f. Complete all work by 3/31/26
 - g. The following buildings on each line are paired for purposes of new electrical transformers, so they should be rehabbed at the same time.
 - Building 2 Building 3
 - Building 4 Building 5
 - Building 6 Building 7
 - Building 10 Building 11
 - Building 13 Building 17
 - Building 15 Building 16
 - Building 18 Building 19
 - Building 20 Building 21
 - Building 22 Building 24
 - Building 23 Building 25
 - Building 26 Building 27
 - h. The order of buildings to be rehabbed after the first two is up to the contractor, although we need to be given at least 130 days' notice prior to the contractor needing the building so that we can give tenants adequate notice.

1.4 WORK BY OWNER

- A. Items noted NIC (Not in Contract) on the drawings.
- B. Items noted "By Owner" on the drawings.
- C. Fixtures, furniture, and equipment (FFE) unless identified on the drawings.

1.5 WORK UNDER OTHER CONTRACTS

- A. Separate Contract: Owner may award a separate contract for performance of certain construction operations at Project site. Those operations may be conducted simultaneously with work under this Contract.
- B. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract

1.6 OWNER SUPPLIED PRODUCTS

- A. Products furnished to site and installed "by Owner", and items furnished by Owner for installation by Contractor (FOIC) will be identified within these Contract Documents, or by addendum during the bid period, or by change proposal and change order after the signing of the Contract for Construction.
- B. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner-reviewed Shop Drawings, Product Data, and Samples, to Contractor.
 - 2. Arrange and pay for delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
 - 1. Review Owner-reviewed Shop Drawings, Product Data, and Samples.
 - 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install and finish products.
 - 4. Repair or replace items damaged after receipt.

1.7 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Construction Operations: Public rights-of-way beyond the property boundaries are not controlled by the Owner and, with the exception of specific work outside the property boundaries indicated on the drawings, may be used for construction purposes only if arranged by the Contractor.
- B. Use of Existing Building: Repair damage caused by construction operations. Protect property, the buildings, and occupants during construction period.
- C. Parking Policy: Contractor shall request construction related parking and Owner will review and monitor onsite parking to minimize impact to remaining residents. As work requirements change the parking and lay down areas will be reevaluated and adjusted as needed.
- D. Access Routes and Laydown/Staging Areas: Contractor shall coordinate location of all access routes and laydown/staging areas with Owner. Keep driveways and entrances serving premises clear and available to residents and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
- E. Utility Outages and Shutdown: To the extent that privately-owned adjacent properties are served by public utility companies, coordinate planned outages with those utility companies.
- F. Cleanup: Construction materials and areas shall be fenced off and secured at the end of each day. Debris shall be removed daily.

1.8 LIQUIDATED DAMAGES

- A. Liquidated damages will be assessed for each calendar day that the Contractor exceeds the time for substantial completion in the amount of \$2,000.

PART 2 PRODUCTS (not applicable)

PART 3 EXECUTION (not applicable)

END OF SECTION

SECTION 03 01 00
MAINTENANCE OF CONCRETE

PART 1 GENERAL ~~HAVE THE STRUCTURAL ENGINEER REVIEW THIS SECTION~~

1.1 SUMMARY

- A. Section includes concrete surface, crack, and reinforcement repair, or replacement, for existing sidewalks and curbs at the perimeter of this Work damaged during the work of this Contract.
- B. Related Sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories.
 - 2. Section 03 20 00 – Concrete Reinforcing.
 - 3. Section 03 30 00 - Cast-In-Place Concrete.
 - 4. Section 03 35 00 – Concrete Finishing.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - 3. ASTM A996/A996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.
 - 4. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 5. ASTM C109/C109M - Standard Test Method for Compressive strength of Hydraulic Cement Mortars (Using 2-in. or (50 mm) Cube Specimens).
 - 6. ASTM C150 - Standard Specification for Portland Cement.
 - 7. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
 - 8. ASTM C293 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam With Center-Point Loading).
 - 9. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
 - 10. ASTM C882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.
 - 11. ASTM C1042 - Standard Test Method for Bond Strength of Latex Systems Used With Concrete By Slant Shear.
 - 12. ASTM D638 - Standard Test Method for Tensile Properties of Plastics.
 - 13. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics.
 - 14. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- B. American Welding Society: AWS D1.4 - Structural Welding Code - Reinforcing Steel.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures.
- B. Product Data: Submit product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.

- C. Samples: Submit color samples for patches required to match existing.
- D. Submit mix designs for each separate application (sidewalks, curbs).
- E. Submit certification from manufacturer stating the percentage of recycled content material, identifying post-consumer and post-industrial contents, if applicable.
- F. Submit certification from manufacturer verifying the location of the manufacturer, including full address and phone number, and list of materials harvested, extracted or recovered within 500 miles of the project site, if applicable.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements.
- B. Project Record Documents: Accurately record actual locations of concrete repairs or replacements.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with City of Seattle Standards.
- B. Maintain one copy of documents on site.
- C. Perform welding work in accordance with AWS D1.4. Any welding must be performed by WABO certified welders.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator: Company specializing in concrete repair with minimum three years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Comply with instructions for storage, shelf-life limitations, and handling.

PART 2 PRODUCTS

2.1 EPOXY ADHESIVE INJECTION MATERIALS

- A. Furnish materials in accordance with King County or City of Seattle standards.
- B. Epoxy Adhesive: Two-part epoxy adhesive containing 100 percent solids, meeting the following minimum characteristics or those of King County Road Standards, whichever is greater:

Characteristic	Test Method	Results
Bond Strength	ASTM C882	2,700 psi
Tensile Strength	ASTM D638	6,600 psi
Elongation	ASTM D638	2 percent at 7 days, 70 degrees F
Flexural Strength	ASTM D790	8,000 psi
Compressive Strength	ASTM D695	6,500 psi

2.2 CONCRETE MATERIALS

- A. Refer to Section 03 30 00 Cast-In-Place Concrete.

2.3 REINFORCEMENT MATERIALS

- A. Refer to Section 03 20 00 Concrete Reinforcement. Match existing reinforcement size, strength, spacing.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify surfaces are ready to receive work.
- C. Beginning of installation means acceptance of existing surfaces.

3.2 PREPARATION

- A. Clean concrete surfaces of dirt, laitance, corrosion, or other contamination; wire brush using water; rinse surface and allow to dry.
- B. Remove concrete slab or curb entirely back to the nearest expansion joint. Removal of damaged concrete to the nearest crack control joint will not be approved.
- C. Clean exposed reinforcement steel surfaces. Mechanically cut away damaged portions of bar.
- D. Compact substrate soils to match density of existing soils prior to damage.

3.3 REPAIR AND REPLACEMENT WORK

- A. Any repair of reinforcing shall be coordinated with, and approved by, the jurisdiction or permitting authority in addition to the Engineer of Record.
- B. Repair reinforcement by welding new bar reinforcement to existing reinforcement with sleeve splices. Strength of welded splices and reinforcement to exceed original stress values.
- C. Replace damaged work to match existing in material, thickness, shape, color and finish.
- D. Replace expansion joint material as needed, matching material and color of existing joint materials.

3.4 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.
- B. Inspect reinforcement steel placement prior to casting concrete.
- C. Test concrete for compressive strength during pours.

3.5 WASTE MANAGEMENT

- A. Refer to 01 74 19 for additional information for Construction Waste Management and Disposal.

END OF SECTION

SECTION 03 20 00
CONCRETE REINFORCING

PART 1 GENERAL **HAVE THE STRUCTURAL ENGINEER REVIEW THIS SECTION**

1.1 SUMMARY

- A. Section includes reinforcing bars, welded wire fabric, fibrous reinforcement, and reinforcement accessories.
- B. Related Sections:
 - 1. Section 03 10 00 - Concrete Forming and Accessories.
 - 2. Section 03 30 00 - Cast-In-Place Concrete.
 - 3. Drawings sheets which include General Structural Notes.

1.2 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 318 - Building Code Requirements for Structural Concrete.
 - 3. ACI SP-66 - ACI Detailing Manual.
- B. ASTM International:
 - 1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A184/A184M - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
 - 3. ASTM A185-06 – Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
 - 4. ASTM A496 - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
 - 5. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
 - 6. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - 7. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - 8. ASTM A704/A704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.
 - 9. ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
 - 10. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
 - 11. ASTM A775/A775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.
 - 12. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement.
 - 13. ASTM A934/A934M - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
 - 14. ASTM A996/A996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.
 - 15. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars.

- C. American Welding Society: AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- D. Concrete Reinforcing Steel Institute:
 - 1. CRSI - Manual of Standard Practice.
 - 2. CRSI - Placing Reinforcing Bars.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate bar sizes, spacings, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices.
- C. Product literature: Fibrous concrete reinforcement products.
- D. Certificates: Submit AWS qualification certificate for welders employed on the Work.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements. Submit certified copies of mill test report of reinforcement materials analysis.
- F. Submit certification from manufacturer stating the percentage of recycled content material, identifying post-consumer and post-industrial contents, if applicable.
- G. Provide certification from manufacturer verifying the location of the fabricator for products of this Section. Include mailing address and phone number. Provide list of recovered or recycled steel within 500 miles of project site, if applicable.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with CRSI - Manual of Standard Practice, ACI 301, and ACI 318. In the event of conflict, notify the Architect.
- B. Prepare shop drawings in accordance with ACI SP-66.
- C. Maintain one copy of each document on site.
- D. No heating of reinforcement will be permitted. No bending of reinforcement after partial embedment in concrete will be permitted, unless otherwise noted or approved.

1.5 QUALIFICATIONS

- A. Welders: AWS qualified within previous 12 months. Welding to be performed by WABO Certified welders.
- B. No reinforcing may be welded except where noted.

1.6 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate with placement of formwork, formed openings and other Work.

PART 2 PRODUCTS

2.1 REINFORCEMENT

- A. All products: Refer to the General Structural Notes on the drawings.

2.2 ACCESSORY MATERIALS

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions, including load bearing pad on bottom to prevent vapor barrier puncture.
- C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic-coated steel type; size and shape to meet Project conditions.
- D. Epoxy Coating Patching Material: Type as recommended by coating manufacturer.

2.3 FABRICATION

- A. Fabricate concrete reinforcement in accordance with ACI 318-05.
- B. Form standard hooks for 180-degree bends, 90-degree bends, stirrup and tie hooks, and seismic hooks as indicated on Drawings.
- C. Form reinforcement bends with minimum diameters in accordance with ACI 318.
- D. Fabricate column reinforcement with offset bends at reinforcement splices.
- E. Weld reinforcement in accordance with AWS D1.4. No reinforcement may be welded except where noted.
- F. Locate reinforcement splices not indicated on Drawings, at point of minimum stress. Review location of splices with Architect/Engineer.

PART 3 EXECUTION

3.1 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position beyond specified tolerance.
- B. Do not weld crossing reinforcement bars for assembly except as permitted by Architect/Engineer.
- C. Do not displace or damage vapor retarder per Section 07 26 00.
- D. Accommodate placement of formed openings.
- E. Space reinforcement bars with minimum clear spacing in accordance with ACI 318 of one bar diameter, but not less than 1 inch. Where bars are indicated in multiple layers, place upper bars directly above lower bars.
- F. Splice reinforcing in accordance with structural drawings.

3.2 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.

- B. Install reinforcement within the following tolerances for flexural members, walls, and compression members:

Reinforcement Depth	Depth Tolerance	Concrete Cover Tolerance
Greater than 8 inches	plus or minus 3/8 inch	minus 3/8 inch
Less than 8 inches	plus or minus 1/2 inch	minus 1/2 inch

3.3 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Field inspection and testing will be performed by Owner's testing laboratory in accordance with ACI 318 and the Building Code.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Reinforcement Inspection:
1. Placement Acceptance: Specified and ACI 318 material requirements and specified placement tolerances.
 2. Welding Inspection Procedures and Acceptance: AWS D1.1.
 3. Periodic Placement Inspection: Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.
 4. Weldability Inspection: Inspect for reinforcement weldability when formed from steel other than ASTM A706/A706M.
 5. Continuous Weld Inspection: Inspect reinforcement as required by ACI 318.
 6. Periodic Weld Inspection: Other welded connections.

3.4 WASTE MANAGEMENT

- A. Refer to 01 74 19 for additional information for Construction Waste Management and Disposal.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL **HAVE THE STRUCTURAL ENGINEER REVIEW THIS SECTION**

1.1 SUMMARY **REVIEW RELATED SECTIONS BASED ON YOUR PROJECT**

- A. Section includes cast-in-place concrete and concrete finishing for the following:
 - 1. Footings.
 - 2. Foundation Walls.
 - 3. Retaining Walls.
 - 4. Slabs on Grade.
 - 5. Structural Slabs.

1.2 RELATED SECTIONS:

- A. Section 03 01 00 - Maintenance of Concrete.
- B. Section 03 10 00 - Concrete Forming and Accessories.
- C. Section 03 20 00 - Concrete Reinforcing.
- D. Section 03 35 00 – Concrete Finishing.
- E. Divisions 22 and 23: Mechanical items for casting into concrete.
- F. Division 26: Electrical items for casting into concrete.
- G. Division 32: Exterior Improvements.
- H. General Structural Notes.

1.3 REFERENCES

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 302.1 – Guide for Concrete Floor and Slab Construction.
 - 3. ACI 303R – Guide to Cast-in-Place Architectural Concrete.
 - 4. ACI 305 - Hot Weather Concreting.
 - 5. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 - 6. ACI 308.1 - Standard Specification for Curing Concrete.
 - 7. ACI 318 - Building Code Requirements for Structural Concrete.
- B. ASTM International:
 - 1. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - 2. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 4. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - 5. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
 - 6. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - 7. ASTM C150 - Standard Specification for Portland Cement.
 - 8. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
 - 9. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.

10. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
11. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
12. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
13. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
14. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
15. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
16. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
17. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
18. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
19. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
20. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
21. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
22. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
23. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
24. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
25. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
26. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
27. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
28. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
29. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
30. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
31. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
32. ASTM E1155 – Standard Test Method for Determining Floor Flatness and of Levelness Using the F-Numbering System.
33. ASTM E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
34. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on joint devices, attachment accessories, admixtures.
- C. Design Data:
 - 1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
 - a. Hot and cold weather concrete work.
 - b. Air entrained concrete work.
 - 2. Identify mix ingredients and proportions, including admixtures.
 - 3. Identify chloride content of admixtures and whether or not chloride was added during manufacture.
- D. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Submit proposed mix designs at least 15 days in advance of placing operations for each type of concrete. The submitted mix designs shall include the following:
 - a. The Concrete Mix Design Submittal Form is included in this specification. Either the "Field Experience Method Form" or the "Trial Batch Method Form" may be used. Fill out the forms in their entirety.
 - b. Supporting test data not more than 24 months old. At the Engineer's request, reports from the independent testing agencies may be required to document the test data.
 - c. Statistical analysis in compliance with ACI 301.
 - d. Gradation of fine and coarse aggregates not more than 90 days old (ASTM C 33). No substitution of aggregate type or size from those submitted will be permitted.
 - e. Proportions of all ingredients, including all admixtures added either at time of batching or at job site. Aggregate weights shall be based upon saturated surface dry conditions.
 - f. Water/cement ratio.
 - g. Slump (ASTM C 143): When high range water-reducing admixtures are used, slump before and after addition of admixture are required.
 - h. Air content of freshly mixed concrete (ASTM C 231).
 - i. Strength is measured at 3 (for post-tensioned concrete mixes), 7 and 28 days. For mixes with a 56-day acceptance strength, strength shall be measured at 7, 28 and 56 days. Strengths shall be as tested using 4" x 8" cylinders in accordance with ASTM C 31 and ASTM C 39.
 - j. Certification that all ingredients in each mix design are compatible.
 - k. Locations or intended use of each mix design.
 - l. Source of all materials.
- E. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials and aggregates. Include mill certificates for cement.
 - 2. Admixtures.
 - 3. Fiber reinforcement.

4. Waterstops.
 5. Curing compounds.
 6. Floor and slab treatments.
 7. Bonding agents.
 8. Adhesives.
 9. Vapor retarders.
 10. Semirigid joint filler.
 11. Joint-filler strips.
 12. Repair materials.
 - F. Minutes of preinstallation conference.
 - G. Shop Drawing: Submit scoring pattern of slab-on-grade.
 - H. Submit certification from manufacturer verifying the location of the manufacturer, including full address and phone number, and list of materials harvested, extracted or recovered within 500 miles of the project site, if applicable.
- 1.5 CLOSEOUT SUBMITTALS
- A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.
 - B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.
- 1.6 QUALITY ASSURANCE
- A. Perform Work in accordance with ACI 301, ACI 303R, and ACI 318.
 - B. Conform to ACI 305.1 when concreting during hot weather.
 - C. Conform to ACI 306.1 when concreting during cold weather.
 - D. Acquire cement and aggregate from one source for Work.
- 1.7 INSTALLER QUALIFICATIONS:
- A. An experienced installer who has completed concrete work similar in material, design and extent to that indicated for this project, and whose work has resulted in construction with a record of successful in-service performance. A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- 1.8 PREINSTALLATION CONFERENCE: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Coordination."
- A. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 1. Contractor's superintendent.
 2. Independent testing agency responsible for concrete design mixtures.
 3. Ready-mix concrete manufacturer.
 4. Concrete subcontractor.
 - B. Preinstallation conference shall include, but not be limited to, the following:
 1. Review of special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold

and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

- C. Batch Tickets: Provide batch tickets for each truckload of concrete used in the work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of cement and water introduced.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.
- B. Maintain concrete temperature after installation at minimum 50 degrees F for minimum 7 days.

1.10 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I or Type II. Type III cement may be used for cold weather construction.
- B. Normal Weight Aggregates: ASTM C33. Aggregates shall be free from any substance that may be deleteriously reactive with the alkalis in the cement in an amount sufficient to cause excessive expansion of the concrete. A minimum of 25% shall be post-consumer.
- C. Water: ACI 318; potable, without deleterious amounts of chloride ions.

2.2 WATER

- A. ACI 318; potable, without deleterious amounts of chloride ions. Do not use undocumented nonpotable water for concrete mixes.

2.3 ADMIXTURES

- A. Refer to the General Structural Notes: The use of admixtures is the responsibility of the Contractor, and only as approved by the Structural Engineer.
- B. Air Entrainment: ASTM C260. Master Builders "Micro-Air", Grace "Daravair", Sika "AEA-15", or approved equal.
 - 1. Verify with the manufacturers the use of air entrainment admixtures will not affect the alternate concrete floor finishes.

- C. Fly Ash: ASTM C618 Class F, maximum 20% by weight of all cementitious materials. Use fly ash from one single source for the entire project. Slag is not an acceptable alternate to fly ash.
 - 1. Verify with the manufacturers the use of fly ash will not affect the alternate concrete floor finishes.

2.4 ACCESSORIES

- A. Bonding Grout and repair materials: Use products in accordance with manufacturer's printed instructions.
 - 1. Manufacturers:
 - a. Portland Cement mortar modified with a latex acrylic, non-re-emulsified bonding agent conforming to ASTM C1059 Type II. Acceptable products include Euclid Chemical Co. "Flex-Con", Dayton "Day-Chem Ad Bond (J-40)".
 - b. Epoxy mortars and epoxy compounds that are moisture insensitive during application and after curing and that embody an epoxy binder conforming to ASTM C881.
 - c. Shrinkage-compensating or nonshrink Portland Cement grout conforming to ASTM C1107. Acceptable products include Master Builders "Masterflow 713 Grout", Dayton "Sure-Grip High Performance Grout", Burke "Non-Ferrous Non-Shrink Grout", or approved equal.
 - d. Packaged, dry concrete repair materials conforming to ASTM C928. Acceptable products include Master Builders "Emaco T415", Dayton "HD-50", Burke "Fast Patch 928", or approved equal.
 - e. Substitutions: Section 01 25 13 – Product Substitution Procedures.
- B. Underslab Vapor Barriers: refer to Section 07 26 00 – Underslab Vapor Barriers
- C. Dissipating Resin Curing Materials: liquid type membrane forming curing compound complying with ASTM C309, Type I. Curing compound must be of a type that does not inhibit subsequent moist curing operations. The film shall chemically break down in a two-to-four-week period and shall not affect adhesion of coverings or membranes. Acceptable products are Burke "RES-X Curing Compound", Euclid Chemical Co "Kurez DR", Dayton "Day-Chem Rez Cure (J-11-W)", or approved equal.
- D. Moisture retaining cover: waterproof sheet materials conforming to ASTM C171.
- E. Concrete Reinforcing Fibers: ASTM C1116, refer to the General Structural Notes on the drawings.
- F. Bentonite Waterstops: The products of Cetco, Volclay Waterstop-RX, expanding concrete joint waterstop, together with manufacturer's primer and adhesive. Refer to Section 03 10 00 and 07 17 00.

2.5 CONCRETE MIX

- A. See general structural notes for requirements at receiving moisture sensitive coverings and adhesives.
- B. Select proportions for normal weight concrete in accordance with ACI 318. Prepare mix designs for each type and strength of concrete. Concrete strength

is to be verified by submitting test data in accordance with 2018 IBC Section 1905 by Field Experience Method or, if available, by Laboratory Trial Batch Methods. Mix proportions shall produce consistent and workable concrete that can be worked readily into forms and around reinforcement without segregation or excessive bleeding.

1. Field Experience Method: if Field test data is available, in accordance with ACI 301, submit for acceptance the mixture proportions along with the field test data.
2. Trial Batch Method: Use an independent, qualified testing facility for preparing and reporting proposed mix designs. All expenses connected with such testing and submittals shall be borne by the Contractor.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.
- B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- C. Remove debris and ice from formwork, reinforcement, and concrete substrates.
- D. Remove water from areas receiving concrete before concrete is placed.

3.3 COORDINATION AND SEQUENCING

- A. Coordinate schedule with other trades where embedment's, attachments, or interferences occur.
- B. Schedule and sequence concrete work to coordinate with fabrication and delivery schedules for items to be embedded in concrete work.

3.4 FIELD MEASUREMENTS

- A. Verify that field measurements and conditions are as shown on drawings, shop drawings, or as instructed by Product Manufacturer.

3.5 REDESIGN

- A. Obtain written acceptance from the Architect/Structural Engineer for Contractor-initiated redesign or departures from that indicated by the Contract Documents.
- B. Bear costs for Contractor-initiated or construction error caused changes to type, form, system, or details of construction from those indicated by the Contract Documents.

- C. Pay the engineering fees required by the Structural Engineer to check the adequacy of such changes.

3.6 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301 and ACI 318.
- B. Notify testing laboratory minimum 24 hours prior to commencement of pouring operations.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, and vapor retarder sheet are not disturbed during concrete placement.
- D. Install underslab vapor barrier under interior slabs on grade in accordance with ASTM E1643. Lap joints minimum 6 inches and seal watertight using products and procedures recommended by the sheet manufacturer.
- E. Repair underslab vapor barrier damaged during placement of concrete reinforcing, following manufacturer's recommended procedures.
- F. Separate slabs on grade from vertical surfaces with ½" inch thick joint filler.
- G. Install construction joints and crack control joints after review with Architect. Set top to required elevations. Secure to resist movement by wet concrete.
- H. Deposit concrete at final position. Prevent segregation of mix.
- I. Place concrete in continuous operation for each panel or section determined by predetermined joints.
- J. Consolidate concrete.
- K. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- L. Place concrete continuously between predetermined expansion, control, and construction joints.
- M. Saw cut control joints within 12 hours after placing. Refer to structural drawings for requirements.
- N. Screed slabs on grade level, maintaining surface flatness of maximum 1/4 inch in 10 ft. Slope to drains as indicated, and slope to drain away from the building.
- O. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1/4 inch per foot nominal, or as otherwise indicated on drawings.

3.7 CONCRETE FINISHING

- A. Provide formed concrete walls with smooth formed finish. Form tie holes shall be expressed in the finished work; remove ties and fill holes neatly flush with surface.
- B. Light broom finish all exterior concrete slabs on grade.
- C. Provide Class 'B' per ACI 347 for all exposed (painted and non-painted) concrete surfaces; refer to plans and schedules.
- D. Provide Class 'B' per ACI 347 for all non-exposed concrete surfaces; refer to plans and schedules.

- E. Finish concrete floor surfaces in accordance with ACI 301 and ACI 318. In general:
 - 1. Screed to true levels and slopes.
 - 2. Tool all salient edges of concrete.
 - 3. Machine troweling permitted provided that maximum specified tolerance is not exceeded.
 - 4. Do not absorb water with neat cement.
 - 5. Make sharp arris at wall-to-floor conditions.
 - 6. Perform scoring indicated and/or specified. Maintain all control, construction, and expansion joints.
 - a. Coordinate scoring at courtyard with Tenant Improvement Architect before install.
- F. Edge forms and screeds: Set edge forms and intermediate screed strips accurately to produce designed elevations and contours in finished surfaces. Build sufficiently strong to support vibrating bridge screeds or roller type screeds if required for specified finish. Align concrete surface to contours of screed strips by use of strike-off templates or reviewed compacting type screeds. All concrete requiring finishing to be protected from rain or snow during finishing operations.
- G. Slab tolerance:
 - 1. Finish surfaces to the following tolerances, measured within 24 hours according to ASTM E1155 and ACI 302.1R (paragraph 8.15) for a randomly trafficked floor surface:
 - a. All floors other than those to receive thin-set flooring or resilient floor covering: Specified overall values of flatness, F(F)25, and levelness F(L)20; with minimum local values of flatness F(F)17, and levelness F(L)15.
 - b. Thin-set flooring, resilient floor covering: Specified overall values of flatness, F(F)35, and levelness F(L) 25; with minimum local values of flatness F(F)24, and levelness F(L)17.
 - c. If floors exceed these values, Contractor shall be responsible for any corrections.
 - 2. In mechanical spaces with equipment floor drains, maintain floor level and pitch to drains in a 12-inch radius.
 - 3. In rooms shown with floor areas sloping to drain, provide slope true to line and evenly graded.
- H. Finishes:
 - 1. Float finish: Apply float finish to monolithic slab surfaces that are to receive trowel finish and other finishes specified, and slab surfaces shown or scheduled for waterproofing and roofing.
 - 2. Scratch finish: Apply scratch finish to monolithic slab surfaces that are to receive mortar setting beds for pavers.
 - 3. Steel trowel finish those surfaces scheduled for carpeting, resilient flooring, and seamless flooring. Steel trowel those surfaces scheduled to be exposed, with no finish, and/or polished or bead-blasted finish.
 - a. Screed accurately to proper elevations without irregularities. Allow concrete time to bleed naturally before working. Float to compact plastic mass using motor driven metal disc type float. Do not overwork. Finish with a steel trowel, performing final troweling after surface is hard enough to ring under the trowel.

- b. Retain moisture in slab surface during finishing. Provide a fog spray over finish area in dry or windy weather. Have on hand a hose and spray nozzle.
 - c. Conform to surface flatness slab tolerance as noted above. Take special care to finish slab level and true with the main area of the slab around conduit, plumbing stacks, and the like. Use of dry cement to remove free water is prohibited.
 - d. Use trowel finish for all concrete surfaces not receiving a broomed or other specified finish, unless noted otherwise.
- 4. Broom finish: provide on all exterior concrete walking surfaces. Float finish and then score with a broom to produce a uniform texture perpendicular to the direction of traffic.
- I. Defective work: Correct defects in defined traffic floor by grinding or removal and replacement of defective Work. Areas requiring corrective Work will be identified. Re-measure corrected areas by same process.
- J. Promptly remove and replace, when directed to do so, slabs that show excessive shrinkage cracks, and any slabs that do not drain properly.

3.8 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure concrete in accordance with ACI 308.1. Cure floor surfaces in accordance with ACI 301.

3.9 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Field inspection and testing will be performed by Owner's testing laboratory in accordance with ACI 318, the 2015 SBC, and the permitting authority.
- C. Provide free access to Work and cooperate with appointed firm.
- D. Submit proposed mix design of each class of concrete to Structural Engineer for review prior to commencement of Work.
- E. Concrete Inspections:
 - 1. Reinforcing steel placement prior to concrete pours.
 - 2. Continuous Placement Inspection: Inspect for proper installation procedures.
 - 3. Periodic Curing Inspection: Inspect for specified curing temperature and procedures.
- F. Strength Test Samples:
 - 1. Sampling Procedures: ASTM C172.
 - 2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, standard cured.
 - 3. Sample concrete and make one set of five cylinders for every 150 cu yds or less of each class of concrete placed each day and for every 5,000 sf of surface area for slabs and walls.

4. When volume of concrete for any class of concrete would provide less than 5 sets of cylinders, take samples from five randomly selected batches, or from every batch when less than 5 batches are used.
5. Make one additional cylinder during cold weather concreting, and field cure.
- G. Field Testing:
 1. Slump Test Method: ASTM C143/C143M.
 2. Air Content Test Method: ASTM C173/C173M or ASTM C231.
 3. Temperature Test Method: ASTM C1064/C1064M.
 4. Measure slump and temperature for each compressive strength concrete sample.
 5. Measure air content in air entrained concrete for each compressive strength concrete sample.
- H. Cylinder Compressive Strength Testing:
 1. Test Method: ASTM C39.
 2. Test Acceptance: In accordance with ACI 318.
 3. Test one cylinder at 7 days.
 4. Test two cylinders at 28 days.
 5. Retain two cylinders for 56 days, or as otherwise requested by Architect/Engineer.
 6. Dispose remaining cylinders when testing is not required.
- I. Core Compressive Strength Testing:
 1. Sampling and Testing Procedures: ASTM C42/C42M.
 2. Test Acceptance: In accordance with ACI 318.
 3. As directed by Architect/Engineer, drill cores for each failed strength test from concrete represented by failed strength test.
- J. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.10 PATCHING

- A. Allow Architect to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect/Engineer upon discovery.
- C. Patch imperfections as directed by Architect/Engineer, and in accordance with ACI 301.

3.11 DEFECTIVE CONCRETE

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

3.9 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan. Refer to Section 01 74 19 for specific requirements.

END OF SECTION

SECTION 03 35 00
CONCRETE FINISHING

PART 1 GENERAL ~~HAVE THE STRUCTURAL ENGINEER REVIEW THIS SECTION~~

1.1 SUMMARY

- A. Section includes: sealing and polishing of new concrete floor slab as noted on the finish schedule.
- B. The Owner has established sustainability goals for this project, and this Section contains specific information and requirements for compliance. Refer to Section 01 81 13 for additional requirements.
- C. Related Sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories.
 - 2. Section 03 20 00 – Concrete Reinforcing.
 - 3. Section 03 30 00 – Cast-in-Place Concrete.
 - 4. Section 07 90 00 – Joint Protection.
 - 5. Drawings sheets that include General Structural Notes.

1.2 REFERENCES:

- A. American Concrete Institute:
 - 1. ACI 301 - Specifications for Structural Concrete.
 - 2. ACI 302.1 – Guide for Concrete Floor and Slab Construction.
 - 3. ACI 303R – Guide to Cast-in-Place Architectural Concrete.
 - 4. ACI 305 - Hot Weather Concreting.
 - 5. ACI 306.1 - Standard Specification for Cold Weather Concreting.
 - 6. ACI 308.1 - Standard Specification for Curing Concrete.
 - 7. ACI 318 - Building Code Requirements for Structural Concrete.
- B. ASTM International:
 - 1. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - 2. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 4. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - 5. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
 - 6. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - 7. ASTM C150 - Standard Specification for Portland Cement.
 - 8. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
 - 9. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 - 10. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - 11. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
 - 12. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.

13. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
14. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
15. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
16. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
17. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
18. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
19. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
20. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
21. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
22. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
23. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
24. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
25. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
26. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
27. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
28. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
29. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
30. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
31. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
32. ASTM E1155 - Standard Test Method for Determining Floor Flatness and of Levelness Using the F-Numbering System.
33. ASTM E1643 - Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
34. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 00.
- B. Product data and manufacturer's instructions for sealing and curing compounds, and proprietary cleaning agents.

- C. Submit certification from manufacturer stating the VOC content (in grams per liter) for each product used.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: See referenced codes, ordinances, and the like per Section 01 41 00.
- B. Installer Qualifications: To be "Specialist" as defined in Section 01 10 00 and be authorized by the Manufacturer for installation of the system. Installer to have minimum five years documented experience in work similar in scope and quality to the work of this section.
- C. Refer to Section 03 30 00 for general quality assurance provisions for cast-in-place concrete work.
- D. Obtain all materials of this section from the same source and maintain a high degree of consistency in workmanship throughout.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Conform to requirements of section 01 60 00, the manufacturer's instructions, and the following:
 - 1. Comply with manufacturer's instructions. Deliver materials to the jobsite in original unopened containers. Store in dry conditions, with temperature and humidity controlled as per manufacturer's instructions.

1.6 SEQUENCING/SCHEDULING

- A. Phase in properly with Architect reviewed and accepted Progress Schedule, Section 01 32 16.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Apply products when air and surface temperatures are between 40 deg. F and 90 deg. F during application and a minimum of 48 hours after application, and in accordance with manufacturer requirements.

PART 2 PRODUCTS

2.1 GENERAL QUALIFICATIONS

- A. Comply with "Quality Assurance" provisions, "References", specifications and manufacturer's directions. Where these may be in conflict, the more stringent requirements govern.
- B. Refer to general structural notes for additional requirements at concrete to receive moisture sensitive coverings and/or adhesives.

2.2 MANUFACTURERS AND PRODUCTS

- A. Listed manufacturer: Rochester Midland Corporation. Also accepted: the product systems of L.M. Scofield Company.
- B. The manufacturers of other products may be accepted by the Architect upon substitution request per Section 01 25 13.

- C. Rochester Midland Corporation floor finishes and seals, a ready to use, penetrating, floor finish that dries and is polished on the surface to create a, transparent gloss appearance.

2.3 RELATED MATERIALS

- A. Concrete cleaner: Rochester Midland Enviro Care All Purpose Cleaner, a biodegradable, natural, citrus-based, enzyme solvent cleaner. Product to be free of acids and petroleum-based chemicals.
- B. Concrete floor sealer: Rochester Thermo Seal clear, non-yellowing product approved by the manufacturer and compatible with the floor cleaner and the finish.
- C. Concrete floor wax: Rochester Midland Ultra Marathon Floor Seal/Finish clear, non-yellowing product approved by the manufacturer and compatible with the floor stain and the sealer.

PART 3 EXECUTION

3.1 INSPECTION

- A. Verify installation conditions as satisfactory to receive work of this section. Do not install until any unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions as satisfactory.

3.2 PREPARATION

- A. Prepare surface and apply concrete floor finish after other interior finish work is complete, and prior to the installation of baseboards.
- B. Protect walls, adjacent surfaces and surrounding areas from overspray, runoff, and contact with concrete floor finish.
- C. New concrete:
 - 1. Place concrete per Section 03 30 00.
 - 2. Do not apply curing compounds, sealers or water repellants to concrete surface.
 - 3. Remove excess release agents.
 - 4. Allow concrete to cure a minimum of 28 days, or per manufacturer's requirements. Coordinate with Architect.
 - 5. Any compounds, sealers, etc, shall be compatible with concrete coverings and adhesives.
- D. Ensure that concrete surface is clean, dry, structurally sound and free from dirt, dust, debris, oil, adhesives, paint, curing compounds, sealers, wax and other surface coatings.
- E. Concrete cleaner:
 - 1. Dilute and apply concrete cleaner in accordance with manufacturer's printed instructions to clean concrete.
 - 2. Rinse surface clean with water to remove concrete cleaner residue.
 - 3. Allow concrete to dry prior to applying concrete floor finish.
- F. Testing concrete: test concrete by wetting with water to see if beads form on the surface. If water beads on the surface, additional surface preparation is required.
- G. Do not use acid to pre-clean concrete.

3.3 INSTALLATION

- A. Concrete cleaner:
 - 1. Dilute and apply concrete cleaner in accordance with manufacturer's instructions to neutralize stain residue left after stain has dried.
 - 2. Rinse surface clean with water to remove cleaner residue.
- B. Concrete floor sealer: Seal concrete with floor sealer after it is completely dry. Apply floor sealer in compliance with manufacturer's instructions. Allow first coat to dry before applying the second coat.
- C. Concrete floor finish: Apply and buff floor sealer in compliance with manufacturer's instructions. Allow first coat to dry before applying the second coat.
- D. Install protection board to completely cover concrete in polished areas. Scribe and cut boards around projections and penetrations.

3.4 PROTECTION

- A. Protect the concrete during its curing period, prior to the application of products of this section. Restrict the foot traffic from other trades during this period.
- B. Protect the concrete surface from foot traffic for a minimum of 24 hours after application of floor sealer and wax.
- C. Consult with the manufacturer's representative prior to placing protective papers or traffic pads on the surface following completion of this work. Do not allow products to cover the concrete surface that could inhibit the curing of stain products, or stain the finished surface.

3.5 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan. Refer to Section 01 74 19 for specific requirements.

END OF SECTION

SECTION 05 51 00
METAL STAIRS

PART 1 GENERAL ~~HAVE THE STRUCTURAL ENGINEER REVIEW THIS SECTION~~

1.1 SUMMARY

- A. Section includes the design and pre-fabrication of metal stairs – Service class; with anchors and brackets.
- B. The Owner has established sustainability goals for this project, and this Section contains specific information and requirements for compliance. Refer to Section 01 81 13 for specific requirements.
- C. Related Sections:
 - 1. Section 03 30 00 - Cast-In-Place Concrete.
 - 2. Section 09 90 00 - Painting and Coating.
 - 3. General Structural Notes on the drawings.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- B. ASTM International (ASTM):
 - 1. ASTM A6/A6M – Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling.
 - 2. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
 - 3. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 4. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - 5. ASTM A325 - Standard specification for structural bolts, steel, heat treated, 120/105 ksi minimum tensile strength.
 - 6. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - 7. ASTM A501 - Standard specification for hot-formed welded and seamless carbon steel structural tubing.
 - 8. ASTM A513/A513M - 12 Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing.
 - 9. ASTM A786/A786M – Standard Specification for Hot-Rolled Carbon, Low-Alloy, High Strength Low-Alloy, and Alloy Steel Floor Plates.
 - 10. ASTM A1044/A1044M - Standard specification for steel stud assemblies for shear reinforcement of concrete (Embedded weld connections).
 - 11. ASTM A1008/A1008M – Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
 - 12. ASTM A1011/A1011M – Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High Strength Low-Alloy with Improved Formability, and Ultra-High Strength.

- C. American Welding Society:
 - 1. AWS D1.1 - Structural Welding Code.
 - 2. AWS D1.3 - Structural Welding Code – Sheet Steel
- D. Green Seal:
 - 1. GC-3 - Environmental Criteria for Anti-Corrosive Paints.
- E. National Association of Architectural Metal Manufacturers:
 - 1. NAAMM AMP 510 - Metal Stairs Manual.
 - 2. NAAMM MBG 531 - Metal Bar Grating Manual.
- F. National Ornamental & Miscellaneous Metals Association: Guideline 1.
- G. SSPC: The Society for Protective Coatings:
 - 1. SSPC - Steel Structures Painting Manual.
 - 2. SSPC SP 3 – Power Tool Cleaning.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal requirements.
- B. Develop/submit stair loads and attachment concepts/IMBEDS, affecting adjacent building components, for review/approval by Structural Engineer. NOTE: COORDINATE TIMING OF THIS SUBMITTAL AS REQUIRED FOR REVIEW/APPROVAL AND FABRICATION OF IMBEDS PRIOR TO PLACEMENT OF AFFECTED AREAS OF CONCRETE.
- C. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Methods of installation, including erection drawings, elevations, details and setting diagrams. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
 - 1. Design, and ultimate fabrication, to include all stair components, including landings and attachment components.
 - 2. Submit calculations stamped by a structural engineer licensed in Washington State.
- D. Verification Samples for Tread: For each finished tread product specified, two samples, minimum size 6 inches square, representing actual product
- E. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 12 months.
- F. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 - 1. Materials Resources Certificates:
 - a. Certify source for local and regional materials and distance from Project site.
 - 2. Indoor Air Quality Certificates:
 - a. Certify volatile organic compound content for field applied interior paints and coatings.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM E985 - Permanent Metal Railing Systems and Rails for Buildings.

- B. Structural Performance of Stairs: Stairs shall withstand the following structural loads without exceeding the allowable design working stress of materials, including anchors and connections. Apply each load to produce the maximum stress in each component:
 - 1. Treads and Platforms of Metal Stairs: Capable of withstanding a uniform load of 100 lb/sf and concentrated load of 300 lbf applied on an area of 4 square inches. Concentrated and uniform loads need not be assumed to act concurrently.
 - 2. Stair Framing: Capable of withstanding stresses resulting from loads specified in addition to stresses resulting from railing system loads.
 - 3. Limit deflection of treads, platforms and framing members to L/240 or 1/4 inch, whichever is less.
 - 4. Comply with Seattle Building Code for stair tread and riser dimensions; 7" maximum rise, and 11" minimum run.
- C. Stair systems are designed and fabricated to resist seismic events in compliance with ASCE 7-05 Section 9.5.2.8, and IBC section 1613 unless directed to design to more stringent requirements in this Section or the Structural Notes (on drawings).
- D. Finish joints in accordance with NOMMA Guideline 1 – Finish 3.
- E. Sustainable Design Requirements in accordance with Section 01 81 13.
- F. Convene minimum one week prior to commencing work of this section.

1.5 QUALIFICATIONS

- A. Manufacturer:
 - 1. Firm having 5 years' experience manufacturing components similar to or exceeding requirements specified in scope of project.
 - 2. Have sufficient capacity to produce and deliver required materials and assemblies without causing delay in the Work.
 - 3. Single source responsibility: Provide components and materials specified in this Section from a single AISC certified manufacturer.
- B. Prepare Shop Drawings under direct supervision of Professional Engineer experienced in design of this Work and licensed in the State of Washington.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Accept metal fabrications on site in labeled shipments. Inspect for damage.
- C. Protect metal fabrications from damage by exposure to weather.

1.7 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 PRE-FABRICATED METAL STAIRS

- A. Manufacturers:
 - 1. Pacific Stair Corporation; 8690 Stair Way NE; Salem, Oregon 97305.
 - 2. American Stair Corp.
 - 3. Substitutions: Section 01 60 00 - Product Requirements.

2.2 COMPONENTS

- A. Stair assemblies to include the following; metal framing, hangers, struts, railings, clips, brackets, bearing plates and other components necessary to support and anchor stairs and platforms to the supporting structure. Components joined by welding unless otherwise noted.
 - 1. Stringers: 14ga (minimum) galvanized steel plate with medium pattern.
 - 2. Treads and (closed) Risers:
 - a. Checkered plate, welded to stringer.
 - b. Sloped riser with rounded nosing of minimum radius.
 - 3. Landings: Similar to stair construction.
- B. Embedded Weld Connections:
 - 1. Steel angle: Standard sizes, 3" x 2" x $\frac{1}{4}$ ", 4" x 4" x $\frac{1}{4}$ ".
 - 2. Steel plate: Standard sizes, 4 x 10" x $\frac{1}{4}$ ", 12" x 12" x $\frac{1}{4}$ ".
 - 3. Headed weld studs: $\frac{1}{2}$ " dia, x 4".
 - 4. Welding Materials: AWS D1.1; type required for materials being welded.
- C. Embedded Weld Connections:
 - 1. Steel angle: Standard sizes, 3" x 2" x $\frac{1}{4}$ ", 4" x 4" x $\frac{1}{4}$ ".
- D. Fasteners:
 - 1. Hilti Kwik Bolt TZ 5/8" dia. X 6" (Concrete anchors).
 - 2. Hilti Kwik Bolt KB3 5/8" dia. X 6" (CMU anchors).
 - 3. 5/8" x 1.5" A325 Tension control bolts.
 - 4. 5/8" x 4.5" A307 MB for tube steel posts.

2.3 FABRICATION

- A. Fabricate stair assembly to NAAMM AMP 510, Service Class.
 - 1. Embedded weld connections.
- B. Fit and shop assemble items in largest practical sections, for delivery to site.
- C. Fabricate items with joints tightly fitted and secured.
- D. Continuously seal joined members by continuous welds.
- E. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- F. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

- G. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.4 FACTORY APPLIED FINISHES - STEEL

- A. Clean surfaces of rust, scale, grease, and all foreign matter prior to finishing.
- B. Factory prime all steel items with one coat except:
 - 1. Do not prime surfaces in direct contact with concrete
 - 2. Do not prime surfaces where field welding is required.
 - 3. Do not prime surfaces where galvanizing is specified.
- C. Factory primed finishes to be compatible with final surface finishes.
- D. For steel fabrications with site painting indicated on the drawings, refer to Section 09 90 00 - Painting and Coating.

2.5 FABRICATION TOLERANCES

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

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

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

3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.
- C. Field weld components indicated on design drawings or shop drawings.
- D. Perform field welding in accordance with AWS D1.1.
- E. Obtain approval of Architect/Engineer prior to site cutting or making adjustments not scheduled.

- F. After erection, touch up welds, abrasions, and damaged finishes with prime paint or galvanizing repair paint to match shop finishes.

3.4 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation From Plumb: 1/4" per story or for every 12 ft in height whichever is greater, non-cumulative.
- C. Maximum Offset From Alignment: 1/4".
- D. Maximum Out-of-Position: 1/4".

3.5 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan. Refer to Section 01 74 19 for specific requirements.

END OF SECTION

SECTION 06 17 33
WOOD I-JOISTS

PART 1 GENERAL **HAVE THE STRUCTURAL ENGINEER REVIEW THIS SECTION**

1.1 SUMMARY

- A. Section includes engineered wood chord and web joists for roof and floor framing; bridging, bracing and anchorage, and framing for openings.
- B. The Owner has established sustainability goals for this project, and this Section contains specific information and requirements for compliance. Refer to Section 01 81 13 for specific requirements.
- C. Related Sections:
 - 1. Section 06 10 00 - Rough Carpentry.
 - 2. General Structural Notes on the drawings.

1.2 REFERENCES

- A. APA-The Engineered Wood Association: APA/EWA TB 200 - Fire Retardant Treated Plywood.
- B. American Wood-Preservers' Association: AWWPA C1 - All Timber Products - Preservative Treatment by Pressure Process.
- C. ASTM International:
 - 1. ASTM D2559 - Standard Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions.
 - 2. ASTM D5055 - Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists.
 - 3. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate sizes and spacing of joists, fastener description and spacings, loads, and framed opening details. Indicate manufacturer's criteria for size and location of penetrations through the web members.
- C. Product Data: Submit joist configurations, bearing and anchor details, and bridging and bracing details.
- D. Assembly Tests: Submit data on proprietary floor/ceiling assemblies. Coordinate with Sections 09 21 16. Data must show compliance with fire rating and acoustical requirements.
- E. VOC limits for field applied materials: Include manufacturer's literature for each adhesive, coating and sealant used in this Section identifying VOC limits and chemical components.

- F. Submit certification from manufacturer verifying the location of the manufacturer, including full address and phone number, and list of materials harvested, extracted or recovered within 500 miles of the project site.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. I-Joist Quality Assurance Agency.
 - 2. General Structural Notes on the drawings.
- B. Joist Structural Capacities: Determine in accordance with ASTM D5055.
- C. Refer to general structural notes.
- D. Joists detailed and installed in accordance with current National Evaluation Report or ICBO Engineering Service Report.
- E. Fire Rated Floor and Roof Construction: Rating as indicated on Drawings.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.
- B. Design joists and associated components under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Washington.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Protect structural components from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 PRODUCTS

2.1 PLYWOOD I JOISTS

- A. Manufacturers:
 - 1. Weyerhaeuser Engineered Stand Products.
 - 2. As otherwise listed in the General Structural Notes on the drawings.
 - 3. Substitutions: Section 01 25 13 - Product Substitution Procedures.

2.2 MATERIALS

- A. Comply with the materials and sizes shown on the Structural drawings and in the General Structural Notes.
- B. Tropical woods will **not** be accepted unless FSC-certified.

2.3 ACCESSORIES

- A. Adhesive: ASTM D2559, waterproof.
- B. Fasteners and Anchors: Refer to Section 06 10 00 - Rough Carpentry.

2.4 FABRICATION

- A. Fabricate joists to achieve structural requirements specified.
- B. Brace members for support during transit.
- C. Fabricate bottom and/or top chord extensions as indicated on Drawings.
- D. Frame special sized openings in web as indicated on Drawings.

2.5 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing, inspection and analysis requirements.
- B. When fabricator is approved by authority having jurisdiction, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents. Specified shop inspections are not required for Work performed by approved fabricator.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify supports and openings are ready to receive joists.

3.2 PREPARATION

- A. Coordinate placement of bearing and/or support items.

3.3 ERECTION

- A. Set structural members level and plumb, in correct position.
- B. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in alignment until completion of erection and installation of permanent bracing.
- C. Do not field cut or alter structural members without approval of Architect/Engineer.
- D. Place headers and supports to frame openings.
- E. Frame openings between joists with lumber in accordance with Section 06 10 00 and the structural drawings.
- F. Coordinate placement of decking and/or sheathing with Work of this section.

3.4 SITE APPLIED WOOD TREATMENT

- A. Refer to Section 06 10 00 - Rough Carpentry.

3.5 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Framing Members: 1/2 inch maximum, from indicated position.

3.6 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan. Refer to Section 01 74 19 for specific requirements.

END OF SECTION

SECTION 06 18 00
GLUED-LAMINATED CONSTRUCTION

PART 1 GENERAL **HAVE THE STRUCTURAL ENGINEER REVIEW THIS SECTION**

1.1 SUMMARY

- A. Section includes:
 - 1. Glued laminated timber beams and steel connections.
- B. Performance Requirements:
 - 1. The Owner has established environmental goals for this project, and this Section contains specific information and requirements for compliance. Refer to Section 01 81 13 for general requirements.
 - 2. Engineered lumber must contain no added urea formaldehyde per ESDS 7.1.
- C. Related Sections:
 - 1. Section 05 50 00 - Metal Fabrications.
 - 2. Section 06 10 00 - Rough Carpentry.
 - 3. Section 09 90 00 - Painting and Coating.
 - 4. General Structural Notes on the drawings.

1.2 REFERENCES

- A. American Institute of Timber Construction:
 - 1. AITC A190.1 - Wood Products - Structural Glued Laminated Timber.
- B. ASTM International:
 - 1. ASTM D2559 - Standard Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions.
- C. American Wood-Preservers' Association:
 - 1. AWPA C28 - Standard for Preservative Treatment of Structural Glued Laminated Members and Lamination Before Gluing of Southern Pine, Coastal Douglas Fir, Hemfir and Western Hemlock by Pressure Processes.
- D. National Fire Protection Association: NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Action Submittals:
 - 1. Shop Drawings: Indicate framing system, sizes and spacing of members, loads and cambers, bearing and anchor details, bridging and bracing.
 - 2. Product Data: Submit beam configurations, bearing and anchor details, and bridging and bracing details. Product data must certify that the engineered wood contains no added urea formaldehyde
 - 3. Product Data: For installation adhesives and sealants provide printed statement of VOC content. VOC content will be reviewed for compliance with Section 01 81 13.
- C. Informational Submittal:
 - 1. Environmental Product Declaration if available.

1.4 QUALITY ASSURANCE

- A. Surface Burning Characteristics: Fire Retardant Treated Materials: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
- B. Apply label from agency approved by authority having jurisdiction to identify each fire retardant treated material.
- C. Qualifications:
 - 1. Manufacturer/Fabricator: Company specializing in manufacture of glue laminated structural units with minimum three years' experience, and certified by AITC in accordance with ANSI A190.1
 - 2. Erector: Company specializing in erection of this Work with minimum three years documented experience.

1.5 WARRANTY

- A. One year standard warranty on product and workmanship.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Protect members to AITC or APA/EWS requirements for individually wrapped units.
- C. Leave individual wrapping in place until finishing occurs.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Manufacturers:
 - 1. Manufacturer must be an AITC licensed firm qualified to apply the AITC "Quality Inspected" mark.
 - 2. Grade Mark: All glued-laminated units shall bear the AITC "Quality Inspected" grademark including product grade and name of manufacturer.
- B. Materials: according to the General Structural Notes on the drawings.

2.2 FABRICATION

- A. Fabricate glue laminated structural members in accordance with AITC or APA/EWS.
- B. Verify dimensions and site conditions prior to fabrication.
- C. Cut and fit members accurately to length to achieve tight joint fit.
- D. Camber: according to the General Structural Notes on the drawings.
- E. Do not splice or join members in locations other than those indicated without permission.
- F. Protection: opaque, weather-resistant wrapping applied at the manufacturing facility, and left in place until adjacent finishes have been applied in the field.
- G. After end trimming, do not seal.
- H. Field Finishing of Members: Specified in Section 09 90 00 - Painting and Coating.

- I. Engineered wood should contain no added urea formaldehyde

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify supports are ready to receive units.
- C. Verify sufficient end bearing area.

3.2 PREPARATION

- A. Coordinate placement of bearing/support items.

3.3 ERECTION

- A. Lift members using protective straps to prevent visible damage.
- B. Set structural members level and plumb, in correct positions or sloped where indicated.
- C. Install temporary bracing and anchorage to hold members in place until permanently secured. Make no holes or markings that will be visible in the finished work.
- D. Fit members together accurately without trimming, cutting, or other unauthorized modification.
- E. Keep protective wrapping in place until adjacent finishes have been applied.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Framing Members: 1/2" maximum from indicated position.

3.5 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan. Refer to Section 01 74 19 for specific requirements.

END OF SECTION

SECTION 07 17 00
BENTONITE WATERPROOFING

HAVE THE ENVELOPE CONSULTANT REVIEW THIS SECTION; COORDINATE WITH EXTERIOR DETAILS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes waterproofing system and prefabricated drainage composite system to prevent the passage of liquid water and install without defects, damage or failure. Waterproofing shall be two high strength geotextiles interlocked encapsulating minimum 1.0-lbs per square foot granular sodium bentonite.
- B. Related Sections:
 - 1. Section 00 31 32 – Geotechnical Data.
 - 2. Section 03 10 00 – Concrete Forming and Accessories.
 - 3. Section 03 30 00 - Cast-In-Place Concrete.
 - 4. Section 07 21 13 - Board Insulation.
 - 5. Section 07 62 00 – Sheet Metal Flashing and Trim.
 - 6. Section 07 90 00 – Joint Protection.
 - 7. Division 22 – Plumbing.
 - 8. Division 26 – Electrical.
 - 9. Division 31 – Earthwork.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM D5385 – Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes.
 - 2. ASTM D5084-16a – Standard Test Methods for Measurements of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.
 - 3. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
 - 4. ASTM D4833 – Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.
 - 5. ASTM D1970 – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 - 6. ASTM D903 – Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
- B. National Roofing Contractors Association: NRCA - The NRCA Waterproofing and Dampproofing Manual.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit manufacturer's product data, with complete general and specific installation instructions, recommendations, and limitations. Include manufacturer's applicable installation details.

- C. Product Samples: Submit representative samples of the following for approval:
 - 1. Voltex DS waterproofing membrane
 - 2. Aquadrain 100BD Base Drain and Aquadrain 15XP Prefabricated drainage composite
- D. Shop Drawings: Submit shop drawings that include standard and non-standard manufacturer's details as applicable to this project. Also, show the extend of intended waterproofing on the drawing.
- E. Waterproofing Material and Labor Warranty: At time of bid, submit a sample copy of the Manufacturer's Waterproofing warranty complete with all coverage's, limitations, terms and conditions.
- F. Material Certificates: Submit certificate(s) signed by manufacturer certifying materials comply with specified performance characteristics and physical requirements. Submit certification that waterproofing system and components, drainage and protection materials are supplied by a single-source manufacturer.
- G. Contractor Certificate: At time of bid, submit written certification that installer has current Approved Applicator status with waterproofing material manufacturer.

1.4 QUALIFICATIONS

- A. Installer Qualifications: Installing company should have at least three (3) years experience in work of the type required by this section, who can comply with manufacturer's warranty requirements, and who is an Approved Applicator as determined by waterproofing/drainage system manufacturer.
- B. Manufacturer Qualifications: Waterproofing membranes and all accessory products shall be provided by a single manufacturer with a minimum of 30 years experience in the direct production and sales of waterproofing systems. Manufacturer shall be capable of providing field service representation during construction, approving an acceptable installer, and recommending appropriate installation methods.
- C. Materials: Obtain waterproofing membrane with accessory products and prefabricated drainage materials from a single manufacturer to assure material compatibility.
- D. Certification must evident that all materials are supplied by a single source manufacturer.

1.5 PRE-INSTALLATION MEETINGS

- A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.
- B. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field installation to establish procedures to maintain required working conditions and to coordinate this work with related and adjacent work. Verify that final waterproofing and waterstop details comply with waterproofing manufacturer's current installation requirements and recommendations. Pre-con meeting attendees should include representatives for the owner, architect, building envelope consultant, general contractor, waterproofing contractor, concrete contractor, excavating/backfill contractor, and mechanical and electrical contractors if work penetrates the waterproofing.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Delivery and Handling: Deliver materials in factory sealed and labeled packaging. Sequence deliveries to avoid delays, while minimizing on-site storage. Handle and store following manufacturer's instructions, recommendations and material safety data sheets. Protect from construction operation related damage, as well as, damage from weather, excessive temperatures and prolonged sunlight. Remove damaged material from site and dispose of in accordance with applicable regulations.
- C. Storage: Do not double-stack pallets during shipping or storage. Protect waterproofing materials from moisture, excessive temperatures and sources of ignition. Provide cover, top and all sides, for materials stored on-site, allowing for adequate ventilation.

1.7 PROJECT CONDITIONS

- A. Substrate Condition: Proceed with work only when substrate construction and preparation work is complete and in condition to receive waterproofing system. Testing of soil and water, if present, from base of excavation by manufacturer to determine if contaminant resistant products are necessary. All plumbing, electrical, mechanical and structural items to be under or passing through the waterproofing shall be positively secured in their proper positions prior to waterproofing system installation. Substrate preparation shall be per waterproofing manufacturer's guidelines.
- B. Weather Conditions: Perform work only when existing and forecasted weather conditions are within the guidelines established by the manufacturer of the waterproofing materials. Do not apply waterproofing materials in areas of standing or active water; or over ice and snow. Though exposure to precipitation and ground water seepage typically will not adversely affect Voltex, the General Contractor shall maintain site conditions to remove standing water from precipitation or ground water seepage in a timely manner. Should Voltex be subjected to pre-hydration as a result of prolonged immersion, inspection of the material and written acceptance from CETCO is required prior to concrete or backfill placement.

1.8 WARRANTY

- A. Section 01 70 00 - Execution and Closeout Requirements: Product warranties and product bonds.
- B. Furnish manufacturer's standard materials 5-year warranty for waterproofing failing to resist penetration of water.
- C. For warranty repair work, General Contractor shall coordinate removal and replacement of materials concealing waterproofing.

PART 2 PRODUCTS

2.1 BENTONITE WATERPROOFING

- A. All components must be single source from membrane manufacturer to ensure system compatibility.
- B. System Description: Provide waterproofing system and prefabricated drainage composite system to prevent the passage of liquid water and install without defects, damage or failure. Waterproofing shall be two high strength geotextiles interlocked encapsulating minimum 1.0-lbs per square foot granular sodium bentonite.
- C. Listed Manufacturer and Product:
 - 1. CETCO – Building Materials Group, 2870 Forbs Avenue, Hoffman Estates, Illinois 60192, 800-527-9948
 - a. Voltex DS waterproofing membrane and accessory products.
- D. Manufacturers Products also accepted:
 - 1. Carlisle CCW MiraClay;
 - 2. Substitutions: Section 01 25 13 – Product Substitution Procedures.

2.2 COMPONENTS

- A. VOLTEX DS MEMBRANE: 4' x 15' (1.2 x 4.5m) roll of interlocked geotextiles encapsulating a minimum 1.10-lbs per square foot (5.37 kg/sqm) of granular sodium bentonite. Composite shall consist of one woven and one nonwoven polypropylene geotextile, interlocked using a needle-punching process that produces several interlocks per square inch (6.5 sq cm) over the entire area of the product.
- B. **Alternative to 2.2.A. if contaminants are found during excavation.** VOLTEX DSCR MEMBRANE: 4' x 15' (1.2 x 4.5m) roll of interlocked geotextiles encapsulating a minimum 1.10-lbs per square foot (5.37 kg/sqm) of contaminant resistant granular sodium bentonite. Composite shall consist of one woven and one nonwoven polypropylene geotextile, interlocked using a needle-punching process that produces several interlocks per square inch (6.5 sq cm) over the entire area of the product.

Voltex DS performance properties:

PROPERTY	TEST METHOD	TYPICAL VALUE
Hydrostatic Pressure Resistance	ASTM D 5385 mod.	231 ft. (70 m)
Permeability	ASTM D 5084	1×10^{-10} cm/sec.
Grab Tensile Strength	ASTM D 4632	120 lbs. (530 N)
Puncture Resistance	ASTM D 4833	140 lbs. (620 N)
Low Temperature Flexibility	ASTM D 1970	Unaffected at -25°F (-32°C)
Peel Adhesion to Concrete	ASTM D 903 mod.	15lbs. /in. (2.6 kN/m)
Bentonite Mass per Unit Area	ASTM D 3776 mod.	1.0lb/sqft (4.8kg/sqm)
Water Vapor Transmission Rate	ASTM E 96	0.03 grains per hour/ft ²

- 2.3 ACCESSORIES: All accessory waterproofing materials shall be provided by the waterproofing manufacturer or shall have manufacturer's written approval for substitution.
- A. Bentoseal®: Trowel grade detailing mastic
 - B. Hydrobar Tubes: 2" (50 mm) diameter x 2' (60 cm) long, water soluble tube container filled with active granular sodium bentonite
 - C. Waterstoppage®: 50 lbs. (22.7 kg) bag of active granular sodium bentonite.
 - D. SeamTape®: 2" (50 mm) wide butyl rubber sealant tape.
 - E. Termination Bar: Min. 1/8" thick by 1" (25 mm) wide stainless steel or aluminum termination bar with pre-punched holes punched 6" (150 mm) on center for fastening.
 - F. Cementitious Wall Board: 1/2" thick cementitious board for protection of waterproofing during the removal of metal soldier pile cap and top lagging boards.
 - G. CETSEAL – single-component polyether general sealant and adhesive
 - H. TB-Boots – pre-formed, single piece thermoplastic cover for tie-back heads and soil nails. Three sizes available: TB-6SN, TB-8, and TB-10.
 - I. EnviroSheet – 60 mil self-adhering flashing membrane used for grade and thru-wall detailing.
 - J. Waterstop RX – hydrophilic strip waterstop, active bentonite/butyl-rubber based, rectangular shape.
 - K. EnviroPrimer SB – solvent-based primer for adhesion with EnviroSheet waterproofing membranes.
- 2.4 BASE AND SHEET DRAINAGE COMPOSITE
- A. Aquadrain® 15X – two-part prefabricated sheet drain consisting of a 3-dimensional polypropylene formed dimple core covered with a non-woven polypropylene filter fabric on one side. Use base drain accessory connectors and outlets as required.
 - B. Aquadrain® 100BD Base Drain – 1" (25 mm) thick x 12" (300 mm) high base drain composite designed to collect water from sheet composite drainage and then discharge the water to proper sump system or gravity to daylight.
 - 1. Compressive Strength, 10,000psf (457 kPa); B. Water Flow rate, 97gpm/ft (1,197 l/m/m);
 - 2. Thickness, 1" (25 mm)

PART 3 EXECUTION

3.1 SUBSTRATE INSPECTION AND CONDITIONS

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. The installer, with the Owner's Independent Inspector present, shall examine conditions of substrates and other conditions under which this section work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected and are acceptable for compliance with manufacturer's

warranty requirements. General substrate conditions acceptable for the waterproofing installation are listed below. For conditions not covered in this Section, contact the waterproofing manufacturer for guidance.

- C. WORKING MUD SLAB: Working concrete mud slabs should have a float finish to provide a planar surface; without sharp angular depressions, voids or raised features.
- D. COMPACTED SOIL OR GRAVEL SUB-GRADE: Sub-grade shall be compacted to a minimum Modified Proctor compaction of 85% or greater as specified by civil/geotechnical engineer. The finished sub-grade surface shall be well-leveled, uniform, free of debris and standing water or ice. Aggregate sub-grades shall consist of $\frac{3}{4}$ " (19 mm) stone or smaller and rolled flat, free from any protruding sharp edges. If substrate consists of large aggregate, place a high-strength geotextile layer over the aggregate and then provide several inches of compacted soil or sand for uniform support and containment of waterproofing sheets. Specific sub-grade preparation shall be approved by the project's civil or geotechnical engineer.
- E. MECHANICAL OR OTHER PENETRATIONS: Mechanical, structural, or architectural materials that will pass through the plane of the waterproofing membrane shall be properly installed and secured in their final position prior to installation of the waterproofing system.
- F. CONCRETE: Concrete to be waterproofed shall be properly placed and consolidated. Reinforced structural slabs should be a minimum of 6" (150 mm) thick when placed on a working mud slab. Reinforced concrete slab(s) on compacted grade shall be a minimum of 4" (100 mm) thick. When hydrostatic conditions exist, install Voltex DS under all footings, elevator pits and grade beams. Cast-in-place concrete to receive waterproofing shall be of sound structural grade with a smooth finish, free of debris, oil, grease, laitance, dirt, dust, or other foreign matter which will impair the performance of the waterproofing and drainage system and which do not comply with manufacturer's warranty requirements. Voltex DS can be installed on green structural concrete as soon as the forms are removed provided the contractor gains written approval from project structural engineer listing any site specific concrete curing time requirement. Do not apply Voltex DS waterproofing directly over lightweight insulating concrete, wood, or steel decking.
 - 1. Remove dirt, debris, oil, grease, cement laitance, or other foreign matter which will impair or negatively affect the performance of the waterproofing and drainage system.
 - 2. Protect adjacent work areas and finished surfaces from damage or contamination from waterproofing products during installation operations.
 - 3. Form fins, ridges, ponding ridges and other protrusions should be level and smooth with concrete surface.
 - 4. Honeycombing, aggregate pockets, tie-rod holes and other voids shall be completely filled with non-shrink cementitious grout and level with monolithic concrete surface.
 - 5. Horizontal deck or roof concrete surfaces should be sloped for positive drainage to the deck drains or the perimeter edges. Deck drain positions should be designed with an appropriate sump depression surrounding the drain.

6. Precast concrete deck units shall be installed and secured to structural supports in accordance with the concrete panel manufacturer's requirements and industry practice. All joints between precast units shall be completely grouted and flush with deck. Any differential in elevation between precast units shall be feathered for a smooth transition.
7. All expansion joints should receive applicable expansion joint sealant product manufactured by others prior to the installation of the Voltex Waterproofing System. Expansion joint material is the primary seal at the expansion joint and the expansion joint material manufacturer is responsible for water tightness of the joint.

NOTE: Related work to be completed under Division 3. Waterstop-RX shall be installed in all applicable vertical and horizontal concrete construction cold pour joints and around applicable penetrations, structural members, and tie-rod form holes that extend through the wall. At shotcrete walls, provide double waterstops at cold joints. Refer to Waterstop-RX Product Manual for further installation procedures and guidelines.

3.2 SURFACE PREPARATION

- A. Comply with manufacturer's recommended installation practices. If this Section differs from manufacturer's recommended practices, bring to the attention of the Architect.
- B. Remove dirt, debris, oil, grease, cement laitance, or other foreign matter which will impair or negatively affect the performance of the waterproofing and drainage system.
- C. Protect adjacent work areas and finish surfaces from damage or contamination from waterproofing products during installation operations.

3.3 GENERAL INSTALLATION GUIDELINES

- A. Examination, preparation and installation shall be in strict accordance with manufacturer's written instructions.
- B. The following instructions assume non-hydrostatic conditions, unless otherwise noted.
- C. Property Line Walls, install Voltex membrane with the dark gray woven geotextile side in the direction to receive concrete pour; white geotextile side outward against retaining wall. Overlap Voltex membrane edges minimum 4" (100mm). Underslab, install Voltex with the dark gray woven geotextile side up; white geotextile side facing down. Overlap Voltex membrane edges minimum 4" (100 mm). Backfilled walls and roofs of earth covered structures, install Voltex with the white geotextile side outward, away from the concrete, facing the installer; dark gray geotextile against concrete. For backfilled walls overlap Voltex membrane edges a minimum 4" (100mm).
- D. Expansion Joints: Voltex waterproofing is not an expansion joint filler or sealant, but may be used as an expansion joint cover over a properly installed expansion joint material placed during substrate preparation. To use Voltex as an expansion joint cover, trowel 1/8" (3 mm) thick, 6" (150 mm) wide layer of Bentoseal centered over expansion joint. Install a 24" (60 cm) wide strip of Voltex centered over the expansion joint. Then install the main course of Voltex .

3.4 SLAB / BACKFILLED WALL FOOTING EDGE TRANSITION COURSE

- A. Inside the slab/footing form edge, secure Voltex sheet horizontally oriented (white geotextile side down; dark gray geotextile side up) to the top inside edge of the exterior slab/footing form with the sheet conforming to the interior form surfaces and then extending out onto the horizontal slab substrate a minimum 12" (300 mm). Overlap edges of adjacent Voltex sheets a minimum 4" (100 mm) and secure to prevent sheet movement during construction or concrete placement.

3.5 UNDER SLAB INSTALLATION

- A. Install Voltex under all footings, slabs and elevator pits per the drawings.
- B. Install Voltex membrane (white geotextile side down; dark gray geotextile side up) extending to interior edge of footing/slab edge, fully overlapping the 12" (300 mm) horizontal tail of the Voltex slab edge sheet installed in Section 3.04B. Overlap edges of adjacent Voltex sheets a minimum 4" (100 mm) and secure to prevent sheet movement during construction or concrete placement.
- C. Install waterproofing system at all grade beams, pile caps, and other detail areas in accordance with manufacturer's detail for specific project condition(s).
- D. Slab Penetrations: For all pipe, rebar, structural or other penetrations install waterproofing system in accordance with manufacturer's standard detail for specific project condition(s).
- E. Inspect finished Voltex installation and repair any damaged material prior to concrete slab placement.

NOTE: Related work to be completed under Division 3. Waterstop-RX shall be installed in all slab joints, around applicable slab penetrations and structural members. Refer to Waterstop-RX Product Manual for further installation procedures and guidelines.

3.6 BACKFILLED CAST-IN-PLACE CONCRETE WALLS

- A. Place Hydrobar Tubes along the wall/footing intersection with ends "buted" tightly together to form a continuous installation.
- B. Trowel 3/4" (18 mm) thick, continuous Bentoseal fillet at all inside wall corner transitions. Trowel Bentoseal form-tie pockets/patches and any slightly irregular concrete surface honeycomb areas.
- C. Starting at the base of the wall, install Voltex sheet horizontally (dark gray geotextile side against the wall; white geotextile side facing installer) covering the Hydrobar Tubes and extending onto the footing a minimum of 6" (150 mm). For hydrostatic conditions, cover the entire footing and overlap waterproofing membrane from underslab work a minimum of 6" (150 mm). Attach Voltex using washer-headed mechanical fasteners maximum 24" (600 mm) on center. Overlap all adjacent sheet edges a minimum 4" (100 mm). Stagger all vertical overlap seams a minimum of 12" (300 mm).
- D. After the bottom horizontal course, Voltex sheets can be installed either vertically or horizontally oriented. Continue Voltex installation up wall to finished grade elevation detail, staggering all sheet roll ends of adjacent courses a minimum 12" (300 mm). Do not allow horizontal Voltex overlap joints to run at same elevation as the concrete pour lift joints. Overlap all adjacent Voltex sheet edges a

minimum 4" (100 mm) and secure with washer-head fastener maximum 24" (600 mm) on center.

- E. Penetrations: For all pipe, rebar, structural and other penetrations install waterproofing system in accordance with manufacturer's detail for specific project condition(s).
- F. Terminate Voltex membrane 12" (300 mm) below finished grade elevation secured with washer-head fasteners maximum 12" (300 mm) on center to exterior surface of concrete wall. Per manufacturer's detail for specific project condition(s), install GS-40SA grade flashing to primed concrete substrate with bottom edge overlapping top edge of Voltex membrane minimum 4" (100 mm). Overlap all roll ends a minimum 4" (100 mm) to form a continuous flashing. Height of flashing shall be per project details and specifications. Install a rigid termination bar along the top edge of GF-40SA; fastened maximum 12" (300 mm) on center. Complete grade termination detail with tooled bead of CETSEAL along the top edge, at all penetrations through the flashing, and all exposed overlap seams.
- G. Inspect finished Voltex installation and repair any damaged material prior to backfill placement. Assure that Voltex is not displaced during backfill placement or soil compaction.

3.7 PREFABRICATED DRAINAGE COMPOSITE INSTALLATION (Non-Hydrostatic Walls)

- A. At the base of the wall, place Aquadrain 100BD (100BD) base-drain horizontally oriented with the open core side up and the 2" (50 mm) flap of fabric side tight against the wall over the previously installed Voltex waterproofing using washer-head mechanical fasteners or general construction adhesive. The 2" fabric flap along the top edge of 100BD should be tightly secured against the wall. Use 100BD accessory fittings, as required, to form a continuous installation. Install 100BD discharge outlet fittings to connect to discharge pipes as required for the project.
- B. Install the bottom course of Aquadrain 15XP sheet drainage (plastic core side against the wall) with the 15XP bottom core edge in contact with open top core edge of 100BD. Secure sheet drain to wall with washer-head fasteners. Secure extra fabric flap of 15XP extending down the top front edge of 100BD to prevent the passage of soil into the core at the connection.
- C. Install subsequent courses of Aquadrain 15XP sheet drainage to within 12" (300 mm) of finished grade or as shown on the project drawings. Tightly abut adjoining sheet drain core edges together and secure the extra fabric flaps over the front of adjacent roll edges to prevent soil from entering the sheet drain. Secure sheet drain to wall with washer-head fasteners. Where drainage sheet panels are installed overlapped, bottom edge of higher course shall be installed to the outside of the lower course to shed water like a roof shingle.
- D. Around penetrations and tie-back heads, cut sheet drainage composite to fit and wrap extra filter fabric around open core edge to prevent soil from entering core.
- E. At the top of the sheet drain installation, wrap the filter fabric flap behind the exposed top core edge to prevent intrusion of soil into the core and secure sheet drain to wall with termination bar fastened 12" (300 mm) on center.

3.8 INSULATION

- A. Always apply Voltex waterproofing directly to properly prepared structural concrete substrates. Insulation, if used, should be installed to the exterior of the waterproofing. Do not apply Voltex waterproofing over lightweight insulating concrete.

3.9 BACKFILL EXCAVATED CAST-IN-PLACE CONCRETE WALLS

- A. Backfill shall be placed and compacted to minimum 85% Modified Proctor density promptly after waterproofing has been installed. Closely coordinate with contractor responsible for Backfill work by informing them each time a waterproofed area is ready for backfill. Backfill shall consist of compactable soil or angular aggregate (3/4" or less) free of debris, sharp objects, and stones larger than 3/4" (18 mm). Care should be used during backfill operation to avoid damage to the waterproofing system. If damage occurs, cease backfilling and report damage. Damaged waterproofing must be repaired per manufacturer's guidelines.

3.10 PROTECTION

- A. All work shall be backfilled after installation to protect. If not possible, restrict access to the area of waterproofing and protect membrane with plywood or OBS in addition to the Protection Board for all areas subject to traffic or equipment.

3.11 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan. Refer to Section 01 74 19 for specific requirements.

END OF SECTION

SECTION 07 26 00
UNDERSLAB VAPOR BARRIERS

HAVE THE ENVELOPE CONSULTANT REVIEW THIS SECTION; COORDINATE WITH EXTERIOR DETAILS

PART 1 GENERAL

1.1 SUMMARY

- A. Section vapor barrier and installation accessories for installation under concrete slabs. Refer to Section 07 53 00 for vapor barrier at the roof and Section 09 90 00 for vapor retarder at exterior walls.
- B. Related Sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories.
 - 2. Section 03 20 00 – Concrete Reinforcing.
 - 3. Section 03 30 00 – Cast-in-Place Concrete.
 - 4. Division 22 – Plumbing.
 - 5. Division 26 – Electrical.
 - 6. Division 31 – Earthwork.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM E1745-17 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
 - 2. ASTM E1643-11 Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
- B. Technical Reference - American Concrete Institute (ACI):
 - 1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
 - 2. ACI 302.1R-15 Guide to Concrete Floor and Slab Construction.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Manufacturer's product data for each component.
- C. Summary of test results per paragraph 9.3 of ASTM E1745.
- D. Manufacturer's samples and literature for each component.
- E. Manufacturer's installation instructions for placement, seaming, penetration prevention and repair, and perimeter seal per ASTM E1643.
- F. All mandatory ASTM E1745 testing must be performed on a single production roll per ASTM E1745 Section 8.1.
- G. Submit a sample warranty for each component.

1.4 QUALITY ASSURANCE

- A. Qualifications

1. Hold a pre-installation conference, two weeks prior to start of vapor retarder installation. Attendees shall include General Contractor, Architect, Building Envelope Consultant, Installer, Owner's Representative, and vapor retarder manufacturer's designated representative.
2. Installer shall have experience with installation of vapor barrier assemblies under similar conditions.
3. Installation shall be in accordance with vapor barrier manufacturer's installation guidelines and recommendations.

1.5 SEQUENCING

- A. Sequence Work to permit installation of materials in conjunction with other retardant materials and seals.
- B. Do not install the work of this Section until items penetrating the products are in place.

PART 2 PRODUCTS

2.1 VAPOR BARRIERS

- A. All components must be single source from membrane manufacturer to ensure system compatibility.
- B. System Description: Installed under concrete slab-on-grade.
- C. Listed Manufacturer and Product:
 1. Stego Industries, LLC, Stego Wrap Vapor Barrier (15 mil).
- D. Manufacturers Products also accepted:
 1. Fortifiber Building Systems Group, Moistop Ultra "A", 15 mil thickness polyolefin film, Class A according to ASTM E 1745 requirements.
 2. Substitutions: Section 01 25 13 – Product Substitution Procedures.
- E. Material Properties:
 1. Maintain permeance of less than 0.01 Perms [grains/(ft² · hr · inHg)] as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
 2. Other performance criteria:
 - a. Strength: ASTM D882 70.6 lbf/in
 - b. Thickness: 15 mils minimum
 3. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1
- F. ACCESSORIES
 1. Seams & Taping:
 - a. Stego Tape by Stego Industries LLC, (877) 464-7834
www.stegoindustries.com.
 2. Sealing Penetrations of Vapor barrier:
 - a. Stego Mastic by Stego Industries LLC, (877) 464-7834
www.stegoindustries.com.
 3. Perimeter/edge seal:
 - a. Stego Crete Claw by Stego Industries LLC, (877) 464-7834
www.stegoindustries.com.

- b. Stego Term Bar by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.
 - c. StegoTack Tape (double-sided sealant tape) by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.
- 4. Penetration Prevention:
 - a. Beast Foot by Stego Industries LLC, (877) 464-7834 www.stegoindustries.com.
- 5. Vapor Barrier-Safe Screed System
 - a. Beast Screed by Stego Industries, LLC, (877) 464-7834 www.stegoindustries.com.

PART 3 EXECUTION

3.1 PREPARATION

- A. Ensure that subsoil is approved by Geotechnical Engineer.
- B. Level and compact base material.
- C. Do not proceed with installation until unacceptable conditions are corrected.

3.2 INSTALLATION OF VAPOR BARRIER UNDER SLAB-ON-GRADE

- A. Install in accordance with manufacturer's instructions and the project documents.
- B. Install vapor barrier in accordance ASTM E1643.
 - 1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible.
 - 2. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the structural engineer or (b) where obstructed by impediments, such as dowels, waterstops, or any other site condition requiring early termination of the vapor barrier. At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.
 - a. Seal vapor barrier to the entire slab perimeter using Stego Crete Claw, per manufacturer's instructions.
 - OR
 - b. Seal vapor barrier to the entire perimeter wall or footing/grade beam with double sided StegoTack Tape, or both Stego Term Bar and StegoTack Tape, per manufacturer's instructions. Ensure the concrete is clean and dry prior to adhering tape.
 - 3. Overlap joints 6 inches and seal with manufacturer's seam tape.
 - 4. Apply seam tape/Crete Claw to a clean and dry vapor barrier.
 - 5. Seal all penetrations (including pipes) per manufacturer's instructions.
 - 6. For interior forming applications, avoid the use of non-permanent stakes driven through vapor barrier. Use blunt-end and/or threaded nail stakes (screed pad posts) and insert them into Beast Foot. Ensure Beast Foot's peel-and-stick adhesive base is fully adhered to the vapor barrier
 - 7. If non-permanent stakes must be driven through vapor retarder, repair as recommended by vapor retarder manufacturer.
 - 8. Use reinforcing bar supports with base sections that eliminate or minimize the potential for puncture of the vapor barrier.

9. Repair damaged areas with vapor barrier material of similar (or better) permeance, puncture and tensile per manufacturer's written instructions.
10. For vapor barrier-safe concrete screeding applications, install Beast Screed (vapor barrier-safe screed system) per manufacturer's instructions prior to placing concrete.

3.3 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan. Refer to Section 01 74 19 for specific requirements.

END OF SECTION

Evergreen Standard (v4.0) Checklist

INSTRUCTIONS: Do not leave any cells blank.

For Mandatory Criteria:

- Indicate with a capital "X" all criteria that apply to your project in the Points column.
- Select "N/A" if the criterion does not apply to your project.

For Optional Criteria:

- New Construction projects must achieve 50 points; Rehab projects must achieve 40.
- Enter the appropriate number of optional points you are claiming in the Points column, or 0 if no points are selected.

Evergreen Sustainable Development Standard v4.0 Checklist

Project Name: Kirkland Heights New Construction

Site Name: Kirkland Heights, 13324 NE 133rd St., Kirkland, WA

Site Region: Urban

Site Activity: New Construction

Project Type: Rental

Design Element: Integrative Process

#	Title	Requirement Type/Optional Points	Points
1.01 a	Integrative Process Planning	Mandatory	X
b	Integrative Design: Documentation	Mandatory	X
c	Integrative Design: Construction Management	Mandatory	X
d	Integrative Design: Post Occupancy Evaluation	Optional 6 Points	0
1.02	Advanced Tools	Optional up to 13 Points	Select...
1.03	Beyond ADA: Universal Design	Optional 8 Points	0
1.04	Healing-Centered Design	Optional 8 Points	8
1.05	Active Design: Promoting Physical Activity	Optional 8 Points	8
Section 1 SUBTOTAL			16

Design Element: Location & Neighborhood Fabric

#	Criterion Title	Requirement Type/Optional Points	Points
2.01	Appropriate Project Siting	Mandatory	X
2.02 a	Connections to Existing Development & Infrastructure	Mandatory for Urban New Construction	X
b	Connections to Existing Development & Infrastructure		
2.03 a	Compact Development	Mandatory for New Construction	X
b	Compact Development: Higher Density	Optional 5 Points for New Construction	5
2.04 a	Access to Services	Mandatory for New Construction	X
b	Enhanced Access to Services	Optional 5 Points	5
2.05 a	Access to Transit	Mandatory for New Construction	n/a
b	Enhanced Access to Transit	Optional 2, 6, or 8 Points	0
2.06 a	Preservation of and Access to Open Space		
b	Preservation of and Access to Urban Open Space	Optional for Urban 2 or 4 Points	4
2.07	Walkable Neighborhoods - Sidewalks & Pathways	Mandatory Except for Tribal	X
2.08	Reducing Private Automobile Use	Optional Up to 5 Points	0
2.09	Greyfield, Brownfield, or Adaptive Reuse Site	Optional 5 or 7 Points	0
2.10	Access to Fresh, Local Foods	Optional 3 Points	3
2.11	Locating in Certified Communities	Optional 8 Points	0
2.12 a	Access to Broadband: Broadband Ready	Mandatory	X
b	Access to Broadband: Connectivity	Optional 6 Points	6
Section 2 SUBTOTAL			23

Design Element: Site Improvements

#	Criterion Title	Requirement Type/Optional Points	Points
3.01	Environmental Remediation	Mandatory	X
3.02 a	Landscaping	Mandatory	X
b	Advanced Landscaping	Optional 5 Points	5
c	Landscaping- Significant Trees	Optional up to 5 Points	5
3.03	Efficient Irrigation	Mandatory	X
3.04	Storm Drain Labels	Mandatory	X
Section 3 SUBTOTAL			10

Design Element: Water Conservation

#	Criterion Title	Requirement Type/Optional Points	Points
4.01 a	Water-Conserving Fixtures	Mandatory	X
b	Advanced Water-Conserving Fixtures	Optional up to 6 Points	4
4.02 a	Leak Detection		
b	Leak Detection Pre-Acquisition		
4.03 a	Lead Service Lines in Existing Buildings		
b	Lead Service Lines in New Buildings	Optional 3 Points for New Construction with Demolition	0
4.04 a	Water Metering – New Construction	Optional 2 Points for New Construction	0
b	Water Metering - Rehab		
4.05	Water Reuse	Optional up to 12 Points	0
4.06	Efficient Plumbing Layout & Design	Optional 4 Points	0
4.07	Access to Potable Water During Emergencies	Optional 8 Points	0
Section 4 SUBTOTAL			4

Design Element: Energy Efficiency

#	Criterion Title	Requirement Type/Optional Points	Points
5.01 a	Building Performance – Commissioning	Mandatory for New Construction	X
b	Building Performance – Weatherization		
5.02 a	Additional Efficiency	Optional 3-25 Points for New Construction	5
b	Additional Efficiency - Window Replacement		
5.03	ENERGY STAR Appliances	Mandatory	X
5.04	Central Laundry	Optional 3 Points	0
5.05	Electricity Metering		
5.06	Renewable Energy		
5.07 a	Photovoltaic Ready	Mandatory for New Construction	X
b	Photovoltaic Ready - Upgrades		
5.08 a	Domestic Water Heating	Mandatory for New Construction	X
b	Domestic Water Heating – Higher Efficiency		
5.09	Space Heating & Cooling Equipment Replacement		
Section 5 SUBTOTAL			5

Design Element: Materials

#	Criterion Title	Requirement Type/Optional Points	Points
6.01 a	Healthier Material Selection	Mandatory	X
b	Healthier Material Selection - Toxin-Free Recycled Content	Optional up to 3 Points	0
c	Healthier Material Selection - Advanced	Optional up to 15 Points	4
6.02 a	Embodied Carbon Reduction - Materials	Optional up to 9 Points	2
b	Embodied Carbon Reduction - Regional Sourcing	Optional up to 4 Points	0
6.03	Construction Waste Management	Optional Up to 5 Points	5
6.04 a	Reduced Heat Island Effect: Roofing	Optional 2 Points	0
b	Reduced Heat-Island Effect: Paving	Optional 2 Points	0
6.05	Socially Sustainable Products	Optional up to 3 Points	0
Section 6 SUBTOTAL			11

Design Element: Healthy Living Environment

#	Criterion Title	Requirement Type/Optional Points	Points
7.01	Combustion Equipment	Mandatory	n/a
7.02	Garage Isolation	Mandatory	n/a
7.03	Integrated Pest Management	Mandatory	X
7.04	Lead-Safe Work Practices	Mandatory for Rehab & New Construction with Demolition	X
7.05 a	Smoke-Free Units and Common Areas	Mandatory	X
b	Smoke-Free Property	Optional 7 Points	0
7.06	Exhaust Fans – Bathroom Upgrade		
7.07 a	Exhaust Fans – Kitchen	Mandatory for New Construction	X
b	Exhaust Fans – Kitchen Upgrade		
7.08 a	Ventilation	Mandatory for New Construction (single family & ≤3 Stories)	X
b	Ventilation Upgrades		
c	Ventilation - Outside Air Filtration	Optional 8 Points	0
7.09	Clothes Dryer Exhaust	Mandatory	X
7.10	Mold Prevention: Surfaces	Mandatory	X
7.11	Mold Prevention: Tub & Shower Enclosures	Mandatory	X
7.12	Vapor Barrier Protection Strategies	Mandatory for Projects with Foundation Work	X
7.13	Enhanced Building Envelope Design	Optional up to 8 Points	6
Section 7 SUBTOTAL			6

Design Element: Operations, Maintenance & Resident Management

#	Criterion Title	Requirement Type/Optional Points	Points
8.01 a	Building Maintenance Manual – Sustainability Supplement	Mandatory	X
b	O&M Instructions for Maintenance Staff	Optional 7 Points	7
8.02	Resident/Owners’ Manual	Mandatory	X
8.03	Walk-Throughs and Orientations to Property Operation	Mandatory	X
8.04	Project Data Collection	Optional 5 Points	0
8.05	Educational Signage	Optional 1 Point	0
8.06	ESDS Certification Plaque	Optional 2 Points	0
Section 8 SUBTOTAL			7

Thresholds

In order to ensure that your project will pass the threshold for the Evergreen Sustainable Development Standard, we advise building in a "cushion" of 5-10 points above what is required.

New Construction projects must achieve 50 points

Rehab projects must achieve 40 points, unless otherwise approved

Section 1	16
Section 2	23
Section 3	10
Section 4	4
Section 5	5
Section 6	11
Section 7	6
Section 8	7
Overall Checklist Total	82