Whatcom Transportation Authority

INVITATION TO BID
FOR
INTERIOR REMODEL OF WTA'S MAINTENANCE, OPERATION, and ADMINISTRATION BASE (MOAB)

ITB 2021 - 231

RELEASE DATE:
September 7

PRE-BID MEETING:
September 21 @ 10:00 AM
BID DUE:
October 6 no later than 1;00 PM

Whatcom Transportation Authority
4011 Bakerview Spur Road
Bellingham, WA 98226
Phone (360) 788-9332 Fax (360) 788-9532
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http://www.ridewta.com/business/doing-business/procurement

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SECTION 00 11 16 ADVERTISEMENT FOR BID

Whatcom Transportation Authority (WTA) provides fixed route, paratransit, and vanpool service throughout Whatcom County. WTA is a municipal corporation formed in 1983. The transit revenue fleet consists of 65 fixed route buses, 47 paratransit vehicles, 19 vanpools, and 2 "on demand" vehicles. WTA employs over 250 employees. Find additional information about WTA at www.ridewta.com.

WTA's mission is to enhance our community by:
- Delivering safe, reliable, efficient and friendly service
- Offering environmentally sound transportation choices
- Providing leadership in creating innovative transportation solutions
- Partnering with our community to improve transportation systems

WTA is soliciting bids for a Prime Contractor for a remodel to WTA's Maintenance, Operations, Administration, Base (MOAB) second floor office space.

Questions and bid submission will be through WTA's online platform:
https://wta.cobblestone.software/gateway/SolicitationPublicSearch.aspx.

Prime contractors interested in bidding must:

1. Be registered within the online platform
2. Indicate within the platform they are interested in bidding
3. Understand how to submit a bid prior to the submission deadline

Bid submission will be done electronically with a public bid opening conducted via Microsoft Teams.

A responsive Bidder, and all Sub-Contractors must meet the minimum qualifications outlined in Section 00 21 13 Section 1.09[1]. **at the time of bid**[2].

This Contract is subject to Washington State Prevailing Wage and retainage rules, and the Public Works provisions, RCW Chapter 39.04. Federal Davis Bacon will not apply. A bid bond, payment bond, and performance bond are required pursuant to RCW 39.08.010(3).

Bidders will be required to adhere to the terms and conditions of this solicitation. *The Invitation to Bid, and all of the terms are incorporated as terms and conditions of the final contact*. WTA may not negotiate any aspect of the required service or contract performance once the Intent to Award is issued. WTA will not make any concessions for Bidders who are not completely familiar with the scope or contract requirements.

Equal Opportunity: Small, minority and women-owned Disadvantaged Business Enterprises (DBE), as defined in 49 CFR Part 26, are encouraged to submit proposals in response to this solicitation. WTA ensures non-discrimination in the award and administration of all contracts, creates a level playing field where DBE's can compete fairly, and remove barriers to the participation of DBE's in our contracts.

END OF SECTION 00 11 16

[1] RCW 39.06.020
[2] RCW 39.04.350

SECTION 00 21 13 INSTRUCTIONS TO BIDDERS

1.01 BIDDING DOCUMENTS

A. WTA uses an electronic procurement & contract management platform provided by CobbleStone. Prime contractors interested in bidding (Bidders) must complete a FREE registration prior to downloading or submitting a bid. Visit the WTA website: ridewta.com/business/doing-business/procurement

B. Bidders will rely only on written statements issued by WTA's Procurement & Contracts Manager via the online platform.

C. Download bidding documents – **including drawings** - and issued addenda from https://wta.cobblestone.software/gateway/SolicitationPublicSearch.aspx, or requested from WTA's procurement officer.

D. Use complete sets of Bidding Documents in preparing bids. WTA assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents. Addenda is posted to the solicitation found in WTA's online bid platform.

E. Bidding Documents do not confer a license or grant for any other use other than contemplating bids.

F. All bids shall be based upon the scope of the project as set out in the Bidding Documents, and any amendments, alterations or changes hereinafter made to the Bidding Documents (Work).

1.02 BIDDER'S REPRESENTATION

A. Submitting a bid indicates the Bidder has examined the entire Invitation to Bid (ITB), has obtained all drawings and addenda, and understands all requirements and guarantees. The bidder has:
   1. Taken steps reasonably necessary to ascertain the nature and location of the Work.
   2. Read and understands the requirements of the contract and scope of the Work.
   3. Investigated and satisfied itself of the general and local conditions affecting the Work and its cost, including but not limited to:
      i. Administrative requirements for contract execution.
      ii. Conditions for materials acquisition, transportation, disposal, handling, and storage.
      iii. The availability of labor, materials, water, electric power, and roads.
      iv. Uncertainties of weather, river stages, tides, or other physical conditions.
      v. The condition, make-up, and obstacles associated with the (sub)surface.
      vi. The quality of equipment and facilities needed to perform the work.
      vii. Biological hazards and associated physical hazards.
      viii. The nature and extent of WTA's use of the area, including bus operation.
      ix. Obligations for obtaining insurance and bonds, including costs of maintaining insurance required in 00 70 00 part 1.28.
      x. WTA's required construction schedule.

B. WTA will not approve additional payment, time or any other claim directly or indirectly resulting from a Bidder's failure to familiarize itself of conditions for Contract performance.

1.03 ITB QUESTIONS & CONTACT WITH WTA

Questions pertaining to the ITB must be submitted via WTA's procurement portal no later than the close of business on the date listed in Section 00 31 13 Bid Schedule. WTA does not guarantee that a response will be provided, or the completeness of any answer to questions that are not submitted using the procurement portal or submitted after the date provided in the Bid Schedule.

Any oral communications will be considered unofficial and non-binding on WTA. Bidders shall rely only on written statements issued by the Procurement & Contracts Manager listed below. Unauthorized contact regarding this ITB with other WTA employees or agents may result in disqualification.

Magan Waltari, CPPB, CPSM, NIGP-CPP
Procurement & Contracts Manager/DBELO
4011 Bakerview Spur
Bellingham, WA 98226
360.788.9332
procurement@ridewta.com

1.04 VIRTUAL BID OPENING

A. Bids will be opened via Microsoft Teams at PM PST. Interested attendees may:
   - Contact Procurement (Contact info in 1.04 above) and request a meeting invite
   - Dial via phone at conference ID:
   - View the bid opening using the below link.
B. Any interested party may attend the virtual bid opening.
C. WTA will not conduct an in person bid opening.

1.05 MODIFICATION OR WITHDRAWAL OF BID

A. Any bid may be withdrawn at any time prior to the opening. Bids may not be revised once the opening date has passed, unless specifically requested by WTA.
B. Withdrawn bids may be resubmitted up to the time designated for the receipt of bids provided they conform with the ITB requirements.

1.06 SUBMISSION GUIDELINES

A. GENERAL
   1. Bids must be submitted using WTA's online portal on or before designated due date and time. https://wta.cobblestone.software/gateway/SolicitationPublicSearch.aspx
   2. WTA is providing a 30 minute buffer between when bids are due and bid opening to account for any technical difficulties with the bid portal and allow attendee's to log into Teams for the public opening.
   3. Bidders should verify WTA has received the document and bid bond before the bid opening. Late bids or bids missing a bid bond will not be considered.
   4. A bid bond is required at the time of bid opening. Refer to 00 43 13 Bid Security for more information.
   5. Bids become the property of the WTA. Pages of the bid will be numbered, and sections clearly outlined. Submit any confidential or proprietary information separately and clearly marked as "Proprietary" or "Confidential." THE SCOPE AND EXTENT OF PROTECTION THAT WTA CAN PROVIDE TO INFORMATION DESIGNATED AS PROPRIETARY AND CONFIDENTIAL IS LIMITED. ALL PARTIES SHOULD REVIEW 00 70 00 part 1.29 FOR A FULL EXPLANATION[3].
   6. WTA, Architect, or Engineer are not responsible for errors or misinterpretations resulting from using incomplete Bidding Documents.
B. BID RESERVATIONS

[3] RCW 42.56

1. WTA reserves the right to:
   - Accept or reject any or all bids and their Bidders
   - Award to more than one Bidder if in the best interest of the agency
   - Reject any or all bids until a Contract is signed
   - Reject this solicitation and issue a new one for any reason
   - Waive deviations from the requirements
   - Waive any informality or minor irregularity in bids received
   - Issue changes in the form of a written addenda
   - Request additional information to fully evaluate a bid or Bidder
2. A bid will be rejected when:
   - Bidder has previously failed to adequately perform or complete contracts on time
   - Bidder fails to verify sub-Contractor responsibility
   - Insufficient experience and ability information
   - No experience in the type of work to be performed
   - It is not received by the deadline stated above
   - The bid is not in the format as required
   - The Bidder fails to meet the minimum requirements listed in 00 21 13 Part 1.09
   - The bid is not signed
   - Any issued Addenda are not acknowledged on 00 62 11
   - Bids are incomplete, conditioned, obscure, or irregular
   - Omitting a price on any one (1) or more items for which bids are required
   - Omitting unit prices if unit prices are required
   - Unit prices are unbalanced in the opinion of WTA
   - Any other reason determined to be in the best interest of the WTA
3. Bids submitted will not be a public record or information until after bid opening.
4. Bid pricing shall be valid for a period of sixty (60) days.
5. If WTA has reason to believe that collusion exists among Bidders, WTA staff, and/or Bidders and WTA staff, WTA will reject all bids received and re-bid the project.

C. BID FORMS
   1. All completed forms must be included in each bid. Altering or omitting forms renders the bid non-responsive.
   2. Only the person(s) legally authorized to commit the Bidder to a contract may sign the bid. Bids submitted by an agent will have an accompanying power of attorney.

D. BID PRICES:
   1. All prices shall be in legible figures (not words) written or typed and expressed in U.S. currency.
   2. WTA is not liable for claims resulting from the Bidder's failure to independently investigate and familiarize itself with the Contract and Scope conditions.
   3. Bid prices shall reflect the total cost of completing the Work, including but not limited to methods, materials, labor, equipment, shipping, overhead, permits, insurance, taxes, and bonding. Bidder shall receive no payment for costs exceeding the bid price unless allowed by Section 01 26 00.
   4. The successful Contractor shall submit a detailed schedule of values for the proposed Installation and Labor Contract Sum showing the value assigned to each activity of the work, including separate allowances for profit and overhead, performance bond, and certificate of insurance.
   5. Contractor may be requested to break out costs on invoices.

1.07 SUB-CONTRACTS

A. Contractor will award sub-Contracts to veteran-owned businesses whenever possible[4]. WTA reserves the right to request documentation of outreach efforts.
B. Contractor will submit all known sub-Contractors at the time of bid (Section 00 70 00, 1.31, CDR # 10). Information required:
    a. Contractor Name
    b. Contractor UBI
    c. Aspect of Scope to complete
C. Contractor will verify sub-Contractor responsibility before bid submission[5]. Contractor's failure to verify sub-Contractor responsibility will be cause for bid rejection and award to next lowest bidder.
D. WTA reserves the right to investigate sub-Contractor responsibility. WTA will not approve change orders to the bid price for replacing rejected Sub-Contractors.
E. Before they begin work, sub-Contractor(s) will submit to the Procurement & Grants Coordinator:
    1. The same insurance requirements listed in 00 70 00 Part 1.28 or be included as part of the Prime Contractors insurance
    2. Submit Intent to Pay Prevailing Wage[6] to L&I on their portion of the project. Certified Payrolls will be available upon request.
    3. Provide proof that all individuals or entities are properly licensed, certified, and/or bonded to perform the contracted scope where applicable.
F. Contractor will be jointly and severally, and vicariously liable with all sub-Contractors to WTA and responsible for all aspects of the work performed by its sub-Contractors. All sub-Contractors will have sufficient knowledge, skill, and experience to perform contracted work.

1.08 MINIMUM BIDDER REQUIREMENTS

Bidders and sub-Contractors must meet the following minimum qualifications **at the time of bid**[7]. Bidders will not substitute the qualifications or experience of a sub-Contractor for its own. It is the Bidder's responsibility to verify that sub-Contractors at all tiers meet the responsibility requirements[8].

A. BIDDER RESPONSIBILITY
    - At the time of bid submittal, provide proof of a current Contractor Certificate of Registration complying with RCW Chapter 18.27.
    - Provide a current Washington State unified business identifier (UBI) number.
    - Show proof of industrial insurance coverage for the Bidder's employees working in Washington as required in RCW Title 51; an employment security department number as required in RCW Title 50; and a state excise tax registration number as required in RCW Title 82.
    - Not be disqualified from bidding on any contract under RCW 39.06.010 or 39.12.065 (3).
    - In the last three-years (3), not received 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 to have willfully violated, as defined in RCW 49.48.082, any provision of RCW chapters 49.46, 49.48, or 49.52.
    - Before award of a public works contract, a bidder shall submit a signed statement in accordance with RCW 9A.72.085 verifying under penalty of perjury compliance with the responsible bidder criteria requirements as set out under RCW 39.04.350 (Section 00 45 19) CDR #29).
    - Have received training on the requirements related to public works and prevailing wage under this chapter and chapter 39.12 RCW. The Bidder must designate a person or persons to be trained on these requirements. The training must be provided by the Department of Labor and Industries or by a training provider whose curriculum is approved by the department. Alternatively, Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this requirement.

[4] RCW 39.04.162 and RCW 43.60A.200
[5] RCW 39.06.020
[6] RCW 39.12
[7] RCW 39.04.350
[8] RCW 39.06.020

B. SUPPLEMENTAL CRITERIA[9]
   - Not be excluded from bidding in System for Awards Management (SAM.gov).
   - Governing people listed by Washington State Department of Licensing and registered agents provided by Washington State Secretary must not have been disqualified from bidding on any contract under RCW 39.06.010, RCW 39.12.065 (3), or 2 CFR 200.205 within the last 10 years.
   - Meet all Quality Assurance requirements provided within Divisions of Work
   - Proof of City of Bellingham Business Registration. [10]
   - If a corporation or limited liability company, it shall be an active Washington entity, or registered to do business established in the State of Washington.
   - Have a business history of a minimum of five (5) years under the same name, as a General Construction Contractor.
   - Provide references under the same name from the last three (3) years. These references must have similar scopes of work and confirm satisfactory performance. Refer to Bid Reservations in Section 1.07 above.

C. The Bidder certifies its knowledge of the general class and type of work required. Bidder is competent and skilled in the protective measures necessary for the safe performance of the construction work with respect to unusual and peculiar hazards.

D. WTA will not award to the Contract to any Bidder who does not have sufficient capital and capability to complete the Work successfully and within the time required. WTA may require additional information from Contractor or sub-Contractors to ensure financial stability.

1.09 SALES TAX

All bid prices will reflect 8.8% Washington State Sales tax. WTA is not tax exempt for this project.

1.10 PROTEST PROCEDURES

Any party with an interest in the award of the solicitation may file a protest that WTA staff did not follow its own policies and procedures regarding a procurement action as defined below. A protest may not be filed challenging the WTA staff or Evaluation Committee's recommendation of a potentially successful Bidder.

Procedures:

1. Any person protesting an award must submit a written Notice of Protest to WTA's Procurement & Contracts Manager no later than seven (7) days before bid opening date for pre-award protests and within three (3) days after the receipt of Intent to Award. The Notice of Protest shall state:
   a) Name, address, email address, and telephone number of the protester
   b) Signature of the protester or their representative
   c) Identification of the solicitation
   d) Detailed statement of the legal and factual grounds of the protest
   e) Copies of all relevant documents
   f) The form of relief requested
2. Protesting parties should call the Procurement Office to verify the exact date of the WTA Board award.
3. Upon timely submittal of a Notice of Protest, the protest shall be handled as follows:
   a) The Finance Director, or Designee shall review and investigate properly filed protests and issue a written decision to the protestor.
   b) A meeting for all parties will be called within five (5) working days from receipt of the protest. The meeting may be conducted in person, telephone or video conference.
   c) A decision of the protest will be made by the Finance Director within three (3) working days of the final meeting. The protester shall be notified of the decision in writing by email or regular mail.
   d) The Finance Director may extend the time limits outlined above at his/her sole discretion.

[9] RCW 39.04.350(2)
[10] Bellingham Municipal Code 6.05.025

e) A request for reconsideration may be allowed if data becomes available that was not previously known, or there has been an error of law or regulation.

4. A protestor may appeal the Finance Director's formal decision to WTA's General Manager. The written appeal must be received by WTA within two (2) business days after receipt of the written decision by the protestor, or the appeal will not be considered. Properly filed appeals of the decisions of the Finance Director shall be reviewed and investigated by the General Manager who shall issue WTA's final decision no later than twenty-one (21) days after receipt.
5. Notice of Protest not received by the timelines listed in #2 above will not be considered. Notice of Appeal in accordance with the timelines specified above will not be considered.
6. All communications with the parties involved shall be in writing and open for public inspection. WTA shall be responsible for compiling and maintaining the written protest record.
7. When a protest has been filed before award, WTA shall not make an award prior to the protest resolution and any appeal, unless the Finance Director determines that:
   a) Reasonable probability exists that the protest will not be upheld
   b) Delaying the award is not in the best interests of WTA
8. Protesters must exhaust the above remedies before pursuing any other protest, including, but not limited to, with FTA. FTA will limit its protest reviews to
   a) WTA did not have protest procedures
   b) WTA did not follow its own protest procedures
   c) WTA failed to review a protest
   d) WTA violated Federal law

If one of the above conditions in #8 is alleged, the protester must deliver its appeal to the FTA Regional Administrator (Region 10) within five (5) working days of the date when the protester has received notice of WTA's final decision. Any appeals must be filed with FTA Regional Administrator (Region 10) within five (5) working days from receipt of notice of FTA's decision if the protester has identified other grounds for appeal to FTA.

1.11 AWARD OF CONTRACT

A. EVALUATION CRITERIA

Contract award shall be to the lowest priced responsive and responsible Bidder as outlined in Division 00 21 13 Section 1.09.

B. NOTICE OF INTENT TO AWARD

Upon confirmation of responsiveness and responsibility, WTA will issue a Notice of Intent to Award to all plan holders.

C. EXECUTION OF CONTRACT

Within fifteen (15) calendar days after the Award date or other agreed on date, the successful Bidder shall return the signed Contract with all required Contract Deliverable Requirements (CDR) outlined in Section 00 70 00 Part 1.31. If the Bidder is unable to return of the Contract documents within the agreed upon date date, WTA may grant additional time, provided WTA deems the circumstances warrant it.

Until WTA's Procurement & Contracts Manager executes a Contract and sends a Notice to Proceed, no bid shall bind WTA nor shall any Work begin. The Contractor bears all risks including costs for Work started and materials ordered before the Contract is fully executed.

Failure to return the required Contract Deliverables with the signed Contract, or failure or refusal to sign the Contract renders the bid non-responsive. WTA may terminate selection of the Bidder or any agreement entered. The Contractor forfeits the bid bond. WTA may award to the second lowest responsible Bidder under the Terms & Conditions of the RFP and bid. If the second lowest responsible Bidder fails to return the

required documents, WTA may, in its discretion, award successively to the remaining lowest responsible Bidders until the above requirements are met.

1.12 PREVAILING WAGES

A. Prevailing Wage in effect at the time of the ITB due date will be paid to all workers, at least for the first year of the contract, unless exempt[11]. The described work may include more positions or less, depending on the final negotiated scope of work. Complete job descriptions can be found in Chapter 296-127 WAC. Contractor is responsible for correct applicability and reporting of Job Descriptions.
B. WTA will withhold five percent (5%) in retainage on each invoice. Retainage will be withheld for the payment of any claims of any person arising from contract performance, or any taxes, increases, or penalties incurred by the Contractor in the performance of this contract[12]. In lieu of withholding, the Contractor may submit a bond for all or any portion of the contract retainage, provided the surety meets requirements listed in Section 00 70 00, 1.28 below[13].
C. Retainage will be released once Procurement receives the required certifications from Department of Revenue, Employment Security Department, and Labor and Industries verifying there are no outstanding claims or liens against the retainage.
D. Contractor and all sub-Contractors must have an approved Intent to Pay Prevailing Wage (CDR #5) with the State of Washington before invoices are paid. Contractor pays required fee with each Statement of Intent and each Affidavit submitted. Those costs may be included in the Base Bid. It is the Contractors responsibility to make sure that the sub-Contractors comply with this part.
E. Contractors and Sub-Contractors file an Affidavit of Wages Paid (CDR #6) at project completion. Contractors ensure that the sub-Contractors comply with this part.
F. Contractor will submit certified payroll reports at least once per month directly to the Department of Labor and Industries through its Prevailing Wage Intent & Affidavit (PWIA) online system. Contractor will keep accurate certified payroll records for three (3) years form the date of project acceptance and makes those records available upon request[14].
G. Post in a visible location(s) at the job site:
    1. a copy of the L&I approved[15] statement of Intent to Pay Prevailing Wages; and
    2. the address and telephone number of the Department of Labor and Industries where a prevailing wage complaint or inquiry may be made.
H. Federal Davis Bacon wage rules do not apply to this Contract.

1.13 STATE, LOCAL & FEDERAL LAWS

The Contractor shall comply with all local, municipal, State and Federal laws and county and local regulations which pertain to this project, including, but not limited to, Bellingham Municipal Code (BMC), Revised Code of Washington (RCW), and Washington Administrative Code (WAC).

1.14 PERFORMANCE and PAYMENT BONDS

The successful Bidder shall provide an executed Performance Bond and a separate executed Payment Bond for 100% of the total Contract amount (Section 00 70 00, 1.31, CDR # 3 and CDR # 4).

Both Bonds shall:
A. Be on Form 00 61 13.13 available from the Procurement & Contracts Manager.
B. Be signed by an approved Surety (or Sureties) that:
    1. Is licensed to conduct business in the State of Washington (or issued as a surplus line by a Washington Surplus lines broker)

[11] RCW 39.12, and WAC 297-127-430
[12] RCW 60.28.011 (1)(a)
[13] RCW 60.28.011 (6)
[14] WAC 296-127-320
[15] RCW 39.12.040

2. Is approved by the State Insurance Commissioner
3. Holds a minimum rating of A- and a financial rating of Class VII or higher in the most recently published edition of the A.M. Best's Key Rating Guide

C. Be conditioned upon the faithful performance of the Contract by the Contractor within the prescribed time.
D. Guarantee that the Surety shall hold harmless, indemnify, defend, and protect WTA against any claim of direct or indirect loss resulting from:
   1. The failure of the Contractor (or any of the employees, sub-Contractors, or sub-sub-Contractors) to faithfully perform the Contract.
   2. The failure of the Contractor (or the sub-Contractors or sub-sub-Contractors) to pay all laborers, mechanics, sub-Contractors, lower tier sub-Contractors, material, person, or any other person who provides supplies or provisions for the Work.
   3. Any claims, demands, suit, judgment or actions arising out of Contractor, sub-Contractor, or sub-sub-Contractor acts or performance of this Contract.
   4. For any liens relating to the Contract.
   5. Any claim brought by an employee of Contractor and to this limited extent only, Contractor shall waive any exclusivity rights under the Washington State Industrial Insurance Act, RCW Title 51.
   6. Such duty to hold harmless, indemnify and defend shall survive the Contract length.
E. Payment Bond will be in effect for the Contract length plus thirty (30) days after final acceptance OR until receipt of release from Department of Revenue, Employment Security, and Department of Labor & Industries, whichever comes first.
F. Performance Bond will be in effect for the Contract length plus one (1) year from the date of final acceptance of project.

Whenever WTA deems the Surety or Sureties to be inadequate, it may require the Contractor to furnish additional Surety to cover any remaining Work. Until the added Surety is furnished, payments on the Contract will stop.

In lieu of a bond, Contractor may submit cashier's checks for the total of both Payment and Performance bonds.

A bid bond will also be required for this project. Refer to Division 00 43 13 Bid Security

END OF SECTION 00 21 13

SECTION 00 23 00 DEFINITIONS

Definitions of all other terms, etc. are in accordance with AIA, ANSI, IEEE, IES, NEMA, etc. standard definitions. Also note there are definitions called out within individual divisions that are scope specific.

A. "Approved" means approved by the Owner. "For approval" means for the Owner's approval.
B. "Architect" means the Architect or the Architect's authorized representative.
C. "As directed" means as directed by the Architect or Owner.
D. "Cardinal Change" shall mean a major deviation from the original scope of work or the intended method of achievement, or a revision of contract work so extensive, significant, or cumulative that, in effect, the Contractor is required to perform very different work from that described in the original contract.
E. "CDR" means Contract Deliverable Requirement. All Contract Deliverable Requirements are listed in section 00 70 00 part 1.31.
F. "C.O." means conduit only; that is, without cable (except, provide pull string or rope).
G. "Concealed" means hidden from sight in trenches, walls, chases, ceilings, etc.
H. "Engineer" means civil or mechanical engineer.
I. "Exposed" means within sight; that is, not concealed as defined above, and installed on the surface of walls, ceilings, etc.
J. "Furnish" means to supply and deliver to the Project, ready for installation and in operable condition.
K. "Install" means to incorporate in the work in final position, complete, anchored, connected, and in operable condition.
L. "N.I.C." means Not in Contract.
M. "Owner" means Whatcom Transportation Authority (WTA)
N. "Product Data" means illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment used in the project.
O. "Provide" means furnish and install.
P. "Provider/Installer" used throughout this section of these specifications and on the drawings shall be understood to mean the Contractor. All other work shall be called out by name.
Q. "Remove" means to remove the existing item indicated and all associated conduit, boxes, cables, etc. to their point of origin and/or destination; except, concealed conduits and flush boxes may be abandoned in place and/or re-used in the new installation. Cables shall be removed and/or replaced.
R. "Replace" means to remove the existing and add in lieu the new as indicated.
S. "Samples" means physical examples which illustrate materials, equipment or workmanship and establish standards to evaluate scope compliance.
T. "Shop Drawings" means drawings, diagrams, schedules and other data specially prepared by the Contractor, sub-Contractor, sub-sub-Contractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

END OF SECTION 00 23 00

SECTION 00 25 13 PREBID CONFERENCE / SITE INSPECTION

All interested Contractors may attend the pre-bid meeting at MOAB, 4011 Bakerview Spur on the date and time outlined in section 00 31 13 Bid Schedule.

Walk through site inspection will follow pre-bid conference.

Attendees will be required to submit to COVID screening as a condition of entry. CDC and the Federal Transportation Administration require all visitors to wear a mask inside WTA buildings regardless of vaccination status.

An Addenda will be issued by the next business day following the inspection time documenting all questions and comments.

The information provided by WTA in an Addenda is not a substitute or supplement for independent verification.

END OF SECTION 00 25 13

SECTION 00 31 13 BID SCHEDULE

Dates preceded by an asterisk (*) are estimated dates. Estimated dates are for information only. All times are shown as Pacific Standard Time.

Activity	Date - 2021
Procurement Request Released	September 7
Pre-Bid Meeting	September 21, 10:00 AM
Final Request for Equals or Clarifications	September 28, no later than 3:00 PM
Bids due in WTA Portal	October 6, no later than 1:00 PM
Public Bid Opening via TEAMS	October 6, 1:30
***Estimated Award Date**	October 21
***Project Start Date**	ASAP

WTA does not guarantee a response to questions submitted to the portal after the clarification deadline has passed. Submissions are not reviewed or considered after they are due.

WTA reserves the right to modify the Procurement Schedule including postponing the date and time for receiving bids. Postponement notices shall be issued to known plan holders in the form of addenda.

Bids can be submitted to the online portal any time up to the due date and time, but no later.

WTA is providing a thirty (30) minute buffer between when bids are due in the portal and bid opening to account for any technical difficulties and allow attendee's to log into Teams for the public opening.

It is the Bidders responsibility to ensure WTA has received their submission prior to bid opening.

Bids must be submitted using WTA's online portal
https://wta.cobblestone.software/gateway/SolicitationPublicSearch.aspx

END OF SECTION 00 31 13

SECTION 00 31 16 PROJECT BUDGET INFO

This project is 100% locally funded. No Federal Transportation Administration (FTA) or Washington State Department of Transportation (WSDOT) Grant funds will be used.

The estimated budget range of the Contract is. $225,000 - $350,000.

END OF SECTION 00 31 16

SECTION 00 31 46 PERMITS

WTA will obtain and pay for the building permit.

Contractor obtains and pays for all other permits, fees, licenses, and inspections as they pertain to the work scope. Copies are submitted as a condition of payment (Section 00 70 00, 1.31, CDR# 7). WTA will not reimburse the Contractor for time lost due to incomplete or incorrect permits, work needed to be redone due to lack of necessary permits, or the need to resubmit applications due to the fault of the Contractor.

END OF SECTION 00 31 46

SECTION 00 41 13 BID FORM – STIPULATED SUM

THIS MUST ACCOMPANY BID

By submitting a bid, Contractor guarantees they have reviewed both the scope and contract requirements. WTA will not approve change orders for items requested in the scope or expectations in the contract, but not included in the bid price.

The bid price will reflect all costs associated with this Contract. Costs should include labor, materials, equipment rentals, overhead, profit, insurance, bonding, permitting, fees, inspections and any other reimbursable project cost. WTA will not waive any requirements for additional costs potentially incurred by the Contractor. For example, the cost to obtain and maintain additional insurance if what is required in this Contract is over and above what the Contractor currently holds and maintains.

Labor	
Materials	
Sub-Total	
Sales Tax	
BID TOTAL	

END OF SECTION 00 41 13

SECTION 00 43 13 BID BOND / BID SECURITY

A. Failure to submit a Bid Bond or Bid Security by the date/time of the bid opening will render the bid non-responsive.
B. All bids must be accompanied by the Bid Security Guarantee 00 61 26 ("Bid Bond") (CDR #8) in an amount equivalent to 5% of the Contractor's total Bid Price plus sales tax[16]. Any alteration of the Bid Security Guarantee form renders bids non-responsive. The Bid Security Guarantee shall be signed by the Bidder and a Surety meeting the same requirements in 00 21 13 Part 1.16.
C. Bid Security Guarantees are due in the form of a cashier's or certified check, money order, or surety bond. WTA holds the bid guarantees of the two (2) lowest responsible Bidders.
D. For electronically submitted Bids, use one (1) of the two (2) following methods:
    a. Electronic Bid Bond: If a secured electronic bid bond has been obtained, provide the number, and link for accessing the bond with the surety company.
    b. Scanned Bid Bond: A scanned copy of the fully signed and notarized Bid Bond form must be uploaded and submitted electronically with the bid. The Attorney's in Fact who signs the Bid Guarantee bonds must file with each bond in a certified and effectively dated copy of their Power of Attorney.
E. In Lieu of a Bid Bond: If the bidder cannot provide a Bid Bond, a cashier's check drawn upon a banking institution may be provided.
    a. Bidder must deliver the postal money order, certified check, or cashier's check in a sealed envelope prior to the date/time of the established bid opening to WTA. Envelope shall be marked as WTA, ITB 2021-231 MOAB REMODEL PHASE 2, 4011 BAKERVIEW SPUR, BELLINGHAM, WA 98226. **DO NOT INCLUDE THE BID!** Bids must be submitted electronically. *The Bidder is responsible to ensure the payment is received by WTA no later than the date/time of the bid opening.*
F. The Bid Bond will be forfeited when the successful Bidder:
    1. Withdraws any or all of its bid after award notification
    or
    2. Refuses or becomes unable to enter into a contract within fifteen (15) days from notice of award
    or
    3. Is unable or refuses to furnish bonds and insurance in the limits and terms provided in 00 70 00 Section 1.28.

    In this event, WTA may proceed with award to the next lowest responsive and responsible Bidder.
G. If the Bidder's Bid Bond does not fully compensate WTA for damages, attorneys' fees and costs caused by default, then the Bidder will pay WTA the difference between the Bid Bond and WTA's total damages.
H. WTA returns bid guarantees belonging to the unsuccessful Bidders as soon as practical after the bid opening. All checks , including those belonging to unsuccessful Bidders, are first deposited to WTA's accounts. Bid Bonds are returned to unsuccessful Bidders in the form of a check in order to provide an adequate audit trail.

END OF SECTION 00 43 13

[16] RCW 39.26.190

SECTION 00 43 93 BID SUBMITTAL CHECKLIST

By submitting a Bid, Bidders agree to be bound by all legal requirements and Contract terms and conditions contained in this ITB.

WTA will not negotiate any aspect of the required service or Contract once the Intent to Award is issued. WTA will not make any concessions for Bidders who are not completely familiar with the scope or Contract requirements.

The following information, forms, and documents shall be completed and submitted as the bid document. Failure to include any requested information and properly completed forms will be cause for immediate bid rejection. The below list is provided only as a convenience. Bidders are responsible for becoming familiar with all aspects of the bid documents and proper completion and submission of the bid.

Bids must be submitted via WTA's online platform. Bids submitted via hard copy mail or other method will be rejected.

- □ Sub-Contractor Qualifications if available (00 21 13 Part 1.08) CDR #10
- □ Bid Form – Stipulated Sum (00 41 13) CDR # 9
- □ Debarment, Compliance, Conflict of Interest (00 45 19) CDR #11
- □ Bid Security – (00 61 26) CDR #8
- □ Bid Confirmation & Cover Sheet with list of references (00 62 11) CDR #12
- □ Certification of Compliance with Wage Payment Statutes (00 62 73.1) CDR #29

Bidders are advised that the following will be incorporated into the final contract:

1. Form of Contract
2. This ITB Request
3. Contractor's Price and completed forms
4. Any issued addenda
5. Purchase Orders
6. Change Orders

Submission of a bid acknowledges that WTA will not enter into a contract that contradicts any of the parts included in the ITB packet.

END OF SECTION 00 43 93

SECTION 00 45 19 DEBARMENT, COMPLIANCE, CONFLICT OF INTEREST

CDR# 11

By submitting a signed bid, Bidders are assuring the WTA of the following:

1. The individual signing the Bid Confirmation & Cover Sheet (Division 00 62 11) is duly authorized to obligate the Contractor to a contract.
2. Bidders are not on the current list of Federal or Washington State debarment lists.
3. Bidders agree to adhere to Americans with Disabilities Act (ADA) requirements.
4. Pursuant to RCW 39.04.162 and RCW 43.60A.200 Bidders, as the Prime Contractor, will award sub-Contracts to veteran-owned businesses whenever possible.
5. Bidders will work to promote employment and opportunity among Disadvantaged Business Enterprises (DBE) as well as small and women/minority owned businesses (MWBE). Neither the Contractor, nor any sub-Contractor shall discriminate in the hiring of employees, contractors, or vendors on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements will be a material breach of the Contract, which may result in its termination or such other remedy as WTA deems appropriate.
6. That no gratuities, in the form of entertainment, gifts or otherwise, were offered or given by the Bidder or any of its agents, employees or representatives, to any official, member or employee of the WTA or other governmental agency with a view toward securing this Contract or securing favorable treatment with respect to the awarding or amending, or the making of any determination with respect to the performance of this contract.
7. The Bidder certifies that it does not maintain or provide for its employees any segregated facility at any of its establishments, and that it does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained.
8. That the Bidder assures that it has no direct or indirect financial or proprietary interest, and that it shall not acquire any such interest, which conflicts in any manner or degree with the services required to be performed under contract and that it shall not employ any person or agent having such interest.
9. That the Bidder assures that it is fully licensed, bonded, and insured. A copy of the successful proposer's certificate of insurance and a completed Form W-9 will be required prior to the issuance of a Notice to Proceed or a Purchase order. WTA will verify Business licenses and/or professional certifications with the issuing State of Washington agencies to establish proposer's qualifications as part of the responsibility determination process.
10. The bid submitted is genuine and not a collusive bid, or made in the interest or on behalf of any person who has a financial or other interest in the award; and Bidder has not directly or indirectly induced or solicited any other competitive Bidder for the work and materials requested on to put a false bid, or coerced any other person or corporation to refrain from bidding; and that Bidder has not in any manner sought by collusion to secure an advantage over any other Bidder(s).

Bidder's Business Name

Signature of Authorized Official*

Printed Name

Title

END OF SECTION 00 45 19

SECTION 00 61 13.13 FAITHFUL PERFORMANCE BOND

FAITHFUL PERFORMANCE BOND – CDR# 3

Whatcom Transportation Authority

CONTRACT NO.

2021 – 231 ITB

WHEREAS Whatcom Transportation Authority (WTA) has awarded to _____ ("Principal"), Contract No. _____, AND

WHEREAS Principal is required under the terms of the Contract to furnish a Bond for the faithful performance of the Contract;

NOW, THEREFORE, we _____, as Principal, and _____, ("Surety"), as Surety, are held and firmly bound unto WTA in the sum of [insert amount], in lawful money of the United States of America, for payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents. In case suit is brought upon this Bond, Surety shall pay reasonable attorneys' fees to WTA in an amount to be fixed by the court. Surety shall not be liable under this Bond for an amount greater than the aggregate penal sum designated in this paragraph, unless expressly agreed to by Surety in response to any change order that increases the cost of the underlying project.

The condition of this obligation is such that, if the hereby-bonded Principal or its heirs, executors, administrators, successors, assigns, or sub-Contractors shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions and agreements in the Contract and any alteration thereof, made as therein provided, all within the time and in the manner therein-designated and in all respects according to their true intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect during performance and for one (1) year after final project acceptance (warranty period).

Further, Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or modification of the Contract, or of the Goods to be furnished thereunder, shall in any way affect its obligations under this Bond, and it does hereby waive notice of any such change, extension of time, alteration, or modification of the Contract or of the Goods and Technical Services to be performed thereunder.

IN WITNESS WHEREOF, three identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety named herein, on the ___ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

By ("Principal") _____

By ("Surety") _____

By ("Agency") _____

END OF SECTION 00 61 13.13

SECTION 00 61 13.13 FAITHFUL PAYMENT BOND

FAITHFUL PAYMENT BOND – CDR# 4

Whatcom Transportation Authority

CONTRACT NO.

2021 – 231 ITB

WHEREAS Whatcom Transportation Authority (WTA) has awarded to _____ ("Principal"), Contract No. _____, AND

WHEREAS Principal is required under the terms of the Contract to furnish a Bond for the faithful payment to all employees, Sub-Contractors, and suppliers of the Contract;

NOW, THEREFORE, we _____, as Principal, and _____, ("Surety"), as Surety, are held and firmly bound unto WTA in the sum of [insert amount], in lawful money of the United States of America, for payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents. In case suit is brought upon this Bond, Surety shall pay reasonable attorneys' fees to WTA in an amount to be fixed by the court. Surety shall not be liable under this Bond for an amount greater than the aggregate penal sum designated in this paragraph, unless expressly agreed to by Surety in response to any change order that increases the cost of the underlying project.

The condition of this obligation is such that, if the hereby-bonded Principal or its heirs, executors, administrators, successors, assigns, or Sub-Contractors shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions and agreements in the Contract and any alteration thereof, made as therein provided, all within the time and in the manner therein-designated and in all respects according to their true intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect during contract performance.

Further, Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or modification of the Contract, or of the Goods to be furnished thereunder, shall in any way affect its obligations under this Bond, and it does hereby waive notice of any such change, extension of time, alteration, or modification of the Contract or of the Goods and Technical Services to be performed thereunder.

IN WITNESS WHEREOF, three identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety named herein, on the ___ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

By ("Principal") _____

By ("Surety") _____

By ("Agency") _____

End of Section 00 61 13.13

SECTION 00 61 26 BID SECURITY GUARANTEE

CDR# 8 – To be used if NOT utilizing an electronic bond platform like Surety200 or Pinnacle Surety

KNOW ALL MEN BY THESE PRESENTS, That we, _____ _____, as PRINCIPAL and _____, a corporation duly organized under the laws of the State of _____, and authorized to do business in the State of Washington, as SURETY, are held and firmly bound unto the WHATCOM TRANSPORTATION AUTHORITY, as OBLIGEE, in the full and penal sum of five percent (5%) of the total amount of the bid proposal of said PRINCIPAL for the work hereinafter described, for the payment of which, well and truly to be made, we bind our heirs, executors, administrators and assigns, and successors and assigns, jointly and severally by these presents.

The condition of this bond is such, that whereas the PRINCIPAL is herewith submitting its sealed proposal for the following construction, to wit: PROJECT # 2021 - 231 MOAB REMODEL PHASE 2 said bid and proposal, by reference thereto, being made a part hereof.

NOW, THEREFORE, If the said proposal bid by the PRINCIPAL be accepted, and the contract be awarded to said PRINCIPAL, and if said PRINCIPAL shall duly make and enter into and execute said contract and shall furnish bonds as required by the OBLIGEE within a period of twenty (20) days from and after said award, exclusive of the day of such award, then this bond shall be null and void, otherwise it shall remain and be in full force and effect. Alternatively, if the PRINCIPAL, after submitting a bid for the above named project, is awarded the contract and fails to provide bonds acceptable to the OBLIGEE, the PRINCIPAL shall forfeit to the OBLIGEE and pay the penal amount of the Bid Deposit.

IN TESTIMONY WHEREOF, The PRINCIPAL and SURETY have caused these presents to be signed and sealed this _____ day of _____, 20__.

By _____
Principal

By _____
Surety

_____
Contractor Name

END OF SECTION 00 61 26

SECTION 00 62 11 BID CONFIRMATION & COVER SHEET

THIS MUST ACCOMPANY BID
CDR# 12

All fields must be completed where applicable. Failure to fully complete this form will result in bid rejection.

Business Name:		
Type of Business ☐ Sole Proprietorship ☐ Partnership ☐ Corporation (State of Incorporation _____) ☐ Other		
Physical Business Address (Must NOT be a PO Box)		
City	State	Zip Code
Business Telephone #	Business Fax #	Business Email
Washington State UBI #	EIN#	**Contractor License #**[17]
Receipt is hereby acknowledged of Addenda No(s): ____ ____ ____ ___ ____ **NOTE: Failure to acknowledge receipt of addenda will be considered non-responsive**		

"I declare under penalty of perjury under the laws of the State of Washington that the bid submitted is genuine. This bid is not false or made on behalf of any person who has an interest in the award. No other proposer has been solicited to put a false bid, adjust their price lists, or coerced any other company to refrain from bidding. I guarantee that my firm has not attempted to secure an advantage over any other Bidder through collusion. All statements and information contained in the submitted bid are true, correct, and based on the requested scope of work. All employees and agents of the Bidder are skilled and experienced in the required work. In the event that the Project or any aspect of the project is found to be non-compliant, I understand my company will be held responsible to remedy all deficiencies at no additional cost. My signature below assures WTA that the firm acknowledges and will comply with this solicitation."	
Signature of Authorized Officer/Agent	**Date**
Print Name & Title	*The individual named herein is duly authorized to obligate the firm to a contract.*

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

On a separate sheet, provide the following information about five (5) customers for whom you have performed similar service for in the last three (3) years.

- □ Business Name
- □ Address
- □ Contact Name, Phone number, Email address
- □ Length of performance
- □ Service performed
- □ Total contract value

END OF SECTION 00 62 11

[17] RCW 18.27.

SECTION 00 62 73 APPLICATION FOR PROGRESS PAYMENT

CDR# 13 TO BE SUBMITTED WITH AN INVOICE
(A file for editing will be forwarded to the awarded Contractor at confirmation of award)

APPLICATION FOR PROGRESS PAYMENT
Progress Payment No. _____ Contractor Invoice Number:

Purchase Order No:		**For Period Thru:**	
Project:		**Prime Contractor:**	
Sub-Contractors Used During Pay Period-If None Used, Insert "None Used"			
CONTRACT AMOUNTS			
1	Original Contract Amount (Without Tax)		
2	Change Orders (1 through __) (Without Tax)		
3	Additional Unit Price Work (Without Tax)		
4	Total Contract Amount (Items 1, 2, and 3)	$	-
AMOUNT DUE CONTRACTOR THIS DATE			
5	Total Work Not Subject to Sales Tax Completed to Date		
6	Total Work Subject to Sales Tax Completed to Date		
7	Total Amount of Work Completed to Date (Items 5 and 6)	$	-
8	Sales Tax (8.7% of Item 6)	$	-
9	Total (Items 7 and 8)	$	-
10	Retainage (5% of Item 7)	$	-
11	Total less Retainage (Item 9 minus Item 10)	$	-
12	Previous Payments (Total of Item 11 from Previous Payment)		
13	**Amount Due Contractor This Date (Item 11 minus Item 12)**	**$**	**-**
RETAINAGE ACCOUNT			
14	Retainage to Date (Item 10)	$	-
15	Prior Retainage (Total of Item 14 from Previous Payment)		
16	Total Retainage Held	$	-
TO BE COMPLETED BY WTA PURCHASING & CONTRACTS COORDINATOR			
Retainage Instructions: ( ) Held by WTA; ( ) Interest Bearing Acct; ( ) Escrow Acct; ( ) Retainage Bond Bank Name:		Account No.	
Statement of Intent to Pay Prevailing Wages:	[ ] Received	[ ] Not Received	
A certified copy MUST be on file for general and all sub-Contractors before payment can be made.			
L&I Industrial Insurance Premiums	[ ] Current	[ ] Not Current	
Payment of premiums must be current for general and all sub-Contractors before LAST payment can be made.			
CONTRACTOR ACKNOWLEDGES PAYMENT OF PREVAILING WAGES			
Contractor confirms that prevailing wages have been paid in accordance with the pre-filed Statement(s) of Intent to Pay Prevailing Wages on file with the WA State Department of L&I. Contractor further confirms all required state and federal taxes and fees owed in relationship to the work performed for WTA have been paid and are current, all wages due to employees and associated burden for work performed for WTA have been paid, and all applicable licenses for the business operation are active and in good standing.			
Submitted by Contractor		Recommended by Project Engineer/Project Manager	
Date:		Date:	
Approved by WTA GM (if >$30,000)		Reviewed by WTA Procurement & Contracts Manager	
Date:		Date:	

SECTION 00 62 73.1 CERTIFICATION OF COMPLIANCE WITH WAGE PAYMENT STATUTES

The Bidder hereby certifies that, within the three-year (3-year) period immediately preceding the Bid Due date in Section 00 31 13 the Bidder is not a "willful" violator, as defined in RCW 49.48.082, of any provision of RCW Chapters 49.46, 49.48, or 49.52, 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 under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

_____
Bidder's Business Name

_____
Signature of Authorized Official*

_____
Printed Name

_____
Title

_____
Date City State
Check One:

Sole Proprietorship ☐ Partnership ☐ Joint Venture ☐ Corporation ☐

State of Incorporation, or if not a corporation, State where business entity was formed:

If a co-partnership, give firm name under which business is transacted:

* If a corporation, proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If a co-partnership, proposal must be executed by a partner.

SECTION 00 70 00 CONDITIONS OF THE CONTRACT

These general conditions will be incorporated into the final contract through reference and may only be amended by consent of WTA and the Contractor in writing. Bidders are advised that they are required to adhere to the terms and conditions of this solicitation and any approved alternates. WTA will not negotiate any aspect of the required service or Contract it is executed. WTA will not make any concessions for Bidders who are not completely familiar with the scope or contract requirements.

1.01 CONTRACT DETAILS

Until WTA executes a Contract and sends a Notice to Proceed or a Purchase Order, no bid shall bind WTA nor shall any Work begin. The Contractor bears all risks including costs for Work started and materials ordered before the Notice to Proceed is issued or a Purchase Order is received.

A. Total performance will not exceed one hundred twenty (120) calendar days or four (4) months.
B. Within fifteen (15) calendar days after the Award date or other agreed on date, the successful Bidder shall return the signed Contract with all required Contract Deliverable Requirements (CDR) outlined in Section 00 70 00 Part 1.31. If the Bidder is unable to return of the Contract documents within fifteen (15) calendar days after the Award date, WTA may grant additional time, provided WTA deems the circumstances warrant it.
C. As a condition of receiving a notice to proceed, the Contractor will be required to submit a Schedule of Values (CDR# 2). These costs will include, but are not limited to labor, materials, shipping, disposal, permitting, and equipment.
D. If Contractor refuses to execute the Contract, provide a Schedule of Values (CDR# 2), furnish a performance bond (CDR# 3), or provide proof of insurance (CDR# 1) within fifteen (15) days of Contract award, WTA may, in its discretion, deem the Bidder's submission of the original bid and WTA's award as the creation of an enforceable contract and seek to enforce the contract or seek damages; withdraw the award; retain the bid bond and award the Contract to another Bidder; reissue the solicitation; or terminate selection of the Bidder or any agreement entered.
E. This will be a Firm Fixed Price contract with Net thirty (30) day term for any agreed upon Progress Payment Schedule. WTA will consider shorter payment terms if accompanied by a cash discount. An Application for Progress Payment (00 62 73) is required to be submitted with an invoice. WTA will not approve payments without both documents. The payment process is outlined in Section 01 29 76.
F. WTA CONTRACTING REPRESENTATIVES
    1. Monitoring of Contract compliance, including Prevailing Wage monitoring and oversight, issuing the Notice to Proceed, Contract Administration, Change Orders, Bond Management, , and Purchase Order issuance is the responsibility of the Procurement & Contracts Manager: Magan Waltari, 360.788.9332, maganw@ridewta.com
    2. The Director of Fleet and Facilities shall be the Project Manager ("Project Manager"), and will be responsible for oversight of the Architect, Contractor, Sub-Contractors, and day-to-day project work. The majority of Contractors communications after Contract execution will be with the Project Manager: Mike Bozzo, 360.746-4135, mikeb@ridewta.com

1.02 CONSTRUCTION PROGRESS

The Contractor shall furnish and monitor manpower, materials, facilities, and equipment necessary to insure work performance and completion within the approved schedule. If work falls ten (10) working days or more behind the accepted schedule, WTA may declare the Contractor to be in breach and/or demand that the Contractor:

1. Increase manpower.
2. Increase the number of working hours or days, or the amount of equipment, or any combination thereof.
3. Reschedule activities with WTA approval.

Contractor shall provide a schedule revision demonstrating a plan to return the project to the accepted schedule. The construction schedule shall be adjusted, upon written approval by WTA's Project Manager.

The Contractor shall pay all costs to return the project to its accepted schedule.

1.03 DELAYS

A. NOTICE OF DELAYS: Contractor shall notify WTA's Project Manager and Procurement & Contracts Manager in writing of any foreseen or unanticipated delay. The Contractor shall take immediate steps to prevent the occurrence or continuance of the delay. If this cannot be done, Contractor and WTA's Project Manager shall determine the delay's duration and extent. No claim shall be made for delays not called to WTA's attention within forty-eight (48) hours of the occurrence, or which were reasonably foreseeable.

B. AVOIDABLE DELAYS: Avoidable delays are prevented through the exercise of care, prudence, foresight, and diligence on the part of the Contractor or his sub-Contractors, or foreseeable at the time of bid.

   An extension will not be granted for avoidable delays. The Contractor will be assessed for actual demonstrated costs, fees, and damages incurred by WTA from the work not completing on schedule.

C. UNAVOIDABLE DELAYS: Unavoidable delays are beyond the Contractors control and are unpreventable through exercising care, prudence, foresight, and diligence on the part of the Contractor or sub-Contractors. Delays in completion of the Work due to other Contractors directly employed by WTA interfering with the Contractor's completion of the Work are unavoidable. Otherwise, whether a delay is "unavoidable" shall be subject to WTA's sole determination. Except for WTA caused delays, the Contractor's only remedy for unavoidable delays shall be to seek an extension of time.

   Delays due to weather conditions except those defined in Section 1.27 below, are not unavoidable as the Contractor must plan work allowing for interference by normal weather conditions. Force Majeure delays are unavoidable only if they prevent the Contractor from proceeding with at least seventy-five percent (75%) of the normal labor and equipment force for at least five (5) hours per day.
   In addition to providing notice, the Contractor shall detail the cause and effect of the delay on the construction schedule in writing to WTA's Project Manager. WTA may, at its option, grant a reasonable extension of time when WTA determines that unavoidable delays affect the construction schedule. During such extension of time, neither extra compensation, or engineering inspection and administration, or damages for delay will be charged to the Contractor. It is understood and agreed by the Contractor and WTA that extensions due to unavoidable delays will be granted only for delays preventing project completion within the specified Contract time, and only for time periods as set by WTA in its discretion.

D. Should abnormal conditions prevent the Work from beginning at the usual starting time or prevent the Contractor from proceeding with seventy-five percent (75%) of the normal labor and equipment force for at least five (5) hours per day, Contractor will not be charged for a working day.

E. WTA may grant an extension of time when in the Agency's best interest. Additional time may be conditioned on the Contractor's payment of WTA's actual costs, damages, and fees incurred because of the delay and/or extension. Costs include, but are not limited to, engineering, inspection, general supervision, attorneys' fees, labor costs, and overhead incurred during the extension.

1.04 DISRUPTIONS CAUSED BY LABOR OR OTHER DISPUTES

A. The Contractor shall take all reasonable steps to prevent disputes arising from the performance of work by the Contractor and any sub-Contractors or suppliers from:
   - Disrupting the Work under this Contract
   - Interfering with access to WTA's property

B. If a dispute disrupts or interferes with work or access to WTA property or the work site, the Contractor shall promptly take all reasonable actions to eliminate or minimize the disruption or interference, including but not limited to:
   - Utilizing all reasonable means to prevent unlawful conduct or picketing.
   - Restricting all lawful picketing or other activities to a single property or site entrance.
   - Posting notices advising interested persons and organizations that a particular property or site entrance is for the employees of primary or neutral employers.
   - Policing entrances to ensure that only authorized personnel use them.

- Altering or rerouting the access to the site, upon request of WTA.

In the event unlawful picketing or activity has a secondary impact upon the employees of neutral employers, Contractor will promptly take appropriate action to seek recourse through the appropriate governmental agency or state or federal courts.

C. WTA shall have the right, without additional compensation to the Contractor, to modify or overrule the actions taken in section 1.04(B) above and take appropriate legal action to protect WTA property and interests. Neither the failure to request a specific action be taken, nor the exercise of rights by WTA shall modify or constitute a defense or waiver of the Contractor obligations. Failure by the Contractor to act or comply with WTA directives are considered a material breach of this Contract.
D. The term "dispute" includes labor-related and non-labor-related disputes, whether or not the person or other entities involved have an employment relationship with either the Contractor or WTA. Examples of such disputes include, but are not limited to, informational or other picketing, and all other forms of concerted or non-concerted activity.
E. WTA shall be entitled to recover from the Contractor all attorneys' fees and costs incurred in establishing or enforcing WTA's right to be defended, held harmless, or indemnified.

1.05 LAWS AND REGULATIONS

A. The Contractor shall give the notices required by law and comply with all laws, ordinances, rules, and regulations pertaining to the conduct of the Work. The Contractor shall be liable for violations of the law in connection with Work provided. If the Contractor finds drawings, specifications, or other portions of the project manual differ from any laws, ordinances, rules, or regulations, WTA must be notified promptly in writing. WTA shall immediately review the matter and issue a change order or take action necessary to ensure compliance. Contractor agrees not to perform work known to be contrary to any laws, ordinances, rules or regulations.
B. Contractor shall comply with all Federal, State, county, and local statutes, ordinances, and regulations pertaining to the prevention of environmental pollution and the preservation of public natural resources affected by the Project.
C. Contractor shall obtain and have all local, state and other permits and licenses, and pay all charges, fees and taxes, and give all notices necessary to perform the Work.

1.06 WTA OWNERSHIP AND USE OF INSTRUMENTS OF SERVICE

The Drawings, Specifications, and other documents prepared by the Architect and the Architect's consultants, including those in electronic form and all other Bidding Documents, are the "Instruments of Service" through which the Work to be performed is described. The Contractor may retain one record set. Neither the Contractor nor sub-Contractor at any tier, or material or equipment supplier shall own or claim a copyright in the Instruments of Service. Unless otherwise indicated, the Architect and the Architect's consultants are the authors and retain all common law, statutory, and other reserved rights, in addition to the copyrights. All copies of the Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for upon completion of the Work. The Instruments of Service and any copies furnished to the Contractor are for use solely with respect to this Project. They are not to be used by the Contractor or any sub-Contractor, sub-sub-Contractor, or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of WTA, Architect and the Architect's consultants. The Contractor, sub-Contractors at all tiers, and material or equipment suppliers are authorized to use and reproduce applicable portions of the Instruments of Service for the execution of Work. All copies made under this authorization shall bear the statutory copyright notice, if any. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in deviation of copyrights or other reserved rights.

1.07 WTA-CONTRACTOR RELATIONS

A. AUTHORITY OF WTA, THE GENERAL MANAGER AND DESIGNATED PERSONNEL
WTA, acting through the WTA General Manager (GM), the Project Manager, the Procurement & Contracts Manager, and other designated WTA Personnel, shall be the sole judge of the work and materials with respect to quantity and quality as described. The Contract Documents describe the nature of the completed

Work and do not intend to control the means or method of performing the Work except where the nature of the completed Work is dependent on the method of performance.

1. GENERAL. The GM or the GM's designated personnel shall act on behalf of WTA on change orders, extensions in time, progress payments, Contract interpretation, and administrative decisions, acceptability of the Contractor's Work, early possession, assessment of damages, and all other matters related to administration of this Contract.
2. PROGRESS PAYMENTS. WTA's Project Manager shall accept or reject requests for progress payments which have been submitted by the Contractor.
3. CONSTRUCTION RELATED DECISIONS. Should the Contractor disagree with the Project Manager's decision in construction-related matters, the Contractor may request that the GM review the Project Manager's decision and make a determination on behalf of WTA.
4. ACCEPTABILITY OF WORK. The Project Manager shall make determinations of the acceptability of the Work and accept or reject retention of defective Work.
5. WTA'S RIGHT TO STOP THE WORK. If the Contractor fails to immediately correct deficient Work or persistently fails to carry out Work according to the Contract Documents, WTA may take such actions allowed herein and by law in its discretion, including, but not limited to, issue a written Notice to Cure as outlined in 1.16 below.
6. EARLY POSSESSION. The Project Manager shall determine whether to take early possession.
7. ASSESSMENT OF DAMAGES. The GM shall determine amounts to be assessed as damages.

B. USE OF CONTRACTORS PLANT & EQUIPMENT
WTA has right to use the Contractor's plant and equipment for the performance of Work at the site in the event of an emergency or if Contractor is unable to perform a piece of work. WTA agrees that use of plant and equipment will be considered as extra work and paid for accordingly, unless such use is necessary to protect or preserve the work from damage threatened or caused by Force Majeure or Contractor breach of contract.

C. AUTHORITY & RESPONSIBILITY OF CONTRACTOR
1. CONTRACTOR'S REPRESENTATIVE: The Contractor shall provide the name of the Contractor's Representative and a designated alternate. The designated alternate has the authority to act in matters relating to this Contract when the Contractor's Representative is unavailable. The Contractor's Representative shall supervise the Work ensuring the provisions of the Contract are followed. The Contractor's Representative shall have the authority to act in all matters relating to this Contract unless WTA is advised in writing of any limitations. The Contractor shall provide full-time supervision whenever its employees, sub-Contractors or suppliers are performing work under this Contract.
2. CONSTRUCTION PROCEDURES: The Contractor shall actively supervise and direct the Work at all times. The Contractor determines the means, methods, techniques, sequences, and procedures of construction, except where the Contract Documents define the quality or sequencing of an item of work, or specify a means, method, technique, sequence or procedure.
3. SUB-CONTRACTORS, MANUFACTURERS AND SUPPLIERS: The Contractor is jointly, severally, and vicariously liable and responsible for the adequacy, timeliness, efficiency, and sufficiency of work performed by its sub-Contractors, manufacturers, suppliers, and their employees. Failure of the Contractor to manage performance of Sub-Contractors, Manufacturers and Suppliers in a manner that ensures timely and accurate project completion may be constituted as breach and subject to contract termination. References in the Contract, if any, to actions required of any person other than WTA or Architect, shall be interpreted as the Contractor's responsibility.
4. CONTRACTOR'S EMPLOYEES: Contractor and sub-Contractor workers shall have sufficient knowledge, skill and experience to properly perform their work. Any employee determined by WTA not to be sufficiently qualified to perform assigned work or does not cooperate with WTA shall be removed by the Contractor.
5. INDEPENDENT CONTRACTOR STATUS: The Contractor is considered an independent Contractor for all purposes. The employees of the Contractor, any sub-Contractors, any suppliers, and its employees, are not employees of WTA. As such, the employees of the Contractor, its sub-Contractors, and suppliers shall not be subject to any withholding for tax, social security, or other purposes by WTA. Nor shall such Contractor, sub-Contractor, supplier or employee be entitled to sick leave, pension

benefits, vacation, medical benefits, life insurance, workers or unemployment compensation or the like from WTA.

6. PAYMENT FOR LABOR AND MATERIALS: No later than thirty (30) calendar days after receiving payment from WTA, Contractor and all sub-Contractors shall pay all accounts for labor including, but not limited to, wages, workers' compensation premiums, state unemployment and federal social security payments and other wage and salary deductions required by law. The Contractor and sub-Contractors will pay all accounts for services, equipment, and materials used by it and its sub-Contractors during the performance of work under this Contract within this same time limit. Copies of all invoices paid under this Contract must be submitted with each payment application as a condition of payment approval (CDR # 14). Payment is considered received by the Contractor five (5) working days after the date of payment issue.
7. DAMAGE REMEDY: The Contractor shall promptly remedy damage caused by the Contractor, sub-Contractors, or sub-sub-Contractors. No claim may be made to WTA for compensation in this event.
8. EMPLOYEE OR OPERATOR SAFETY: The Contractor is responsible for conditions of the work site, including safety of all persons and property, during performance of the Work. Contractor shall be responsible for compliance with all pertinent safety standards and regulations established by law, including, but not limited to the Occupational Safety and Health Act of 1970 ("OSHA"), the provisions of the Washington Industrial Safety Act of 1973, any industry specific standards, and all building regulations established by law. In case of conflict between any such requirements, the more stringent regulation or requirement shall apply. The Contractor shall maintain the work site and perform the Work in a manner which meets all legal requirements for a safe work place and does not pose any safety risks to plant operators, the general public, or other employees of WTA. This obligation shall apply continuously and not be limited to normal working hours. When WTA reviews Contractor's performance, it shall not include review of the adequacy of the Contractor's safety measures in, on or near the site of the Work.
    a. The Contractor shall maintain at the work site office, or other well-known place at the work site, all materials (e.g., a first aid kit) necessary for giving first aid to the injured. Contractor shall establish, publish, and make known to all employees the procedures for ensuring immediate removal of injured persons to a hospital or a doctor's care. Employees shall not be permitted to work on the site before the Contractor has established and made known these procedures. If the Contractor's and/or any sub-Contractors work crew consists of five (5) or more employees, the Contractor shall ensure that at least one (1) employee has a valid, effective first aid card.
    b. The Contractor shall have a written Safety Program demonstrating how all applicable safety requirements will be met. The Contractor shall ensure its sub-Contractors have a written Safety Program or formally adopt the Contractor's Safety Program. The Contractor shall designate a Safety Officer who shall be responsible for proper implementation of the Safety Program. The Contractor shall submit a copy of its Safety Program to WTA upon request (CDR# 15). The WTA Project Manager's review of such Program shall not constitute approval or acceptance.
    c. The Contractor shall conduct a monthly safety meeting with all sub-Contractors and others on the site performing work to discuss general and specific safety matters. The Contractor shall provide written notice and record of each meeting to WTA's Project Manager including copies of attendee sign in sheets (CDR# 16).
    d. The Contractor, at its discretion, shall conduct weekly safety meetings with its employees and sub-Contractors. The Contractor shall provide written notice and record of each meeting to WTA's Project Manager including copies of attendee sign in sheets (CDR #17).
    e. There is no acceptable deviation from these safety requirements, regardless of practice in the construction industry. Any violation of OSHA, WISHA, or other safety requirements applicable to the work shall be considered a breach of this Contract.
9. PUBLIC SAFETY AND CONVENIENCE: The Contractor shall ensure the least possible obstruction and inconvenience to vehicular and pedestrian traffic on the WTA property and the residents in the vicinity of the Work. The method of Work will ensure the protection of persons, property, and natural resources. No access point, road, or street shall be closed to the public without written permission of WTA, and the proper governmental authority. Fire hydrants on or adjacent to the work shall be accessible to firefighting equipment at all times. Temporary provisions shall be made by the Contractor to ensure the safe use of sidewalks, private and public driveways, and proper functioning of gutters, sewer inlets,

drainage ditches and culverts, irrigation ditches, and natural water courses, if any, on the work site. Contractor shall take all reasonable steps to maintain as much area as possible as usable by WTA and its employees. Such shall include use by Contractor of reasonably available methods to reduce noise, dust, fumes and other disturbances from the Work.

10. SANITATION: The Contractor shall comply with WAC 296-155-140.
11. HAZARDOUS WASTE AND MATERIALS: The Contractor shall conduct its Work to meet the Contract requirements and applicable laws or regulations related to hazardous materials encountered during performance. The Contractor shall comply with all federal and Washington state hazardous waste laws, including, but not limited to, the Hazardous Waste Management Act RCW Title 70.105 and 105A, Washington State Dangerous Waste regulations, WAC Chapter 17-303, and all other laws and regulations governing hazardous waste generation, storage, transportation, treatment and disposal. Contractor shall not allow the release of any hazardous substance onto any real property, including, but not limited to, WTA's property, as that term is defined under the Washington State Model Toxic's Control Act ("MTCA") and/or the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA").

    Hazardous materials include asbestos, PCBs, radioactive materials, hydrocarbons, explosives and other materials classified by regulatory agencies. If the material proves positive as containing asbestos, such material shall be handled in compliance with WAC 296-62-077 through 296-62-07753. Upon discovery, the Contractor shall give immediate verbal notice and follow with written notice within three (3) days, to the Project Manager and proceed only as directed or set forth in the Specifications. In case of any conflict between any such requirements, the more stringent requirement shall apply.
12. ENVIRONMENTAL STANDARDS: The Contractor shall adhere to WTA's environmental standards with regards to the Work. The Contractor shall comply with all applicable statutes, regulations, laws, ordinances and requirements dealing with the prevention of environmental pollution and the preservation of public natural resources.

D. AUTHORITY OF THE ARCHITECT
    1. The Architect is the entity lawfully practicing architecture identified as such in the Scope of Work and is referred to throughout the Contract Documents as if singular in number.
    2. The Architect may review any substitutions, changes, or equivalents to items in the bid documents and may visit the site at appropriate intervals to:
        - Become familiar with and inform WTA about the progress and quality of any portion of completed Work.
        - Endeavor to guard WTA against defects and deficiencies in the Work.
        - Determine if the Work is being performed in a manner that when fully completed, will meet Contract requirements.
    3. The Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work.
    4. The Architect will not be responsible for the Contractor's failure to perform the Work provided in the Contract Documents. The Architect will not have control over, charge of or be responsible for acts or omissions of the Contractor, sub-Contractors, or any other persons or entities performing portions of the Work.
    5. The Architect, through WTA's Project Manager, will have authority to reject work that does not conform to the Contract Documents. Whenever necessary or advisable, the Architect will have authority to require inspection or testing of the Work whether or not such Work is fabricated, installed or completed. Neither this authority nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Sub-Contractors or other persons or entities performing portions of the Work.
    6. The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.
    7. The Architect shall not have implied or express authority to bind WTA to any contract, change order, modification or other commitment, and at all material times shall be an independent contractor of WTA.

1.09 SERVICE OF NOTICE

All Contract changes, notices, orders, directions, requests, waivers, and other communication must be in writing. Verbal notices will not be accepted. Notice is considered received within five (5) business days after issue. Notice may be given via fax, email, posted at the Work site or mailed to the addresses provided in the Contract. If mailed, any form of communication will be deemed to have given to and received by the parties five (5) business days after the postmark date.

1.10 SUGGESTIONS TO CONTRACTOR

Any plan or method of work suggested by any representative of WTA to the Contractor but not specified in writing by the Contract Documents, and adopted or followed by the Contractor, shall be at the risk and cost of the Contractor. Neither the WTA nor the Architect assume responsibility and will not be held liable for any defects in the work resulting from or caused by use of such plan or method of work. Refer to 01 26 00 for information about Changes to the scope or contract.

1.11 COOPERATION WITH WTA AND ARCHITECT

The Contractor, when requested, shall provide the Project Manager and Architect access to performed Work. The Contractor shall provide information requested in connection with inspection of the Work and administration of this Contract.

1.12 COOPERATION OF OTHERS

The Contractor agrees to permit entry to the Work site by the Project Manager, Architect, other employees of WTA, representatives of federal, state or local agencies, or other Contractors performing work on behalf of WTA. The Contractor shall cooperate with WTA, other Contractors and their employees and shall schedule its work and material disposal so as not to interfere with the activities of WTA or others at the Work site. The Contractor shall remedy any Contractor-caused injury or damage sustained by other Contractors or employees of WTA and other agencies. The Contractor shall coordinate and perform in proper sequence its Work with that of others.

1.13 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Division 01 26 00 below.

1.14 DIFFERING SITE CONDITIONS

A. If the Contractor believes that any technical data is inaccurate, or any physical condition uncovered or revealed at the site differs from that indicated in the Instruments of Service or Contract Documents, the Contractor shall promptly notify WTA's Project Manager in writing before performing any Work. THIS NOTICE SHALL BE MADE WITHIN FIVE (5) DAYS OF DISCOVERY OF SUCH CONDITION. NO CLAIMS OF THE CONTRACTOR UNDER THIS PARAGRAPH WILL BE ALLOWED UNLESS THE CONTRACTOR HAS PROVIDED THE REQUIRED NOTICE.
B. If the WTA Project Manager concurs that an inaccuracy or material difference exists causing an increase or decrease in the Contractor's cost or time required for performance of the Work, a change order shall be submitted for review by WTA (See Contract Modifications 01 26 00). Absent a written response, the question or claim shall be deemed denied upon the tenth (10^{th}) day following receipt.

1.15 CLAIMS & DISPUTES

Contractor must recognize the following procedures in terms of any dispute relating to the interpretation, enforcement or alleged breach of the Contract by WTA:

A. WTA ADMINISTRATIVE REVIEW. Contractor must first submit a request for administrative review and all relative documentation of the dispute to the WTA Project Manager, who shall determine whether the request is within his/her authority, and if so, whether to grant Contractor's relief. If Contractor is not satisfied with the Project Manager's decision, then it/he/she shall submit a request for administrative review of the dispute to the WTA Procurement within ten (10) business days following the Project Manager's decision. Procurement shall determine whether the request is within his/her authority, and if so, whether to grant Contractor's relief.

   If Contractor is not satisfied with Procurement's decision, then it/he/she may submit a request for administrative review of the dispute to the Finance Director or Designee within ten (10) business days after receipt of Procurement's decision. The request to the Finance Director may be made via certified mail, facsimile, or email and will be considered received within three (3) business days of the post mark or send date. Such notice shall include a detailed account of the legal and factual grounds of the protest, all relevant documents, and the Contractor's desired outcome. The Finance Director will provide a written determination within sixty (60) business days of notification unless a resolution is time sensitive in which case a decision will be made within ten (10) business days. If a written decision is not provided within sixty (60) business days or a period agreed upon by the parties, then the Contractor's claim shall be deemed denied by WTA. If Contractor is dissatisfied with the Finance Director's decision, then Contractor shall file an appeal to WTA's General Manager within ten (10) business days of receipt of the Finance Director's decision. The General Manager will make a written determination to the Contractor that shall be final and conclusive within thirty (30) business days. If a written decision is not provided within thirty (30) business days or a period agreed upon by the parties, then the Contractor's claim shall be deemed denied by WTA's General Manager. The General Manager's decision will be considered the final decision of the Administrative Review.

B. MANDATORY MEDIATION. If Contractor is dissatisfied with the General Manager's decision, then it/he/she may submit a Notice of Intent to Mediate to WTA within thirty (30) calendar days following receipt of the General Manager's decision. The parties shall mutually agree upon a mediator and conduct a good faith mediation to occur in Bellingham, Washington. If the parties cannot agree on a mediator, then Contractor shall commence an action within the Superior Court of the State of Washington to seek appointment of a mediator. Such action shall be at Contractor's expense. Such mediation shall occur on a date mutually agreeable to the parties, but no later than sixty (60) days following receipt of Contractor's Notice of Intent to Mediate.

C. ARBITRATION. Any action of Contractor to interpret, enforce or for an alleged breach of the Contract shall be subject to binding arbitration to occur in Bellingham, Washington, pursuant to the American Arbitration Association's ("AAA") Construction Industry Arbitration Rules if the Contract is for construction services, or AAA's Commercial Arbitration Rules in all other cases. Either party may institute such proceeding by providing a Notice of Intent to Arbitrate, or pursuant to RCW Chapter 7.04A. Any arbitration ruling shall be final and may be memorialized as a judgment or challenged under the procedures of RCW Chapter 7.04A. The parties shall equally split the cost of the arbitration, including the arbitrator's fees. The arbitrator shall have the authority to award the prevailing party its/his/her portion of arbitration costs and fees as part of any final ruling, and attorneys' fees and costs.

D. CONTRACTOR'S CONDITIONS TO COMMENCE ARBITRATION AND LIMITATION OF ACTION. Any arbitration by Contractor against WTA shall be conditioned upon its/his/her presentment and participation in a WTA administrative review process, and mediation. Contractor shall commence any arbitration proceeding within the applicable statute of limitations. Notwithstanding the above, WTA agrees that any applicable period of limitations within which the arbitration must be commenced shall be delayed during any administrative procedure process and for ten (10) business days following any mediation, so long as Contractor submits a request for administrative review to the Project Manager of the dispute prior to expiration of the applicable statute of limitations and timely submits a Notice of Intent to Mediate.

E. CONTRACTOR'S OBLIGATION TO CONTINUE WORK. Pending final decision of any administrative review, mediation or arbitration, Contractor shall proceed diligently with the performance of the Contract, unless WTA, in its discretion, terminates the Contract.

   LITIGATION AND ATTORNEYS' FEES: Any proceeding by Contractor to enforce this dispute resolution provision or to enforce any arbitration award, or any action by WTA shall be commenced in the Superior Court for the State of Washington, Whatcom County. Contractor waives any right to challenge the

jurisdiction of this Court. In addition to all other remedies, the substantially prevailing party, as determined by the presiding Whatcom County Superior Court Judge, shall be awarded its costs and fees including, but not limited to reasonable attorneys' fees, and reasonable expert witness fees.

F. NO CONSEQUENTIAL OR INCIDENTAL DAMAGES: No claim for equitable adjustment, extra work, or other claim arising from this Contract will be made by the Contractor for the recovery of consequential or incidental damages, including (without limitation), lost profits, lost opportunities or the like.
G. WTA ACTION OR CLAIM: The procedures set out under this Section shall not apply to any claim that WTA may have regarding the meaning and intent of or arising from the Contract. WTA may choose to submit any such claim to the procedures under this Section or may commence an action against Contractor in the Superior Court for the State of Washington, Whatcom County. The substantially prevailing party, as determined by the presiding Whatcom County Superior Court Judge, shall be awarded its costs and fees including, but not limited to reasonable attorneys' fees, and reasonable expert witness fees.
H. CHOICE OF LAW: The Contract shall be interpreted under the laws of the State of Washington.

1.16 INTERPRETATION OF SPECIFICATIONS AND DRAWINGS

A. GENERAL: The specifications and drawings are intended to be explanatory of each other. Work detailed on the drawings and not in the specifications, or vice versa, shall be executed as if specified in both.
B. SUBMITTAL DOCUMENTS: Upon receipt of notice to proceed, and prior to ordering materials, the Contractor shall provide a complete set of submittals documenting the proposed materials and shop drawings (CDR #18) of the proposed installation, for approval by the WTA.
C. REQUEST FOR CLARIFICATION: In the event the Work is not sufficiently explained, the Contractor shall request further explanation and follow provided directions remaining consistent with the terms of the contract. In the event of doubt or question arising from the true meaning of the specifications or drawings, reference shall be made to the Architect. Should the Contractor disagree, he may appeal in accordance with 00 70 00 Part 1.15.

1.17 DIVISION OF SPECIFICATIONS AND DRAWINGS

Specifications and drawings are divided into groups for convenience. These divisions are not for the purpose of apportioning the Work or responsibility for Work among sub-Contractors, suppliers and manufacturers. The Contractor is responsible for all work shown or described, regardless of location(s) in the Contract.

1.18 DISCREPANCIES IN SPECIFICATIONS AND DRAWINGS

A. ERRORS AND OMISSIONS: If the Contractor, in the course of the Work, becomes aware of any errors or omissions the Project Manager shall immediately be informed in writing. The Project Manager shall promptly review the matter with the Architect. If an error or omission has been made, corrective actions shall be determined and the Contractor advised accordingly. If the corrective work associated with an error or omission increases or decreases the amount of Work called for in the Contract, WTA shall issue an appropriate change order. After discovery of an error or omission by the Contractor, related work performed by the Contractor shall be done at Contractor's risk unless a change order has been signed.
B. CONFLICTING PROVISIONS: In cases of conflict between the specifications and drawings, the most restrictive shall govern. Detail drawings shall govern over general drawings and the Contractor shall not scale the drawings for the purpose of determining critical dimensions. In the event an item of the Work is described differently in more than one (1) location on the drawings and in the specifications, the Contractor shall submit in writing a request for information describing the difference. In this event, the Contractor shall submit supporting information, including bidding or layout documents, necessary for WTA to determine whether the Contract Sum is increased, decreased or unchanged.
C. SUBMITTALS: Where required by the specifications, the Contractor shall submit specified information which will enable the Project Manager to determine whether the Contractor's proposed materials, equipment or methods of work are in compliance with the drawings and specifications (CDR #18).
D. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES:

1. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Submittals are reviewed only for the purpose of checking scope conformance. Submittal review is not conducted to determine the accuracy and completeness of details such as dimensions and quantities, or for substantiating installation instructions or performance of equipment or systems, all of which remain the responsibility of the Contractor.
2. Submittals which are not marked as reviewed and approved by the Contractor may be returned without action.
3. By approving and submitting Shop Drawings, Product Data, Samples and other submittals, the Contractor stipulates they have determined and verified materials, field measurements, and criteria. Contractor also confirms the submittal information has been checked and agrees with requirements of the Work and Contract Documents.
4. The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by WTA.

1.19 CONTRACTOR'S COPIES OF PROJECT MANUALS

A. WTA will furnish the Contractor within seven (7) days after notice to proceed no more than:
   - Three (3) sets of bid documents including half-size drawings,
   - Three (3) sets of full-size drawings and
   - One (1) CD containing the all bid documents and drawings in PDF format.

B. The Contractor is advised that revisions incorporating changes by addenda will not be incorporated into the reduced or full-size drawings furnished under the provisions of this paragraph. Additional copies of the bid documents, if required by the Contractor, will be furnished by WTA at cost. The Contractor shall keep at the construction site at least one (1) set of the bid document specifications and one (1) set of full-size drawings.

1.20 CORRECTION OF DEFECTIVE WORK

When procedures, material, equipment, or workmanship do not meet Contract requirements, the Project Manager shall give Contractor written notice of noncompliance. Within five (5) days from the receipt of notice, or on an alternately agreed upon schedule, the Contractor shall correct the deficiencies at its cost to comply with the Contract. If the Contractor disagrees with the Project Manager's determination and believes that the corrective work should be covered by a change order, it shall immediately follow the Claims & Disputes process outlined in 1.15 above.

1.21 RETENTION OF DEFECTIVE WORK

Prior to project acceptance, WTA may retain non-compliant work if the defect is not of sufficient magnitude or importance to make the work dangerous or undesirable. WTA also may retain defective work, if, in the opinion of the Project Manager and Architect, removal of such work is impractical or will create conditions which are dangerous or undesirable. Reasonable value for defective work shall be determined by WTA and appropriate deductions shall be made to Contractor payments. Final acceptance shall not waive WTA's right to recover an amount representing the deduction for retention of defective work.

1.22 WARRANTY

A. Contractor warrants that all Work performed by it, sub-Contractors and others shall comply with and meet the Instruments of Service, Contract Documents and the Specifications and Drawings, and in addition that all Work shall be performed consistent with the standard of care recognized in the community. For a period of three hundred and sixty-five (365) days, beginning on the date of final acceptance the Contractor shall, upon written notice from WTA, promptly correct any defective work at no charge. If the defective work cannot be corrected, or if WTA rejects the corrected work, the Contractor shall promptly remove it and replace it with non-defective work, at no cost to WTA. WTA is hereby authorized to make corrections if, ten (10) days after giving notice to the Contractor, the Contractor has failed to make or undertake the

corrections, and file a claim against Contractor's performance bond to recoup its costs in correcting the work. In addition, Contractor shall be liable, pay and/or reimburse WTA for all costs and expenses incurred by WTA, including, but not limited to, the payment of any WTA employee salary to perform, supervise or coordinate such work. In case of an emergency where, in the opinion of the GM, delay could cause serious loss, injury or damage, corrections or replacements may be made prior to or concurrent with notice to the Contractor. All fees, costs, and expenses in connection with emergency corrections or replacement, including costs for professional services, will be charged to the Contractor or claimed against the Contractors performance bond. For defective work either corrected or replaced, this guarantee shall be extended for a period equal to one (1) year.

B. Acceptance of the Work shall not terminate any agreement on the part of the Contractor for components of the Work yet to be performed under the Contract, nor a waiver of Contractor's warranty obligations. All agreements shall continue to be binding on the Contractor until they have been fulfilled.
C. This guarantee shall be in addition to the specific guarantee or warranty requirements for equipment and work items indicated in the Specifications, and in addition to any other rights or remedies available to WTA under this Contract or at law.
D.
E. The remedies provided here are in addition to any and all rights that WTA may have to seek recovery against Contractor for failing to comply with the Contract or to perform the Work, including recovery of all damages caused by Contractor, and where appropriate for specific performance. Contractor's actions to replace defective work as set out in this provision shall not preclude WTA from seeking further remedies against Contractor.
F. WTA, or its agents, may inspect and audit all of Contractor's records relating to the Contract or Work. Contractor agrees to retain records relating to the Contract for three (3) years after final payment

1.23 WARRANTY OF TITLE

No material, supplies, equipment, or items shall be purchased subject to any lien, chattel mortgage, conditional sale, or other agreement by which an interest is retained by the Contractor or supplier. The Contractor shall warrant and deliver, install, and incorporate materials, supplies, equipment, goods or items with clear title free from any claims, liens, or charges. Neither the Contractor, sub-Contractors, nor any person, firm nor corporation furnishing material or labor for this Contract shall record, assert, claim or place any lien against WTA or any real or personal property, improvement or accessory of WTA. Nothing, however, shall prevent persons furnishing materials or labor to recover funds under the Performance Bond given by the Contractor. The provisions of this paragraph shall be made a part of all Sub-Contracts and material contracts including goods or services when no formal contract is entered into.

1.24 POSSESSION AND USE OF COMPLETED PORTIONS OF THE WORK

WTA shall have the right to take possession and use completed or partially completed portions of the Work even if the completion time has not expired. Operations and maintenance costs will be borne by the WTA. Taking possession and use shall not be deemed final acceptance. If possession or use by WTA increases the cost of the work, the Contractor may request extra compensation within five (5) days of each occurrence using the Claims process in 1.15 above. The Contractor shall not claim extra compensation for possession of portions of the work specifically required to be placed into use and operation before completion.

1.25 POSSESSION OF INCOMPLETE PORTIONS OF THE PROJECT

Should the Contractor fail to meet any date specified for substantial completion or any portion of the Work requiring early possession and use by WTA, WTA may, after a ten (10) day written notice to the Contractor, take over such portion or all of the Work that is behind schedule. In such case, the Project Manager will prepare a punch list of incomplete portions of the Work (CDR #20). WTA may allow the Contractor reasonable access to the Work site at such times that the operation of the project will not be affected. The Contractor may complete any portion of the Work after giving WTA notice of the intention to do so. The cost of WTA's work will be deducted from amounts due to the Contractor. The substantial completion date will be established as the date when WTA actually begins using the project or portion of the project for its intended purpose.

1.26 ABNORMAL WEATHER CONDITIONS

A. Ice, snow, and other weather conditions may be considered as abnormal at the sole discretion of the Project Manager upon written request by the Contractor. The request shall describe in detail the weather condition, identify the specific work impacts resulting from the weather condition, and be submitted to the Project Manager within five (5) days of the onset of the weather condition.
B. For the purposes of this section, a month shall mean a calendar month and a week shall mean a calendar week of Sunday through Saturday.

1.27 WAIVER OF RIGHTS

Except as provided, no action or intention on the part of the Contractor, WTA or Architect at any time with respect to the exercise of any right or remedies awarded them under this Contract shall be deemed to be a waiver on the part of the Contractor and WTA of any of their rights or remedies. No waiver shall be effective except in writing by the party to be charged. No waiver of one right or remedy shall act as a waiver of any other right or remedy or as a subsequent waiver of the same right or remedy.

1.28 LIABILITY AND INSURANCE REQUIREMENTS

WTA will not agree to any liability limitation on a Contractor, sub-Contractor, sub-sub-Contractor, manufacturer, supplier, or provider for goods or services acquired by this Contract.

A. LIABILITY OF CONTRACTOR, INDEMNITY, DUTY TO DEFEND AND HOLD HARMLESS
The Contractor shall be liable for any and all losses or damages from whatever cause occurring on or to any part of the work. The Contractor shall not be liable for losses or damages caused solely by the act of WTA.

The Contractor shall be liable for damages and injury to persons owning property on or in the vicinity of the work, or which occur from the Contractor's performance of this contract. The Contractor's liability shall not be dependent upon whether or not such damage or injury is caused by Contractor negligence, or whether or not such damage or injury is caused by the inherent nature of the work as specified.

WTA is unable to agree to any limitation of liability in the event of a claim or issued judgment through the performance of a contract. This is considered a gift of public funds and is unenforceable by the Washington State Constitution[18].

The Contractor shall defend, indemnify, and hold harmless the WTA its officers, employees, and agents from any and every claim and risk and all losses, damages, demands, suits, judgments, and attorneys' fees, and other expenses of any kind, on account of injury to or death of any and all persons(s) and on account of all property damages of any kind, whether tangible or intangible, real and/or personal including loss of use resulting in connection with work performed by the Contractor or its sub-Contractors, employees or agents, or caused in whole or in part by the Contractor or its sub-Contractors, or their property, employees, or agents, upon or in proximity to the property, or any other property upon which the Contractor is performing any work in connection with this Contract, except only for those losses resulting solely from the negligence of WTA its officers, employees, and agents. It is further specifically and expressly understood that the indemnification provided extends to any claim and risk and all losses, damages, demands, suits, judgments made by an employee of Contractor or its sub-Contractors, and such constitutes Contractor's waiver of immunity and for exclusivity under Washington State Industrial Insurance Act, RCW Title 51, solely for the purpose of the indemnification. This waiver has been mutually negotiated by the parties.

If the presence of any Hazardous Material brought upon, kept or used in or about any WTA property by Contractor, its employees, sub-Contractors, sub-sub-Contractors or suppliers, Contractor, results in any

[18] Washington State Constitution, Article VIII, Section 7 "Credit Not to be Loaned"

unlawful release of Hazardous Material on the WTA property or any other property, Contractor shall promptly take all actions, at its sole expense, as are necessary to return the impacted property(ies) or any other property to the condition existing prior to the release of any such Hazardous Material; provided that WTA's approval of such actions shall first be obtained. As used herein, the term "Hazardous Materials" means any hazardous, dangerous, toxic, or harmful substance, material, or waste, including any pesticides or dangerous chemicals as defined under MTCA or CERCLA. The provisions of this section shall survive expiration or termination of the Contract.

If a lawsuit that falls within the terms of this indemnity, duty to defend and hold harmless provision ensues, WTA is entitle to select counsel to represent it, and the Contractor shall pay directly all costs, attorneys' fees, and expenses associated with the representation and defense, and if judgement is rendered or settlement made requiring payment of damages by the WTA, its officers, agents, employees, and volunteers, the Contractor shall pay the same.

If legal proceedings are brought against WTA, the Project Manager, the Architect, or their officers, principals, agents, sub-Contractors, or employees, on account of loss or damage sustained by person(s) or property as a result of the performance of the Work, the Contractor agrees to defend, hold harmless, indemnify, and pay, in full, all expenses incurred and all judgments against WTA, the Project Manager, the Architect, or their officers, principals, agents, sub-Contractors, or employees, in such proceedings.

Contractor shall not allow any liens or other encumbrances to be placed on WTA real or personal property and shall timely pay any and all amounts due and owing to suppliers, sub-Contractors and others. Failure to do so is considered breach of contract and subject to termination under the provisions herein. WTA may demand a certification or lien waiver as a condition of payment of any amounts due and owing to the Contractor.

In the event a lien is placed against the property of the WTA, Project Manager, Architect, or their officers, principals, agents, sub-Contractors, or employees, Contractor shall remedy the lien by paying such lien in full, giving a bond in an amount satisfactory to the owner of the property subject to the lien, or otherwise as accepted by the owner of the property subject to the lien. The Contractor's agreement to defend and to pay the related expenses shall exist whether or not injuries or damage are due to Contractor negligence, and whether or not such injuries or damage be caused by the inherent nature of the work. Contractor shall defend, hold harmless and indemnify WTA from and against any lien that may be asserted, recorded, filed or alleged by any supplier, sub-Contract or other person arising out of the Work. In the alternative, WTA may, in its discretion, pay all amounts necessary to have any lien removed from its real or personal property, which shall be refunded by Contractor or Performance Bond. WTA may, in its discretion, pay all amounts due and owing on any recorded lien by and through a reduction and offset against any amount due and owing to Contractor.

The mention of specific duties or liabilities imposed on the Contractor shall not be construed as a limitation or restriction of general duties or liabilities imposed by the contract. Reference to specific duties or liabilities is made for the purpose of explanation.

B. INSURANCE

Contractor and sub-Contractors will not begin Work until proof of insurance has been received and approved by WTA's Procurement and Contracts Manager (CDR # 1). The Contractor and sub-Contractor must maintain insurance during the course of the contract plus three (3) years after the date of final acceptance. These insurance limits and coverages will not be reduced or negotiated. Contractors are cautioned that any attempt to provide coverage other than what is listed will render the contract non-compliant, the contract will be terminated, and award will be made to the next lowest responsive and responsible bidder.

Insurers must be licensed to conduct business in the State of Washington (or issued as a surplus line by a Washington Surplus lines broker) and approved by the State Insurance Commissioner. Insurers must have

a minimum rating of A- and a financial rating of Class VII or higher in the most recently published edition of the A.M. Best's Key Rating Guide.

WTA its officials, officers, agents, and employees must be listed as additional insureds.

WTA reserves the right to approve the security of the insurance coverages provided by the Insurance Company(ies), terms, conditions, and the Certificate of Insurance. Failure of the Contractor to fully comply with these requirements will be considered a material breach of contract and will be cause for immediate termination at the option of WTA.

Approval of the insurance by WTA will not relieve or decrease the liability of the Contractor for any damages arising from Contractor's or its Sub-Contractors' performance of the work. Contractor shall bear all damage costs sustained for failure to maintain any of the required insurance or to provide notification that it cannot.

C. MINIMUM INSURANCE COVERAGES AND REQUIREMENTS
The Contractor shall maintain the minimum insurance coverages set forth below. ***These insurance limits and coverages will not be reduced, or negotiated***. Contractors are cautioned that any attempt to provide coverage other than what is listed will render the contract non-compliant, the Contract will be terminated, and award will be made to the next lowest responsive and responsible bidder.

By requiring minimum insurance, WTA shall not be responsible for assessing the risk applicable to the Contractor. The Contractor shall assess its own risks and if it deems appropriate and prudent, maintain higher limits and/or broader coverages. The Contractor is not relieved of any liability or other obligations assumed or pursuant to the Contract by reason of its failure to obtain or maintain insurance in sufficient amounts, duration, or types.

1. Coverages
   a. *Commercial General Liability*. Coverage to include:
      - Property damage, including Premises and Operations, fire damage and medical expense
      - Explosions, Collapse and Underground Hazards
      - Bodily injury/death
      - Products/Completed Operations
      - Liability assumed under an Insured Contract (including defense costs assumed under contract)
      - Broad Form Property Damage
      - Independent Contractors
      - Personal/Advertising Injury
      - On Premises Pollution Coverage Extension (ISO CG 2415 Form or equivalent)
      - Stop Gap Liability
      - Sub-Contractor Liability, if sub-Contractor does not provide their own insurance
      - Protective Liability
   b. *Automobile Liability* including all
      - Owned Vehicles
      - Non-Owned Vehicles
      - Hired Vehicles
      - Stop Gap Liability

      Workers Compensation
      - As required by the State of Washington Labor & Industries
      - Stop Gap Liability
   c. Umbrella Liability
      - Excess of Commercial General Liability, Automobile Liability Limits

d. Contractor and Sub-Contractors must furnish the following endorsements separate of the Certificate of Liability:
    - Additional Insured Endorsement naming "WTA Agents & Employee's" for Ongoing Operations. Endorsement should be on Accord© form CG20100704 or equivalent.
    - Additional Insured Endorsement naming "WTA Agents & Employee's" for Completed Operations. Endorsement should be on Accord© form CG20370704 or equivalent.
    - Waiver of Subrogation naming "WTA Agents & Employee's". Endorsement should be on Accord© form CG24041093 or equivalent.
    - Cancellation Endorsement providing thirty (30) days advance written notice to be received by WTA.

2. Minimum Required Limits
   The Contractor shall carry the following minimum limits of liability:

Commercial General Liability

General Aggregate[19]	$	2,000,000
Products/Completed Operations Aggregate	$	1,000,000
Each Occurrence Limit	$	1,000,000
Personal/Advertising Limit	$	1,000,000
Fire Damage (Any One Fire)	$	100,000
Medical Payments (Any One Person)	$	5,000

Note, Pollution extension is required (CG 2415 or Equivalent); However, a separate pollution policy is acceptable. Indicate this coverage on the Certificate of Insurance.

Automobile Liability

Bodily Injury/Property damage (Each Accident)	$	1,000,000
Personal Injury Protection (*if applicable*)	Statutory	

Worker's Compensation

Show Worker's Compensation L&I Number

Umbrella Liability

Each Occurrence	$	1,000,000
General Aggregate Limit	$	1,000,000
Products/Completed Operations Aggregate	$	1,000,000

Required insurance coverages shall be maintained throughout the term of this Contract and, except for Automobile Liability and Worker's Compensation, a period of three (3) years after the date of substantial completion of the entire project. The Contractor shall promptly advise WTA in the event any general aggregates or other aggregate limits are reduced below the required per occurrence limit. At their own expense the Contractor will reinstate the aggregate limits to comply with the minimum requirements and shall furnish WTA a new Certificate of Insurance showing such coverage is in force.

The Contractor is required to ensure all sub-Contractors and sub-sub-Contractors are insured under the Contractor's policy(ies) or forward separate Certificate of Insurance and mandatory endorsements reflecting the same coverages. All sub-Contractors and sub-sub-Contractors are required to comply with the coverages and limit requirements outlined in this document.

D. ADDITIONAL REQUIREMENTS
   All policies of insurance described above shall:
   1. Be on a primary basis, non-contributory with any other insurance coverages and/or self-insurance carried by the WTA.
   2. Include a Waiver of Subrogation Clause.

[19] *General Aggregate to apply per project (ISO Form CG2503 or equivalent).*

3. Separation of Insureds Clause (Cross Liability)
4. If cancelled or non-renewed, the policy must be replaced with another policy of equal coverage.
5. A renewal certificate be provided at least 15 days prior to expiration.
6. Proof of General Liability (Products / Completed Operations) be provided for three (3) years after the completion of the project.

E. LITIGATION EXPENSES
In any legal action arising from the Contractor's obligations under this section or asserting claims that the Contractor has not met the requirements of the Contract Documents, the prevailing party shall recover its reasonable attorneys' fees and litigation costs.

1.29 PUBLIC DISCLOSURE LAW

WTA complies with Washington's Public Records Act, RCW Chapter 42.56 and considers the release prior to an award of a bid containing protocol and specifics of a proposed item, including the cost to WTA, as "valuable formulae, designs, drawings, computer code or object code, and research data" whose disclosure would produce private gain and public loss, and therefore may be asserted as exempt by WTA from public disclosure.

All submittals become the property of WTA and may be subject to public disclosure after award. After an award, bid documents will be disclosed if a Public Disclosure Request (PDR) is submitted and no exemption applies. It is the Proposers responsibility to be familiar with RCW Chapter 42.56 and WTA's confidentiality obligations and limitations.

WTA will not execute non-disclosure agreements[20].

Proposals Marked Confidential:

If WTA receives any public disclosure request that includes a request for all or a portion of any proposal, WTA is required to comply with this request under RCW Chapter 42.56, subject to any exception that may apply to WTA. Nonetheless, any information provided by any Proposer labeled "Confidential" or "Proprietary" but does not, in WTA's opinion, fall into an exception from public disclosure, will be initially withheld and WTA will notify the Proposer of the request. WTA will continue to withhold the confidential or proprietary labeled materials for a total of fourteen (14) days after providing notice. Thereafter, WTA shall release the confidential or proprietary materials pursuant to the public records request, subject to any court order or injunction that Bidder may obtain.

The Proposer assumes all costs of any legal actions, and shall reimburse WTA for administrative, expert costs, and attorneys' fees it incurs arising from dealing with Bidder's desire to avoid public disclosure and/or labeling of any portion of the bid as "Confidential" or "Proprietary," including those arising from any legal action commenced by Bidder. Submission of a bid is agreement with this section.

Public Records Application to Documents of Contractor

As a public contract, all records prepared, generated or used by a Contractor or its agents, employees and sub-Contractors relating to the contract and associated work will be subject to being a "Public Record" under RCW Chapter 42.56. Bidder, if selected, shall maintain and retain all such records in a manner that is accessible and WTA shall have the right to review and inspect such records upon request, for a term of three (3) years following completion of the contract work. All records subject to a public disclosure request will be provided to a requester. WTA may only refrain from disclosing any record based upon an exemption that is applicable to WTA, and will not refrain from disclosing any record under an exemption that may be personal to the Contractor. Contractor will need to seek judicial approval to prevent such disclosure, at its expense. Contractor, if selected, shall insert this provision in all contracts with sub-Contractors or agents providing services relating to the contract.

[20] RCW Chapter 42.56

1.30 SUSPENSION OF WORK, OPPORTUNITY TO CURE, TERMINATION

A. SUSPENSION PROCEDURES

WTA may at any time and without cause, suspend all or any part of the work in writing to the Contractor. The work shall be resumed by the Contractor within five (5) days after receiving written notice from the WTA. The Contractor will be allowed an increase in the Contract Sum, an extension of Contract Time, or both, directly attributable to any suspension if a claim is filed. However, the Contractor shall not be entitled to any increase if the cause of the suspension is based on or due to fault of the Contractor. If WTA does not give notice in writing to the Contractor to resume work at a date within ninety (90) days of the date of the notice to suspend, then the Contract shall be assumed to be terminated and the Contractor shall be entitled to compensation.

If a Stay Home, Stay Healthy order, or similar state or federal government directive, is issued, the Contract and Sub-Contractors shall continue to diligently prosecute Work on this project in compliance with the requirements of the state or federal government directive.

If a Stay Home, Stay Healthy Work order or similar government direct is issued after Notice to Proceed has been issued, and Work on this Project is deemed non-essential under the directive, the Contractor will cease operations in accordance with the state or federal directive.

1. The CONTRACTOR will be responsible to ensure the following during the work suspension:

    a. Safety
    b. Site controls, including but not limited to, protection and prevention of damage to the Work including materials and equipment delivered to the construction site and not yet incorporated into the Work and Port property, ensuring the site does not impede WTA operations

2. The CONTRACTOR shall be allowed an extension of the Contract Time equal to the length of the state or federal directive. WTA will issue a Notice to Resume work once the state or federal directive has been lifted.
3. The CONTRACTOR shall diligently work to minimize any additional costs incurred as a result of the state or federal directive. The CONTRACTOR shall notify WTA using the Delay's process outlined in 1.03 above if any documented and justifiable costs associated with the suspension of Work are incurred.

B. OPPORTUNITY TO CURE

Where Contractor has breached this Contract, WTA may, in its sole discretion, allow Contractor up to thirty (30) calendar days to cure the breach. In such case, WTA will detail in writing what Contractor must do to remedy the breach. If Contractor does not satisfactorily remedy the breach, WTA may terminate the contract without any further obligation to Contractor.

C. TERMINATION BY WTA FOR CAUSE.

1. WTA may terminate the Contract if the Contractor:
    a. Refuses to supply enough properly skilled workers or proper materials.
    b. Fails to make payment to sub-Contractors for materials or labor in accordance with the respective agreements between the Contractor and sub-Contractors.
    c. Consistently disregards laws, ordinances, Executive Orders, or rules, regulations or orders of a public authority having jurisdiction.
    d. Otherwise is guilty of material breach of a provision of the Contract Documents.
2. When any of the above reasons exist WTA may without prejudice to any other rights or remedies and after giving the Contractor and the Contractor's surety, if any, seven (7) days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:
    a. Take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor.
    b. Accept assignment of Sub-Contracts.

3. Finish the Work by whatever reasonable method WTA may deem expedient and submit costs to the Contractor for compensation. In such case WTA shall furnish a detailed accounting of the costs incurred in finishing the work.

D. TERMINATION BY WTA FOR CONVENIENCE:

1. WTA may, at its option, terminate the entire Contract, or portions of the Work not performed by written notice (sometimes referred to below as “Notice of Termination”) to the Contractor, whether or not the Contractor is in breach or default. Upon receipt of any Notice of Termination, the Contractor shall, unless otherwise directed by WTA:
   a. Discontinue performance of the Work on the date and to the extent specified in the Notice of Termination.
   b. Cease placing or entering into agreements with any sub-Contractor for material, equipment, services or facilities, except as may be necessary for completion of the portion of Work not terminated.
   c. In the manner and at the times and to the extent directed by WTA, either terminate or assign to WTA the Contractor’s right, title, and interest under the agreements with any sub-Contractors to the extent relating to Work terminated by the Notice of Termination.
   d. Transfer title and deliver to WTA in the manner directed by WTA
      1) The materials, equipment, work in progress completed work, and other items produced or acquired in connection with the performance of the terminated Work.
      2) The completed or partially completed plans, drawings, information and other property which, if the Contract had been completed, would have been required to be furnished to WTA.
   e. Settle all outstanding liabilities and all claims arising out of any termination directed by WTA.
   f. Use best efforts to minimize costs and expenses due to termination.
   g. Use best efforts to sell, to the extent and at the prices subject to the prior written approval of WTA, any materials, equipment, Work in progress, completed Work and other items produced as a part of, or acquired in connection with, the performance of the Work terminated.
   h. Complete timely performance of such part of the Work as has not been terminated.
   i. Take such actions as may be necessary, or as WTA may direct, for the protection and preservation of the property related to the Contract which is in the possession of the Contractor (whether or not at the Project site) and in which WTA has or may acquire an interest.
2. Within thirty (30) calendar days of receipt of Notice of Termination, the Contractor shall submit claim for work completed. If the Contractor fails to submit its claim within this period, WTA will determine on the basis of information available the amount, if any, due the Contractor by reason of the termination. WTA shall pay the Contractor the amount determined and satisfy all claims of the Contractor.
3. Upon any termination, the Contractor waives any and all claims for additional compensation or damages (including any claim for loss of anticipated profits). The sole remedy of the Contractor shall be to receive payment as provided. Upon termination, the Contractor shall be paid the portion of the Contract Sum associated to all accepted Work and actual reasonable costs not previously paid for. If the Contractor has prepared or fabricated any goods for incorporation at the Project Site, and delivery of such goods to the Project Site, or other place as WTA directs is complete, the Contractor shall be paid for such goods.
4. From the amount due the Contractor, WTA shall deduct (a) all payments made to the Contractor applicable to the terminated portion of the Contract, (b) any claim which WTA may have against the Contractor in connection with the Work or the Contract, and (c) the agreed price for, or the proceeds of sale of, any materials, supplies or other things kept by the Contractor or sold, and not otherwise recovered by or credited to WTA.
5. In the event of any termination of all or any portion of the Work, WTA may take over the Work as to which the Contract is terminated and complete it.
6. Contractor shall maintain and retain all such records in a manner that is accessible. WTA shall have the right to review and inspect such records upon request, for a term of three (3) years from the effective date of termination. All records subject to a public disclosure request will be provided to a requester.
7. In the event that funding is withdrawn, reduced, or limited in any way after the effective date of this Agreement, and prior to its normal completion, WTA may terminate this contract for convenience.

E. TERMINATION BY CONTRACTOR:

1. The Contractor may terminate the Contract if the Work is stopped for a period of ninety (90) consecutive days for any of the following reasons:
   a. Issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped.
   b. An act of government, such as a declaration of national emergency which requires all Work to be stopped.
   c. WTA has not issued payment and has not notified the Contractor of the reason for withholding payment.
   d. Repeated suspensions, delays or interruptions of the Work by WTA totaling more than one hundred percent (100%) of the total number of days scheduled for completion, or one hundred twenty (120) days in any three hundred sixty-five (365)-day period, whichever is less.
2. If one of the reasons described exists, the Contractor may, upon fifteen (15) days' written notice to WTA, terminate the Contract. The Contractor shall satisfy and comply with those applicable provisions and be paid upon termination.

F. WTA OWNERSHIP OF MATERIALS UPON TERMINATION:
As of the date of termination, the entire Contractor's right, title, and interest in and to materials ordered prior to the termination, whether or not they have been delivered to the Project Site, shall be delivered to WTA. Contractor shall execute and deliver all requisite bills of sale, assignments, and other documents of transfer that may be necessary.

1.31 COVID OR OTHER PANDEMIC PROTOCOLS

Contractor will follow any COVID or other pandemic protocols in place in the performance of this Contract, including, but not limited to protocols adopted by WTA. Protocols may include, but not be limited to:

- Daily temperature and health screening attestations
- Masking of all Contractor and sub-contractor employees

Contractor, Contractor employees, all sub-Contractors, and all sub-sub-Contractors may be required to follow State and Federal mandates for Transit Agencies, which could include a vaccination requirement. In the event that Transportation agencies are required to be vaccinated, Contractor, Contractor employees and all sub-Contractors on site at WTA will be required to show proof of vaccination in order to be permitted on site.

1.32 CONTRACT DELIVERABLES REQUIREMENTS

The Contract Deliverables Requirements List (CDR) is used by WTA to convey the required contract data documents, type of document and when each document must be submitted to WTA. WTA will not pay the final invoice until all CDR's are received. Please refer to Submittals in section 1.08 of 26 00 10 Basic Electrical Requirements for the format which WTA requires submittals to be provided in.

ABBREVIATIONS: B - With Bid, C – With Contract, I – With Invoice, A – Before Final Acceptance, O - Other

		DATA REQUIRED					
DELIVERABLE	**DESCRIPTION/DEFINITION**	**B**	**C**	**I**	**A**	**O**	**COMMENTS**
CDR # 1	Proof of Insurance		X				MUST meet all requirements in 00 70 00 Part 1.28 unless previously agreed.
CDR # 2	Schedule of Values		X				
CDR # 3	Performance Bond		X				
CDR # 4	Payment Bond		X				
	Retainage Bond		X				ONLY required if opting to not have retainage held from invoice payments
CDR # 5	Intent to Pay Prevailing Wage			X			Required of all sub-contractors also
CDR # 6	Affidavit of Wages Paid					X	Prior to final invoice payment & required of all sub-contractors.
CDR # 7	Permits, fees, licenses & inspections			X			
CDR # 8	Bid Security	X					Also called a Bid Bond. May also submit a check or cash equal to 5% of the bid.
CDR # 9	Bid Form-Stipulated Sum	X					
CDR # 10	List of Sub-Contractors	X					Include UBI and what work they are performing
CDR# 11	Debarment, Conflict of Interest	X					
CDR# 12	Bid Confirmation & Cover Sheet with List of References	X					
CDR # 13	Application for Progress Payment			X			
CDR # 14	Contractor, materials vendor and Sub-Contractor invoices			X			
CDR # 15	Safety Program					X	On request
CDR # 16	Monthly Safety Meeting					X	After they occur
CDR # 17	Weekly Safety Meeting					X	After they occur
CDR # 18	Submittals					X	After receiving Notice to Proceed. Includes proposed materials & shop drawings
CDR # 19	Certificate of Occupancy				X		Per phase. May also be a temporary CO
CDR # 20	Punch List				X		Per phase.
CDR # 22	Action Submittals					X	Minimum 2 weeks before product ordered Per phase
CDR # 23	Sub-Contract List		X				Required to allow proper screening of all subs
CDR # 24	Informational Submittals						Per phase
CDR # 26	Consent of Surety				X		
CDR # 27	Record Drawings				X		
CDR # 28	Operation & Maintenance Manuals				X		
CDR # 29	Certification of Bidder Criteria	X					

END OF SECTION 00 70 00

SECTION 00 73 39 DISADVANTAGED BUSINESS ENTERPRISE (DBE) CONTRACTING

A. WTA participates in the Federal Department of Transportation Disadvantaged Business Enterprise (DBE) program.
B. While this procurement does not require the use of DBE or Small Business Enterprises (SBE), WTA encourages Contractors to utilize them as often as possible or, at a minimum, make a good faith effort to Sub-Contract or purchase goods and equipment from them.
C. A complete list of certified DBE and SBE's can be found at omwbe.wa.gov. Contractors are also encouraged to receive Federal DBE certification where applicable.

END OF SECTION 00 73 39

SECTION 00 73 26 ASSIGNMENT OF CONTRACT

A. The Contract shall not be assigned by Contractor in whole or in part without the written consent of WTA. Involuntary assignment of the Contract due to bankruptcy or receiver appointment from Contractor's insolvency is considered breech of the Contract and subject to termination.
B. The grants, covenants, conditions and claims, rights, powers, privileges and liabilities obtained in the Contract Documents will transfer from the Contractor and WTA to their respective heirs, executors, administrators, successors and assigns.

END OF SECTION 00 73 26

SECTION 00 91 13 ADDENDA

A. Addenda will be issued to all known plan holders should questions, clarifications, or approved equal requests be submitted. It is the Bidders' responsibility to ensure possession of all issued addenda prior to the submission deadline. Addenda must be acknowledged on 00 62 11.
B. Addenda are uploaded to the WTA procurement portal.
C. WTA will not be responsible for Bidders who fail to acknowledge all addenda.
D. Bids not acknowledging addenda will be considered not responsive.

END OF SECTION 00 91 13

SECTION 00 91 16 CLARIFICATIONS, APPROVED EQUALS, & SUBSTITUTIONS

A. To be considered, all requests for clarifications, changes or substitutes to materials, methods, or contract terms must be submitted to WTA's online portal prior to the date noted in Section 00 31 13 Bid Schedule.
B. No substitutions will be reviewed less than one (1) week from bid opening
C. Bids submitted with denied exceptions, rejected deviations, or equals that are not approved will be rejected as non-responsive.
D. Where WTA has identified a particular brand within the specifications, doing so is a means to describe an item with the desired characteristics and not a requirement of the scope. Any brand name used is merely as a reference and not as a statement of a requirement or preference for the product specified and not intended to be restrictive. Proposers are encouraged to submit products and services that operate in a similar fashion and have the same or similar characteristics of what is listed here.
E. Bids submitted with denied exceptions, rejected deviations, or equals that are not approved will be rejected as non-responsive.
F. If the Bidder finds any discrepancy or omission from the bid documents, specifications or plans, or if there is any uncertainty to their meaning, the Bidder shall notify Procurement utilizing WTA's bid portal., .
G. All bids will comply with the contract and scope requirements of this ITB; including the provisions regarding "clarification," "approved equals," and "substitutions." **Where a feature, component, and/or item is specified by brand name in these provisions, the words "or approved equal" will apply.** The Contractor may offer material or equipment of equal or better quality and performance in substitution for those specified.
H. Where WTA approval is required, the Bidder shall submit written requests via WTA's Procurement Portal no later than the date and time outlined in Section 00 31 13 Bid Schedule. The Bidder's request for equals will include sufficient data to assess the acceptability of the material or equipment. The Bidder must provide a detailed cost comparison between what is requested and what is being proposed as an alternate solution. This request must also demonstrate adequate and equivalent performance and durability of what is specified. Should a substitution require changes to or coordination with other portions of the work, Bidder shall include drawings, details, and costs showing such changes. The burden of proof of the merit of the proposed substitute is upon the Bidder. WTA's decision of approval or disapproval of a proposed substitution shall be final.
I. Prior to bid due date, WTA will review the material submitted by the Bidder and advise the Bidder of any objections, request further information, or approve the substitution in writing via WTA's bid portal.
J. While WTA might not take any objections to the proposed substitution, such action shall not relieve the Bidder from responsibility for the efficiency, sufficiency, quality, and performance of the substitute material or equipment, in the same manner and degree as the material and equipment specified by name. Any proposed cost differential associated with a substitution shall be reflected in the bid and, if the substitution is accepted, the Contract Documents shall be modified.
K. Requests may be submitted only by Prime Contractors or their sub-Contractors. No proposed approved equals or substitution requests will be acknowledged from suppliers, distributors, or manufacturers.
L. Bidders desiring alternative or exceptions to any contract terms must submit their requests prior to bid close.
M. Substitutions after contract award must be reviewed and approved by Architect & WTA in writing.

END OF SECTION 00 91 16

DIVISION 01 GENERAL REQUIREMENTS

SECTION 01 10 00 SUMMARY OF WORK

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Project Information.
   2. General Work Description
   3. Phased Construction
   4. Owner Furnished Products
   5. Access to Site
   6. Coordination with owner occupants
   7. Work Restrictions

PART 1 GENERAL

1.01 PROJECT INFORMATION

A. Project Identification: Whatcom Transportation Authority (WTA) Maintenance, Operations and Administration Base (MOAB) Remodel Project.
   - Project Location: 4011 Bakerview Spur, Bellingham WA. 98226
B. Owner: Whatcom Transportation Authority
C. Architect of Record: KPFF

1.02 CONSTRUCTION

A. The project location will be occupied during the entire project and with the following requirements:

   1. Contractor to coordinate with Project Manager to arrange access outside designated work area, if required, to complete installation of utilities or equipment such as electrical equipment, data wiring and termination, HVAC equipment and controls.

   2. Contractor will enclose designated work area using barriers designed to limit or eliminate dust and debris contamination to Owner-occupied areas. Coordinate access through occupied areas of the building to designated work areas in order to minimize impact to Owner's operations.

   3. Contractor will minimize noise that may impact owner's operations as much as practical. The area near the work site operates from 5:00 AM – 11:00 PM daily. Rotohammers or other equipment that can transfer noise or vibration through the building are prohibited during normal business hours. Normal business hours are 8:00 AM to 5:00 PM Monday through Sunday. Exceptions coordinated with and approved by Owner's representative before work is scheduled are allowed.

   4. Contractor will obtain a Certificate of Occupancy or Temporary Certificate of Occupancy from City of Bellingham before Owner occupancy (CDR #19).

END OF SECTION 01 10 00

SECTION 01 11 13 WORK COVERED BY CONTRACT DOCUMENTS

A. Drawings and Specifications Dated July 24, 2021

END OF SECTION 01 11 13

SECTION 01 11 16 OWNER FURNISHED PRODUCTS

A. Owner will furnish products indicated on contract drawings and coordinate their delivery with the Contractor.
B. The Contractor is responsible for unloading, handling, and installing Owner-furnished items. The Contractor will notify the Owner of any damage at time of delivery.
C. Owner-furnished products include, but not limited to the following:

    1. Vinyl wall covering where indicated in drawings (finish schedule).

END OF SECTION 01 11 13

SECTION 01 14 00 WORK RESTRICTIONS

Any Work Restrictions and Conditions provided in Division 01 apply to work in all Divisions throughout this solicitation and forthcoming contract.

END OF SECTION 01 14 00

SECTION 01 14 13 ACCESS TO WORK SITE

A. Contractor to coordinate with Owner's representative access through occupied areas to minimize disruption to Owner's activities.
B. Contractors access corridors must be protected from damage and kept clean and presentable state throughout contract performance.
    1. Contractor will provide industry approved barriers between their access path and occupants in areas including, but not limited to, Dispatch and Customer Service work space.
    2. Other areas may be identified during the preconstruction meeting and contract performance.

END OF SECTION 01 14 13

SECTION 01 14 16 COORDINATION WITH OCCUPANTS

A. MOAB is occupied from 5:00 AM to 11:00 PM daily. Contractor and Sub-Contractors must consider this in their bid pricing and coordinate their work as required.
   1. All portions of the building not under construction during a particular phase will be occupied. Cooperate with Owner during construction to minimize conflicts and facilitate usage.
   2. No later than 48 hours before starting each phase, Contractor shall meet with Owner and designate the access corridor for that phase.
   3. Access and safety of all occupants must be maintained at all times. Maintain building exits unless otherwise approved by Owner.
   4. Provide 48 hour notice to Owner of activities that will affect operations or to schedule access or work in occupied areas.

END OF SECTION 01 14 16

SECTION 01 26 00 CONTRACT MODIFICATION PROCEDURES

A. WTA may, at any time, order additions, deletions, revisions, or other changes as necessary to complete the Work provided those changes could be reasonably considered as part of the work.
B. Changes shall be incorporated into the Contract documents through the execution of Change Orders or Amendments issued by the Procurement & Grants Coordinator.
C. No additional compensation shall be made for changes that extend the Contractor's schedule yet still keeps the project within the originally stipulated duration. If any change causes a change in the Contract Sum or the Contract Time, an equitable adjustment shall be made as provided below, and incorporated into a Change Order. Changes to the administration of the Contract or other provisions will be made by amendment.
D. Changes shall not invalidate the Contract nor release the Surety, and the Contractor will perform the Work as altered. Among others, these changes may include:
    1. Deleting any part of the Work.
    2. Increasing or decreasing quantities.
    3. Altering Specifications, designs, or both.
    4. Altering the way Work is performed.
    5. Adding new Work that could be reasonably assumed under this Scope.
    6. Altering facilities, equipment, materials, services, or sites, provided by WTA.
    7. Ordering the Contractor to speed up or delay the Work.
E. Contractor is responsible for notifying the Surety of any changes.
F. **WTA's Procurement and Contracts Manager will issue written change orders for all changes to the work scope**. Any adjustment to work scope and cost must be pre-approved in writing by the General Manager. Adjustments affecting the Contract Sum must be pre-approved on a Purchase Order from WTA's Procurement and Contracts Manager (Refer to 1.03 below). Work performed without written consent will be at the Contractor's expense. Claims will not be considered after final payment.

PART 1 GENERAL

1.01 DEVIATION FROM CONTRACT

The Contractor shall not make any change from the Contract requirements without the written consent of WTA's General Manager. Unless authorized, any change by the Contractor shall not result in any extra compensation or extension of time. The General Manager shall have the right to treat a deviation as a breach or default, if the Project Manager determines the deviation to jeopardize the integrity or quality of the work.

1.02 CHANGE ORDER WORK PROCEDURES

WTA's Project Manager or Contractor may request a written Change Order. Refer to Section 01 26 39 for field orders and emergency directive procedures.

A. Upon receipt of the Change Order proposal, or a request for equitable adjustment from Contractor, WTA Project Manager will review the proposal, request further documentation, or negotiate acceptable terms with Contractor. Contractor shall not proceed with any change in the Work until it has obtained written approval in the form of a change order. Work performed without written consent will be at the Contractor's expense. Claims will not be considered after final payment. All WTA-directed changes shall be executed in accordance with this section.
B. When an agreement is reached on the terms of any change, a written Change Order will be issued by WTA's Procurement and Contracts Manager.
C. If WTA and Contractor are unable to reach agreement on the terms of any change, including adjustment in the Contract Sum or Contract Time, WTA shall provide Contractor with its final offer. If Contractor does not accept WTA's final offer within seven (7) days, or the parties are otherwise unable to reach agreement, Contractor's only remedy shall be to file an appeal.

1.03 CHANGE IN THE CONTRACT SUM

A. The Contract Sum shall only be changed by a written Change Order ***PRIOR*** to work being performed. Contractor shall include any request for a change in the Contract Sum in its Change Order proposal[21]. Cost proposals will include
   1. Direct costs including labor and material
      a. Lump sum labor
      b. Lump sum material
      c. Lump sum equipment usage
   2. Indirect costs including overhead and general and administrative
   3. Profit
   4. Sales Tax
   5. Any other additional documentation requested or required by WTA
B. Contractor should consider all allowable costs[22] related to Work covered or affected by the Change Order or related to the events causing the request for equitable adjustment.
C. If the Contractor's cost is changed due to fault or negligence of WTA, or anyone for whose acts WTA is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Sum. No change in the Contract sum shall be allowed when
   1. Contractor's changed cost is due to the fault or negligence of Contractor, or anyone for whom Contractor is responsible.
   2. The change is caused by both Contractor and WTA.
   3. The change is caused by Force Majeure.
D. Contractor shall not be entitled to any adjustment in the Contract Sum for any occurrence of events or costs that occurred more than seven (7) days before Contractor's written notice to the Project Manager. Failure to provide written notice within the allowed time constitutes a waiver of Contractor's right to an equitable adjustment.
   1. The itemized amount of requested compensation.
   2. Specific facts, circumstances, and analysis that confirms claimed damages, evidence the damages were a result of the act, event, or condition complained of and the section of the Contract Documents allowing an equitable adjustment.
   3. Documentation sufficiently detailed to permit an informed analysis of the request by WTA.
E. Any requests by Contractor for an equitable adjustment in the Contract Sum and in the Contract Time that arise out of the same event(s) shall be submitted together. When the request for compensation relates to a delay or other change in Contract Time, Contractor shall demonstrate the impact on Contract completion. Failure to provide documentation within the time allowed shall constitute a waiver of Contractor's right to an equitable adjustment.
F. The value of any Work covered by a Change Order, or of any request for an equitable adjustment in the Contract Sum, shall be determined by one of the following methods:
   1. On the basis of a fixed price. Division 01 26 00 Part 1.04
   2. On the basis of time and material. Division 01 26 00 Part 1.05

When the Project Manager has requested Contractor submit a Change Order proposal, the Project Manager will direct Contractor which equitable adjustment method to use. Otherwise, Contractor shall determine the equitable adjustment on the basis of the fixed price method.

1.04 CHANGE ORDER PRICING - FIXED PRICE

When the fixed price method is used to determine the value of a Change Order or a request for an equitable adjustment, the following procedures shall apply:

[21] FTA C4220.1F Chapter VI, #6
[22] FAR Part 31.202 through 31.205

A. Contractor shall provide a complete itemization of the costs as described in Section 1.03 above. The costs shall be itemized in the manner set forth below and shall be submitted on breakdown sheets to WTA's Project Manager.
B. All costs shall be calculated based upon appropriate industry standard methods of calculating labor, material quantities, and equipment costs.
C. If any of Contractor's pricing assumptions are contingent upon anticipated actions of WTA, Contractor must clearly state them.
D. The cost of any additive or deductive changes in the Work shall be calculated as set forth in #5 below, except that overhead and profit shall not be included on deductive changes in the Work. Small tools, bond and insurance markups will apply to the net difference.
E. Any request for adjustment of Contract Sum based upon the fixed price method shall include:
    1. Labor costs: Determined by multiplying the estimated or actual additional number of hours needed to perform the change in the Work by the hourly labor costs. Hours should cover direct and indirect labor. The hourly costs shall be based on the following:
        a. Basic wages and benefits: Hourly rates and benefits as stated on the Department of Labor and Industries approved Statement of Intent to Pay Prevailing Wages.
        b. Worker's insurance: Direct contributions to the State of Washington for industrial insurance; medical aid; and supplemental pension, by the class and rates established by the Department of Labor and Industries.
        c. Federal insurance: Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.
        d. Travel Allowance: Travel allowance and/or subsistence, if applicable, not exceeding those allowances established by regional labor union agreements, which are itemized and identified separately.
    2. Material costs: An itemization of the quantity and cost of materials needed to perform the change. Material costs shall be developed from actual known costs, supplier quotations, or standard industry pricing guides. Material costs shall consider all available discounts. Freight costs, express charges, or special delivery charges, shall be itemized.
    3. Equipment costs: An itemization of the type of equipment and the estimated or actual length of time the construction equipment is or will be used. Costs will be allowed for construction equipment only if used for the changed Work, or for additional rental costs actually incurred by the Contractor. Equipment charges shall be developed from the current edition of the Associated General Contractors - Washington State Department of Transportation Equipment Rental Agreement.
    4. Sub-Contractor costs: Payments Contractor makes to Sub-Contractors for changed Work performed by Sub-Contractors of any tier. The Sub-Contractors' cost of Work shall be calculated and itemized in the same manner as prescribed for Contractor.
    5. Allowances for overhead, General and Administrative, and profit: Costs added to the total cost to WTA of any Change Order, or any request for additional Work or extra payment of any kind on the Project. This allowance shall compensate Contractor for all **noncraft labor**, temporary construction facilities, field engineering, and schedule updating, as-built drawings, home office cost, B&O taxes, office engineering, estimated costs, additional overhead because of extended time, and any other cost incidental to the change in the Work. It shall be strictly limited in all cases to a reasonable amount, based on the level of Contractor effort, and mutually acceptable, or if none can be agreed upon to an amount not to exceed the following:
        a. For Contractor, any Work performed by its own forces, fifteen percent (15%) of the first $50,000 of the cost, and ten percent (10%) of the remaining cost, if any.
        b. For Contractor, for any Work performed by its Sub-Contractor(s), eight percent (8%) of the first $50,000 of the amount due each Sub-Contractor, and six percent (6%) of the remaining amount if any.
        c. For each Sub-Contractor, for any Work performed by its Sub-Sub-Contractor(s), eight percent (8%) of the first $50,000 of the amount due the sub-Sub-Contractor, and six percent (6%) of the remaining amount if any.
        d. The cost to which overhead and profit is to be applied.
    6. Cost of change in insurance or bond premium:

a. Contractor's liability insurance: The cost of any changes in Contractor's liability insurance arising directly from execution of the change Order.
b. Public works bond(s): The cost of the additional premium for Contractor's bond arising directly from the changed Work.
c. The costs of any change in insurance or bond premium shall be added after overhead and profit are calculated.

1.05 CHANGE ORDER PRICING - TIME-AND-MATERIAL PRICES

A. Whenever WTA authorizes Contractor to perform Work on a time-and-material basis, the directive shall clearly state:
   1. Scope of Work to be performed.
   2. Type of reimbursement including pre-agreed rates and costs as outlined in 1.03 above.
   3. Cost limit of reimbursement (Not to exceed amount).
B. Contractor shall:
   1. Cooperate and assist in monitoring the Work being performed. Contractor shall identify workers assigned and areas in which they are working.
   2. Present daily time sheets of all labor performed at the end of each working day.
   3. Leave access as appropriate for quantity measurement.
   4. Perform all Work in accordance with this section as efficiently as possible.
   5. Not exceed any cost limit(s) without WTA's prior written approval.
C. Contractor shall submit costs and additional verification supported by:
   1. Labor detailed on certified payrolls.
   2. Invoices for material.

1.06 CALCULATING MARKET PRICE INCREASES

WTA will review all material price increases over 15% of Contractor's material price when the price increase is the direct result of a significant change in the market of the related commodity (e.g. lumber, plastics, ferrous metals, fuel). Contractor will provide data from Bureau of Labor Statistics (BLS) Consumer Price Index for the six (6) month period preceding the price increase, quotes and actual invoices showing the price increase, and any other documentation that will support the price increase. WTA reserves the right to negotiate the requested price increase or amend the scope of work.

1.07 CHANGE IN THE CONTRACT TIME

A. Any Change Order proposal or request for an adjustment in the Contract Time shall demonstrate the impact on the schedule. Contractor shall be responsible for clearly demonstrating the event:
   1. Had a specific impact on the schedule, and except in case of concurrent delay, was the sole cause of such impact
   2. Could not have been avoided by resequencing of the work or other reasonable alternatives.
B. PROCEDURES: If Contractor's schedule is changed due to an act of Force Majeure or the fault or negligence of WTA or anyone for whose acts WTA is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Time. No adjustment in the Contract Time shall be allowed due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible.
C. A written request for an equitable adjustment shall be delivered within seven (7) days of the occurrence of the event giving rise to the request. If Contractor believes it is entitled to adjustment of Contract Time, Contractor shall immediately notify WTA and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall promptly furnish copies of such record to WTA with written request for extension.
D. Contractor shall be entitled to an adjustment for events that occurred from the time written notice was received by WTA. The written notice shall detail, at a minimum, a description of:
   1. The event giving rise to the request
   2. The nature of the impacts to Contractor and its sub-Contractors of any tier, if any
   3. The amount of the adjustment in Contract Time requested.

Failure to give written notice shall constitute a waiver of Contractor's right to an equitable adjustment.

E. Within thirty (30) days of the event, unless otherwise agreed by WTA, Contractor shall supplement the written notice with additional supporting data. Data shall include, at a minimum:
   1. The itemized amount of delay claimed
   2. Specific facts, circumstances, and analysis confirming not only that Contractor suffered the delay, but that the delay was a result of the act, event, or condition described, and the section in the Contract Documents allowing an equitable adjustment.
   3. Supporting documentation detailed to permit an informed analysis by WTA.
F. Failure to provide such additional information and documentation within the time allowed shall constitute a waiver of Contractor's right to an equitable adjustment.
G. Pending final resolution of any request, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.
H. If time extensions are granted, Contractor shall indemnify and hold WTA harmless from any losses to any other Contractor or sub-Contractor caused by such time extensions.

1.08 COST OF CHANGE TO CONTRACT TIME

Contractor may request compensation for the cost of a change in Contract Time subject to the following conditions:

A. The change in Contract Time is solely caused by the fault or negligence of WTA or Architect.
B. Compensation is limited to changes in Contract Time for which Contractor is not entitled to be compensated monetarily.
C. Contractor shall follow the procedure set forth in 01 26 00 Part 1.07.
D. Contractor shall establish the extent of the change in Contract Time
E. The daily cost of any change in Contract Time for the delay shall be limited to:
   1. Cost of nonproductive field supervision or labor extended
   2. Cost of weekly meetings or similar indirect activities extended
   3. Cost of temporary facilities or equipment rental extended.
   4. Cost of insurance extended
   5. General and administrative overhead in an amount to be agreed upon, but not to exceed three percent (3%) of contract sum divided by the Contract Time for each day.

1.09 COMPENSATION TO WTA FOR TIME EXTENSION

In exchange for granting an extension of time for avoidable delay, WTA shall be compensated by the Contractor for WTA's engineering, inspection, general supervision and overhead expenses directly chargeable to the work and accrued during the extension period. The actual costs do not include charges for final inspection and preparation of the final estimate by WTA.

END OF SECTION 01 26 00

SECTION 01 26 39 FIELD ORDERS

A. When a latent condition is discovered that would have a negative financial or schedule impact to stop work and redeploy a Contractor, the Project Manager may issue a Field Authority Change. A Change Order proposal must be submitted to the Project Manager and approved in writing by the General Manager no more than five (5) business days after the authorization is applicable.
B. If a delay threatens the health or safety of employees, passengers, or the general public, the General Manager will authorize[23] the Project Manager to direct Contractor to proceed immediately with an Emergency Directive on a time and materials basis. A Change Order proposal must be submitted to the Project Manager and approved in writing by the General Manager no more than five (5) business days after the authorization is applicable.
C. Contractor shall immediately notify the Project Manager and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall promptly furnish copies of such records to WTA with the request for equitable adjustment and as a condition of payment. The written notice shall, at a minimum, describe:
    1. The event giving rise to the request for an equitable adjustment in the Contract Sum
    2. The nature of the impacts to Contractor and its Sub-Contractors, if any
    3. The extent possible the amount of the adjustment in Contract Sum requested

END OF SECTION 01 26 39

[23] WTA Policy # POL-ALL-201-04 Declared Emergency

SECTION 01 29 73 SCHEDULE OF VALUES

The Contractor shall submit a schedule of values, showing the value assigned to each activity of the work, including separate allowances for taxes, profit, and overhead (CDR #2). The Contractor guarantees accurate representations of the value of each activity. The schedule of values shall be prepared with sufficient detail to permit its use by WTA as a basis for evaluating requests for payment, Contract compliance, and Change Orders.

END OF SECTION 01 29 73

SECTION 01 29 76 PROGRESS PAYMENT PROCEDURE

WTA will issue payment on Net 30 terms following the Contractor Invoice and Progress Payment Application (CDR #13) approval and verification of Prevailing Wage intent approval with Labor & Industries.

WTA is open to negotiating alternative payment terms such as Net 10 with a cash discount or using a credit card.

PART 1 GENERAL

By close of business of the last day of each month the Contractor shall submit an invoice (CDR #14) and a completed Application for Progress Payment (CDR #13) using the form on Division 00 62 73. Payment periods shall end on the last working day of each month. The Contractor's current progress schedules, copies of invoices (CDR #14), and any Contract Deliverable Requirements (CDR's) shall be provided with each submission. If requested, the Contractor shall provide additional data to support the payment for materials and labor, including payments to sub-Contractors, and suppliers.

The term "materials" includes fabricated and manufactured material and equipment. Only those materials for which the Contractor can transfer clear title to WTA and labor including mobilization performed by the invoice date will be qualified for partial payment, except as specifically provided below.

1.01 PAYMENT REQUESTS

A. All payment requests shall include
   1. An invoice on Contractor letterhead for the value of the work performed
   2. Copies of any invoices from subs or suppliers
   3. Completed Application for Progress Payment
   4. Updated Schedule of Values including percent complete for each item
B. Charges will be costs incurred since the Contractor's receipt of the Notice to Proceed. Every subsequent partial payment request, except the final payment request, shall include the same information based on costs incurred since the previous partial payment request was submitted.
C. PARTIAL PAYMENT FOR MATERIALS & EQUIPMENT DELIVERED BUT NOT INSTALLED.
   To receive partial payment for materials & equipment delivered but not incorporated in the work, the Contractor shall submit a list with invoices and proof of delivery with the Contractor's partial payment estimate. Proof of delivery is a tracking number, signed copy of a Bill of Lading from the shipper, or a packing slip. The value must be supported by invoices of sub-Contractors or suppliers. Partial payment for materials and equipment delivered but not yet incorporated in the work will be paid at one hundred percent (100 %) of the cost minus installation labor, except as may be determined otherwise by the Project Manager.
D. PARTIAL PAYMENT BASED ON UNIT PRICES
   If the Schedule of Values includes unit price items, then partial payments for such items will be based on the actual quantities performed or provided. For work performed or provided, the Contractor shall not be entitled to any payment beyond those unit prices.

1.02 REVIEW OF PAYMENT APPLICATION

A. Within eight (8) calendar days after receipt of the partial payment request, the Project Manager will review the request and either approve or deny the payment application.
B. In the event WTA's Project Manager does not concur with the payment request, the Contractor will be notified in writing the specific reasons why part or all of the payment is being withheld and what remedial actions the Contractor must take. The Contractor may make the changes necessary and resubmit the request. WTA will issue payment within thirty (30) days of approval of Contractor's remedied invoice.

1.03 SUB-CONTRACTOR PAYMENTS

A. When the Contractor receives a payment under this Contract, the Contractor shall pay any sub-Contractor within ten (10) days after the receipt WTA's payment[24]. If the Contractor fails or neglects to make such payment within ten (10) days, the Contractor shall pay to the sub-Contractor an interest penalty computed at one percent (1%) per month on amounts due for the period beginning on the day after the required payment date and ending on the day on which payment of the amount due is made[25].
B. The Contractor shall include in each of its sub-Contracts a provision outlining this payment and interest clause. In addition, the Contractor shall require its sub-Contractors to include such a payment and interest penalty clause in each of their sub-Contracts with each lower tier sub-Contractor or supplier.
C. The Contractor agrees to return retainage payments to each sub-Contractor at such time as WTA receives the Affidavit of Wages Paid (CDR #6) from the sub-Contractor and the final release from the State of Washington Department of Revenue, Labor & Industries, and Employment Security Department that all requirements have been met by the sub-Contractor, after the sub-Contractor's work is satisfactorily completed.
D. Any deviation from the above referenced time frame may occur only for good cause following written approval of WTA. The Contractor shall require that sub-Contractor's execute a lien release for any liens that have been filed as a condition of payment.

1.04 RETAINAGE

A. WTA will withhold five percent (5%) of each invoice[26]. This money will be set aside as a trust for the protection and payment of anyone performing labor; providing materials, supplies, or equipment; or sub-Contractors.
B. At the Contractor's option, this retainage will be either[27]:
   1. Retained in a fund by the WTA
   2. Deposited in an interest bearing bank account. Any interest earned will be paid to the Contractor
   3. Placed in escrow with a bank or trust by WTA
   4. Submitted as a bond for the full amount of anticipated retainage CDR# 4).
C. Washington State Department of Revenue (DOR), Employment Security Department (ESD), and Department of Labor & Industries (L&I) all have lien rights against this fund whether held by WTA or submitted as a bond. Should claims be made against this retainage amount, the priority of payment will be:
   1. Workers not paid prevailing wages
   2. DOR– taxes due on this public works project
   3. DOR– taxes due on other public works projects
   4. ESD and L&I for taxes due on the public works project
   5. Sub-Contractors and suppliers claims against the public works project
   6. Other taxes due (ESD, L&I for taxes due on other projects and/or other taxes)
   7. WTA outstanding claims

1.05 FINAL PAYMENT

A. WTA will make final payment to the Contractor following acceptance of work. Final acceptance will occur after Punch List (CDR #20) items are complete, claims are released, receipt of releases of property, and state requirements have been met. Final payment shall include the entire sum found to be due after deducting such amounts as the terms of this Contract permit. Prior estimates and payments, including those relating to extra work or work omitted, shall be subject to correction by the final payment.
B. By accepting final payment, the Contractor releases WTA from all claims and liability for performance in connection with the Work and for every act and neglect of WTA and others relating to or arising out of the work, other than timely written claims submitted in compliance with the Contract requirements. Payment by

[24] RCW 39.04.250
[25] RCW 39.04.250(3)
[26] RCW 60.28.011, WAC 458-20-217
[27] RCW 60.28.011

WTA shall not release the Contractor or its surety from any obligation under the Contract Performance or Performance Bond, nor indemnity, hold harmless and defense obligations.

1.06 RELEASE OF RETAINAGE

A. Payment or release of retainage will be made in ordinary course of business as soon as possible following completion of the Work provided the following conditions are met:
   1. Certificates approved by the Washington State Department of Labor and Industries, Washington State Department of Revenue, Washington State Employment Security Department, and all other departments and agencies having jurisdiction over the activities of the Contractor have been provided to WTA's Procurement and Contracts Manager
   2. "Affidavits of Wages Paid" for the Contractor and each sub-Contractor approved by the Industrial Statistician of the Washington State Department of Labor and Industries (CDR #6).
   3. No claims or notices of lien, as provided by law, have been filed against the retainage, nor remain filed or recorded against any property.
   4. WTA has no claims under this Contract.
B. If such taxes have not been discharged or the claims, expenses, and fees have not been paid, WTA shall either retain in its fund, an interest bearing account, in escrow, at the option of the Contractor, an amount equal to such unpaid taxes and claims together with costs and attorney fees incurred in foreclosing the lien of such claims, and shall pay, or release from escrow, the remainder to the Contractor.

1.07 POSSESSION OF PORTIONS OF THE PROJECT

Should the Contractor fail to meet any date specified for substantial completion of the Work or portion of the Work requiring early possession and use, WTA may, after a ten (10) day written notice to the Contractor, take over such portion or all of the Work that is behind schedule. In such case, the Project Manager will prepare a punch list of incomplete Work (CDR #20). WTA may allow the Contractor reasonable access to the Work at such times that the operation of the project will not be affected or he/she/it may complete the Work himself/herself/itself after giving the Contractor notice of his/her/it's intention to do so. The cost of WTA's work will be charged to and deducted from amounts due to the Contractor. The substantial completion date will be established as the date when WTA actually begins using the project or portion of the project for its intended purpose. Division of responsibilities between WTA and Contractor, beginning of warranties, and any other issues relating to substantial completion shall be as specified.

END OF SECTION 01 29 76

SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. General project coordination procedures.
   2. Project meetings.
B. Related Sections: The following Sections contain requirements that relate to this Section:

   1. Section 01 77 00 – Preliminary Closeout Review

END OF SECTION 01 31 00

SECTION 01 31 13 PROJECT COORDINATION

A. Coordination: Coordinate construction to ensure efficient and orderly installation of each Work phase including dependencies for proper installation, connection, and operation.
   1. Schedule operations in sequence and accommodate Owner's operations. Obtain the best finished results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.

B. Administrative Procedures: Coordinate required administrative procedures with other construction activities and activities of other Contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of the Schedule of Values (CDR #2).
   2. Installation and removal of temporary facilities and controls.
   3. Delivery and processing of submittals.
   4. Progress meetings.
   5. Project closeout activities.

END OF SECTION 01 31 13

SECTION 01 31 19 PROJECT MEETINGS

Architect will schedule and conduct weekly project meetings.

A. Attendees: Participants and individuals whose presence is required will be informed of date and time of each meeting.
B. Agenda: Architect will prepare the meeting agenda and distribute to all attendees.
C. Minutes: Architect will record significant discussions and agreements and distribute minutes to all attendees, within five (5) days of the meeting.

END OF SECTION 01 31 19

SECTION 01 31 19.13 PRECONSTRUCTION MEETINGS

A. Owner will schedule a preconstruction conference, after execution of the Agreement and as close to the anticipated project start date as possible. The conference will be held at Project site or another convenient location. The meeting will review and assign responsibilities and personnel tasks. All participants at the preconstruction conference shall be familiar with the Project and authorized to successfully negotiate matters relating to the Work.
B. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major sub-Contractors; manufacturers; suppliers; and other concerned parties shall attend the conference.
C. Agenda: Discussion of items of significance that could affect progress, including the following:
    1. Tentative construction schedule.
    2. Phasing.
    3. Critical work sequencing.
    4. Designation of responsible personnel.
    5. Pandemic procedures and requirements
    6. Procedures for processing field decisions and Change Orders.
    7. Procedures for processing Applications for Payment.
    8. Submittal procedures.
    9. Preparation of Record Documents.
    10. Use of the premises and surrounding areas.
    11. Responsibility for temporary facilities and controls.
    12. Parking availability, use, and permits required.
    13. Staging and storage areas.
    14. Equipment deliveries and priorities.
    15. First aid.
    16. Security.
    17. Progress cleaning.
    18. Working hours.
    19. Waste Disposal.
    20. Environmental Hazards.
    21. Protection of onsite staff.

END OF SECTION 01 31 19.13

SECTION 01 31 19.23 PROGRESS MEETINGS

A. Architect will conduct weekly progress meetings. Dates of meetings will coincide with preparation of payment requests. All participants at these meetings shall be familiar with Project and authorized to successfully negotiate matters relating to the Work.
B. Attendees: In addition to representatives of Owner and Architect, each contractor, sub-Contractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings.
C. Agenda: Minutes of the previous progress meeting will be reviewed and corrected or approved. Other items of significance that could affect progress will also be reviewed.
    1. Contractor's Construction Schedule: Contractor shall review progress since the last meeting and determine whether each activity is on time, ahead of or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited and secure commitments from parties involved. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    2. Review present and future needs of everyone present, including the following:
        a. Interface requirements.
        b. Sequence of operations.
        c. Status of submittals.
        d. Deliveries.
        e. Off-site fabrication[28].
        f. Access.
        g. Site Utilization.
        h. Temporary facilities and controls.
        i. Work hours.
        j. Hazards and risks.
        k. Progress cleaning.
        l. Quality and work standards.
        m. Change Orders.
        n. Documentation of information for payment requests.
D. Reporting: Architect will distribute minutes of the meeting to everyone present and those who should have been present. Minutes shall include a brief narrative summary of progress since the previous meeting or Site Visit Report.
E. Schedule Updating: Contractor shall revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

END OF SECTION 01 31 19.23

[28] Off-site fabrication may require prevailing wage. Refer to RCW 39.12.040 and WAC 296-127

SECTION 01 31 27 REQUEST FOR INTERPRETATION (RFIs)

1.01 REQUEST FOR INTERPRETATION (RFIs)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI
   1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
   2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of sub-Contractors.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
   1. Project name.
   2. Date.
   3. Name of Contractor.
   4. RFI number, numbered sequentially.
   5. Specification Section number and title and related paragraphs, as appropriate.
   6. Drawing number and detail references, as appropriate.
   7. Field dimensions and conditions, as appropriate.
   8. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
   9. Contractor's signature.
   10. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
      a. Supplementary drawings prepared by Contractor shall include dimensions, thickness, structural grid references, and details of affected materials, assemblies, and attachments.

C. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
   1. Attachments shall be electronic files in Adobe Acrobat PDF format.

D. Architect's Action: Within seven (7) working days of receipt, Architect will review each RFI, determine action required, and return it. RFIs received after 1:00 p.m. will be considered as received the following working day.
   1. The following RFIs will be returned without action:
      a. Requests for approval of submittals.
      b. Requests for approval of substitutions.
      c. Requests for coordination information already indicated in the Contract Documents.
      d. Requests for adjustments in the Contract Time or the Contract Sum.
      e. Requests for interpretation of Architect's actions on submittals.
      f. Incomplete or erroneous RFIs.
   2. Architect may request additional information, in which case Architect's time for response will start again.
   3. Architect's action on RFIs that may result in a change to the Contract Time or Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 1 Section 01 26 00 "Contract Modification Procedures".
      a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.

E. On receipt of Architect's action, Contractor will update the RFI log and immediately distribute the RFI response where applicable. Review response and notify Architect within seven (7) days if Contractor disagrees with response.

END OF SECTION 01 31 27

SECTION 01 33 00 SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. This Section outlines requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
B. Submittals may be rejected for not complying with requirements or meeting specified products.
C. Related Sections include the following:
   1. Section 01 29 76 – Progress Payment Procedures.
   2. Section 01 77 00 – Preliminary Closeout Review.

1.02 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.
B. Informational Submittals: Written information that does not require Architect's approval.

1.03 SUBMITTAL PROCEDURES

A. General: Electronic copies of the Contract Drawings will be provided for Contractor's use.
B. Coordination: Prepare and process submittals with each construction activity(ies).
   1. Coordinate each submittal sequentially with fabrication, purchasing, testing, delivery, other submittals, and related activities.
   2. Coordinate transmittal of submittals for related parts of the Work to prevent delay from concurrent submittal review.
C. Architect and Owner reserve the right to withhold action until related submittals are received.
D. Processing Time: Allow fifteen (15) days for submittal review, not including time for resubmittals. Time for review begins on Architect's receipt of submittal.
E. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal with a cover sheet. Architect will return submittals, without review, received from sources other than Contractor.
H. Distribution: Furnish copies of final submittals to manufacturers, sub-Contractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
I. Use for Construction: Use only final submittals with mark indicating action taken by Architect in connection with construction.

PART 2 PRODUCTS

2.01 ACTION SUBMITTALS (CDR #22)

A. General: Prepare and submit Action Submittals required by individual Specification Sections. Submittals will be sent electronically in lieu of paper copies however, physical samples demonstrating color, texture, and appearance are still required.
B. Product Data (for Basis of Design and comparable products by Other Acceptable Manufacturers): Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard printed data is not suitable, submit as Shop Drawings, not as Product Data.
   2. Mark each submittal copy to show which products and options are applicable.
   3. Include the following information, as applicable:
      a. Manufacturer's written recommendations.
      b. Manufacturer's product specifications.
      c. Manufacturer's installation instructions.

d. Standard color charts.
e. Manufacturer's catalog cuts.
f. Wiring diagrams showing factory-installed wiring.
g. Printed performance curves.
h. Operational range diagrams.
i. Mill reports.
j. Standard product operating and maintenance manuals.
k. Compliance with recognized trade association standards.
l. Compliance with recognized testing agency labels and seals.
m. Application of testing agency labels and seals.
n. Notation of coordination requirements.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
a. Dimensions.
b. Identification of products.
c. Fabrication and installation drawings.
d. Roughing-in and setting diagrams.
e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
f. Shopwork manufacturing instructions.
g. Templates and patterns.
h. Schedules.
i. Design calculations.
j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.
2. Wiring Diagrams: Differentiate between manufacturer-installed wiring.
3. Sheet size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches.

D. Samples: Prepare physical units of materials or products, or paint samples and manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available where specified in individual Sections.

E. Application for Payment (CDR #13): Comply with requirements in Section 01 29 76 - Progress Payment Procedures.

F. Schedule of Values (CDR #2): Comply with requirements in Section 01 29 76 - Progress Payment Procedures.

G. Sub-Contract List (CDR #23): Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. See section 00 21 13 Part 1.08 for more information on Sub-Contracts. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing sub-Contractor or supplying products.
2. Number and title of related Specification Selection(s) covered by sub-Contract.
3. Drawing number and detail references, as appropriate, covered by sub-Contract.

2.02 INFORMATIONAL SUBMITTALS (CDR # 24)

A. General: Prepare and submit Informational Submittals required by other Specification Sections digitally to the Project Manager and Architect.
1. Certificates and Certifications: Provide a notarized statement that includes signature of Contractor, testing agency, or design professional responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of the company.

B. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Section 01 77 19 – Contract Closeout Procedures.

C. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include

name of product and name, address, and telephone number of manufacturer. Include the following, if applicable:
1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

D. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage. See Sections 00 21 13 part 1.16 and Section 00 70 00 part 1.28 for more information on Insurance & Bond requirements

PART 3 EXECUTION

3.01 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
B. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ARCHITECT'S REVIEW

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
B. Action Submittals: Architect will review submittal, make marks to indicate corrections or modifications required, and return it within one (1) week of receiving submittal. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.
C. Informational Submittals: Architect will review each submittal and will not return it or will reject and return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

3.3 PRE-CONSTRUCTION SUBMITTALS

A. Submit the following for approval before starting work:
1. Contract/Agreement
2. Satisfactory proof of insurance coverage
3. Performance Bonds
4. List of Sub-Contractors
5. Schedule of values (cost breakdown to be used for applications)
6. Construction schedule

END OF SECTION 01 33 00

SECTION 01 42 00 REFERENCES

16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2014 (2015 Errata).
AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.
ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2010.
ANSI/NECA/BICSI 568-2006 – Installing Commercial Building Telecommunications Cabling.
ANSI/NECA/BICSI 607-2011 –Telecommunications Bonding and Grounding Planning and Installation Methods for Commercial Buildings.
ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
ANSI/TIA/EIA 568-C.0 – Generic Customer-Owned Telecommunications Networks.
ANSI/TIA/EIA 568-C.1 – Commercial Building Telecommunications Cabling Standard.
ANSI/TIA/EIA 568-C.2 – Balanced Twisted Pair Telecommunications Cabling System Standard.
ANSI/TIA/EIA 569-C – Telecommunication Pathways and Spaces.
ANSI/TIA/EIA 606-A – Administration Standard for Commercial Telecommunications Infrastructure.
ANSI/TIA/EIA 607-B – Commercial Building Grounding and Bonding Requirements for Telecommunications.
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; 2016.
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; 2015.
ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2013.
ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.
ASTM C1036 - Standard Specification for Flat Glass; 2011.
ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.
ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens); 2016a.
ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2014.
ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014a.
ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete; 1999 (Reapproved 2014).
ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation; 2016a.

ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2013a.
ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2013.
ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.
ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2015.
ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.
ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2015).
ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014a.
ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.
ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2016.
ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2016.
ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2015.
ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014
ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace @ 750°C; 2016.
ASTM E413 - Classification for Rating Sound Insulation; 2016.
ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2014.
ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2014c.
ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2016.
ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
ASTM F1861 - Standard Specification for Resilient Wall Base; 2008 (Reapproved 2012).
ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2011.
ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.
AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
BHMA A156.9 - American National Standard for Cabinet Hardware; 2010.
CRI 104 - Standard for Installation of Commercial Carpet; 2015.
GA-216 - Application and Finishing of Gypsum Board; 2013.
GANA (SM) - GANA Sealant Manual; 2008.
HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2009.
ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.
MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.
NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.
National Electrical Code (NEC), ANSI/NFPA 70, adopted and amended by RCW 19.28, WAC 296-4 and WAC 296-401: Laws, rules and regulations for installing network cabling and related components and equipment.

NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.
PS 1 - Structural Plywood; 2009.
RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute; October 2011.
SCAQMD 1113 - South Coast Air Quality Management District Rule No.1113; current edition.
SSPC-SP 1 - Solvent Cleaning; 2015.
SSPC-SP 6 - Commercial Blast Cleaning; 2007.

END OF SECTION 01 42 00

SECTION 01 42 13 ABBREVIATIONS AND ACRONYMS

Abbreviations and Names: Abbreviations and acronyms are frequently used in the Specifications and other Contract Documents to represent the name of a trade association, standards-developing organization, authorities having jurisdiction, or other entity in the context of referencing a standard or publication.

AAMA:	American Architectural Manufacturer's Association, 1827 Walden Office Square, Ste. 104, Schaumburg, IL 60173-4628
ACI:	American Concrete Institute, P.O. Box 4754, Redford Station, Detroit, Michigan 48219
AIA:	American Institute of Architects, 1735 New York Avenue, Washington D.C. 20006
AIMA:	Acoustical and Insulating Materials Association, 205 West Touhy Avenue, Park Ridge, IL 60068
AISI:	American Iron and Steel Institute, 150 East 42nd St., New York, NY 10018
AMCA:	Air Moving and Conditioning Association, Inc., 30 West University Drive, Arlington Heights, Ill. 60004
ANSI:	American National Standards Institute, 1430 Broadway, New York, NY 10018
APA:	American Plywood Association, P.O. Box 11700, Tacoma, WA 98411
ASME:	American Society of Mechanical Engineers, 29 West 39th St., New York, NY 10018
ASTM:	American Society for Testing & Materials, 1916 Race St., Philadelphia, PA
AWI:	Architectural Woodwork Institute, Chesterfield House, Suite A, 5055 S. Chesterfield Road, Arlington, VA 22206
CSI:	Construction Specifications Institute, 1717 Massachusetts Ave. N.W., Washington D.C. 20036
FGMA:	Flat Glass Marketing Association, 3310 Harrison, White Lakes Prof. Bldg., Topeka, KS. 66611
ICC:	International Code Council
IBC:	International Building Code
IEBC:	International Existing Building Code
IMC:	International Mechanical Code
IEEE:	Institute of Electrical & Electronic Engineers, 33 West 39th St., New York, NY 10018
IPCEA:	Insulated Power Cable Engineers Association, 283 Valley Road, Montclair, NJ 07042
NEMA:	National Electrical Manufacturer's Association, 155 East 44th Ave., New York, NY 10017
SDI:	Steel Door Institute, 1230 Keith Building, Cleveland, Ohio 44115
SMCNA:	Sheet Metal & Air Conditioning Contractor National Association, 107 Center St., Elgin, Ill. 60210
UL:	Underwriter's Laboratories, 333 Pfinsten Road, Northbrook, Ill. 600062
WABO	Washington Association of Building Officials, P. O. Box 7310, Olympia, WA 98507
WSDOT:	Washington State Department of Transportation, P.O Box 47300, Olympia, WA 98504-7300
WWPA:	Western Wood Products Association, Yeon Building, Portland, OR 97204

END OF SECTION 01 42 13

SECTION 01 42 16 DEFINITIONS

Basic Contract definitions are included in the conditions of the Contract.

A. "Approved": When used in conjunction with Architect's action on Contractor's submittals applications and requests, is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
B. "Day": Calendar day.
C. "Emergency Directive": a change directed by the Project Manager or Procurement & Contracts Manager to correct a latent condition that would negatively impact WTA property or personnel if not immediately corrected and may result in a Declaration of Emergency as outlined in policy. An example would be a water main to the sprinkler system breaking while doing contracted work.
D. "Field Authority Change": a change order directed by the Project Manager designee in the field. This type of change order would have a negative financial or safety impact if not otherwise immediately authorized. For example, the need to run an extra 150' of phone line to keep the project going. To wait and redeploy a Contractor would double the cost.
E. "Furnish": supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
F. "Indicated": graphic representations, notes, or schedules in Specifications and similar requirements in the Contract Documents. Used in conjunction with "shown," "noted," "scheduled," and "specified" are used to help locate the reference.
G. "Install": operations at Project site including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
H. "Installer": Contractor or sub-Contractor to perform a particular operation, including installation, erection, application, and similar operations.
    1. The term "experienced," when used with the term "installer," means having successfully completed a minimum of five (5) previous projects similar in size and scope; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.
    2. Using a term such as "carpentry" does not imply that specific activity must be performed by accredited or unionized individuals. It also does not imply that requirements detailed apply exclusively to specific tradespeople.
I. "Regulations": laws, ordinances, statutes, and lawful orders by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
J. "Project site": space available for performing construction activities, either exclusively or in conjunction with others performing other work as part of Project. The extent of project site is shown on the Drawings and may or may not be identical with the description of the land on which Project is to be built.
K. "Provide": furnish and install, complete and ready for the intended use.

END OF SECTION 01 42 16

SECTION 01 42 19 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
B. Publication Dates: Comply with standards in effect as of the date if the Contract Documents, unless otherwise indicated.
C. Conflicting Requirements: Where compliance with two (2) or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are unclear, to Architect or Owner for a decision before proceeding.
D. Copies of Standards: Each entity engaged in the Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with Contract Documents.
    1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.

END OF SECTION 01 42 19

SECTION 01 50 00 TEMPORARY FACILITIES AND LAYDOWN AREA

A. The Contractor will be provided a laydown/staging area as indicated on the drawings for materials and temporary facilities.
B. Owner will have no liability for losses or vandalism to contractor's facilities or material.
C. The Contractor must keep the storage area neat and clean. Do not allow materials or trash to enter Owner property.
D. Contractor is responsible for costs for proper storage, handling, and disposal of demolition debris from the site per local regulations. Contractor is responsible for all costs of any temporary facility utilities and security.

END OF SECTION 01 50 00

SECTION 01 70 00 EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Construction layout.
   2. General installation of products.
   3. Progress cleaning.
   4. Starting and adjusting.
   5. Protection of installed construction.
   6. Correction of the Work.

B. Related Sections include the following:
   1. Section 01 73 10 - Cutting and Patching.
   2. Section 01 77 00 - Closeout Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
   1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
   1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
   2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
   3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
   4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utilities affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measures: Take field measurements as required to fit the Work properly. Re-check measurements before installing each product. Where portions of the Work area indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a RFI to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.03 CONSTRUCTION LAYOUT

Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect and Owner promptly.

3.04 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated:
   1. Make vertical work plumb and make horizontal work level.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
   3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
   4. Maintain minimum headroom clearance of 8 feet in spaces with a suspended ceiling.
B. Comply with manufacturer's written instruction and recommendations for installing products in applications indicated.
C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   2. Allow for building movement, including thermal expansion and contraction.
G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.05 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold materials more than seven (7) days during normal weather or three (3) days if the temperature is expected to rise above 80°F (27°C).
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
B. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
C. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
D. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
E. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
F. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
   1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
I. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.06 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Section 00 21 13 part 1.08

3.07 PROTECTION OF INSTALLED CONSTRUCTION

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

3.08 CORRECTION OF THE WORK

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

END OF SECTION 01 70 00

SECTION 01 73 10 CUTTING & PATCHING

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes procedural requirements for cutting and patching. Including, the cutting and patching of existing concrete slab as necessary for electrical work.
B. Related Divisions and Sections include the following
   1. Divisions 2 through 28, see Sections for specific requirements and limitations applicable for cutting and patching individual parts of the Work.

1.02 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of the other Work.

1.03 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
   1. Water, moisture, or vapor barriers.
   2. Membranes and flashings.
   3. Exterior storefront wall construction.
   4. Equipment supports.
   5. Piping, ductwork, vessels, and equipment.
   6. Noise and vibration control elements and systems.
D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.04 WARRANTY

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

PART 2 PRODUCTS

2.01 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.
B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
   1. Compatibility: Before patching, verify compatibility with suitability of substrates, including compatibility with existing finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.
B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3.03 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings weather-tight when not in use.
   2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. Excavating and backfilling: Comply with requirements in applicable Div. 2 Sections where required by cutting and patching operations.
   5. Mechanical and electrical services: Cut off pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
   6. Proceed with patching after construction operations requiring cutting are complete.
   7. Keep water or debris from entering existing construction.
C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
   1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
   2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   3. Patch cut concrete slabs to level of finish required for floor finishes. Refer to section 09 05 61 "Common Work Results for Flooring Preparation".

END OF SECTION 01 73 10

SECTION 01 77 00 CLOSEOUT REVIEW (SUBSTANTIAL COMPLETION)

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Inspection procedures.
   2. Project Record Documents.
   3. Operation and maintenance manuals.
   4. Final cleaning.
B. Related Sections include the following:
   1. Section 01 29 76 “Progress Payment Procedures”
   2. Divisions 2 through 10 Sections for specific closeout and special cleaning requirements for products of those Sections.

1.02 SUBSTANTIAL COMPLETION OF EACH PHASE

A. Notifications: Notify Owner and Architect that work of the Phase has been completed.
B. Punch List: Contractor is to prepare a list of any items which are not fully completed at time of Owner’s occupancy of the Phase. (CDR #20)
C. Inspection Procedures: Upon receipt of the Contractor's request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. Following the initial inspection, the Architect will either prepare the certificate of substantial completion or will advise the Contractor of work which must be performed before the certificate will be issued. The Architect will repeat the inspection when requested and when assured that the Work has been substantially completed. The Architect will perform one initial inspection and one re-inspection. Additional inspections will be done at Contractor's expense.
D. All Contractor’s tools and equipment are to be removed from each phase at the completion of the phase.
E. After substantial completion of each phase, the Owner will re-occupy the area, and the Contractor will no longer be permitted access to the area without prior scheduled approval by the Owner.

1.03 SUBSTANTIAL COMPLETION OF PROJECT

Preliminary Procedures: **Before** requesting inspection for determining date of Substantial Completion, complete the following: (List items below that are incomplete in request.)

A. Prepare a list of items to be completed and corrected (punch list) and the value of incomplete work (by item and in total). (CDR #20)
B. Advise Owner of pending insurance changeover requirements.
C. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits (CDR #19), operating certificates (CDR #28), and similar releases.
D. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents (CDR #24).
E. Terminate and remove facilities from Project site, along with construction equipment, tools, and similar elements.
F. Submit changeover information related to Owner’s occupancy, use, operation, and maintenance.
G. Complete final cleaning requirements, including touchup painting.
H. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

1.04 FINAL COMPLETION OF PROJECT

A. General: Complete the following before requesting the Architect/Engineer’s final inspection for certification of final acceptance, and final payment as required by the General Conditions. List known exceptions, if any, in the request.

1. Submit the final payment request with final releases and supporting documentation not previously submitted and accepted (CDR# 13). Include certificates of insurance for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect/ Engineer's final punchlist (CDR #20) of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Architect/Engineer.
4. Submit consent of surety. (CDR # 26)
5. Submit a final liquidated damages settlement statement, acceptable to the Owner.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements (CDR # 1).
7. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information (CDR # 22).
8. Deliver tools, spare parts, extra stock of material and similar physical items to the Owner.
9. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities and services from the project site, along with construction tools and facilities, mock-ups, and similar elements.
10. Complete final cleaning up requirements, including touch-up painting of marred surfaces.
11. Touch-up and otherwise repair and restore marred exposed finishes.

B. Reinspection Procedure: The Architect/Engineer will reinspect the work upon receipt of the contractor's notice that the work, including punchlist items resulting from earlier inspections, has been completed, except for these items whose completion has been delayed because of circumstances that are acceptable to the Architect/Engineer. Upon completion of reinspection, the Architect/Engineer will either prepare a certificate of final acceptance or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance. If necessary, the reinspection procedure will be repeated. Additional inspections will be done at Contractor's expense.

1.05 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Document for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect’s reference during normal working hours.

B. Record Drawings (CDR #27): Maintain and submit one set of full-sized copies or prints of all Contract Drawings and Shop Drawings.
   1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, sub-Contractor, or similar entity, to prepare the marked-up Record Prints.
      a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
      b. Accurately record information in an understandable drawing technique.
      c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
      d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
   2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
   3. Mark important additional information that was either shown schematically or omitted from original Drawings.
   4. Note Construction Change Directive numbers, Change Orders, alternate numbers, and similar identification where applicable.
   5. Identify, sign and date each Record Drawing; include the designation “PROJECT RECORD DRAWING” in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
   6. **At the completion of the project, the contractor will prepare a complete set of record drawings in AutoCAD format, and submit these in addition to the paper as-builts at the end of each phase. CAD backgrounds will be provided to the contractor from the Architect for this purpose.**

C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in specifications, addenda, and contract modifications.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
   3. Note related Change Orders, Record Drawings, and Product Data, where applicable.
D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation varies substantially from that indicated in Product Data.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
   3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.
E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.05 OPERATION AND MAINTENANCE MANUALS

A. Assemble three (3) complete sets of operation and maintenance data (CDR #28) indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
   1. Maintenance Data:
      a. Manufacturer's information, including list of spare parts.
      b. Name, address, and telephone number of Installer or supplier.
      c. Maintenance procedures.
      d. Maintenance and service schedules for preventative and routine maintenance.
      e. Maintenance record forms.
      f. Source of spare parts and maintenance materials.
      g. Copies of maintenance service agreements.
      h. Copies of warranties and bonds.
B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket-inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

1.06 CLOSEOUT PROCEDURES

General Operating and Maintenance Instructions: Arrange for each installer of operating equipment and other work that requires regular or continuing maintenance, to meet at the site with the Owners personnel to provide necessary basic instruction in the proper operation and maintenance of the entire work. Where installers are not experienced in the required procedures, include instruction by the manufacturer's representatives. As part of this instruction provide a detailed review of the following items: Maintenance manuals, record documents, spare parts and materials, tools, lubricants, fuels, identification systems, control sequences, hazards, cleaning, and warranties, bonds, maintenance agreements and similar continuing commitments. As part of this instruction for operating equipment demonstrate the following procedures: Start-up, shut-down, emergency operations, noise and vibration adjustments, safety procedures, economy and efficiency adjustments, and effective energy utilization.

PART 3 EXECUTION

3.01 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
   1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project.
      a. Clean Project site, in areas disturbed by construction activities, of rubbish, waste material, litter, and other foreign substances.
      b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
      c. Remove tools, construction equipment, machinery, and surplus material from Project site.
      d. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
      e. Sweep concrete floors broom clean in unoccupied spaces.
      f. Remove labels which are not required as permanent labels.
      g. Clean transparent materials, including mirrors and glass in doors and windows, to a polished condition. Remove putty and other substances which are not noticeable as vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
      h. Clean exposed exterior and interim hard-surfaced finishes to a dust-free condition, free of dust, stains, films and similar noticeable distracting substance. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
      i. Wipe surfaces of mechanical and electrical equipment clean. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
      j. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
      k. Removal of Protection: Except as otherwise indicated or requested by the Architect/Engineer, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.
   2. Compliance: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner. Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these materials to the Owner's best advantage as directed.
   3. Leave Project clean and ready for occupancy

END OF SECTION 01 77 00

SECTION 01 77 19 CONTRACT CLOSE OUT

A. Upon completion of the Work, the Contractor shall notify the Project Manager in writing. Upon receipt of the notification, the Project Manager will determine if the Work conforms to the terms of the Contract. If materials, equipment, or workmanship do not meet the terms of the Contract, the Project Manager shall prepare a final punch list (CDR #20) of such items and submit it to the Contractor. Following completion of the corrective work by the Contractor, the Project Manager shall notify WTA's Procurement and Contracts Manager that the Work has been completed in accordance with the Contract. Final acceptability determination is made by WTA. Upon acceptance of the project, WTA's Procurement and Contracts Manager shall verify Affidavits of Wages Paid have been approved for Contractor and all sub-Contractors. Once the Affidavits are approved, the Procurement Contracts Manager will immediately file a notice of completion with the State of Washington.
B. The final application for payment shall be accompanied by all required documentation called for in the contract. Please refer to RCW Chapter 60.28 for procedures regarding lien releases and waivers.
C. If, after reviewing the Contractor's final application for payment including all documentation required, the Architect and the Project Manager determine that the Work is complete, they will recommend that final payment, including all retainages, be made by WTA. The final payment, less retainage, will be due and payable by WTA thirty (30) days after any legal notice periods have expired.
D. When WTA's Procurement and Contracts Manager receives approval from ESD, DOR, and L&I that there are no outstanding debts, the final retainage payment will be released.

END OF SECTION 01 77 19

-DIVISION 02- EXISTING CONDITIONS

SECTION 02 41 00 DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes, including concrete slab, for relocation of below-slab conduit.

1.02 RELATED REQUIREMENTS

A. Section 01 10 00 – Summary of Work
B. Section 01 70 00 - Execution and Closeout Requirements.
C. Section 01 73 10 - Cutting and Patching.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

PART 3 EXECUTION

3.01 SCOPE

A. Remove portions of existing buildings in the following sequence:
   1. Perform demolition required in each phase only during that phase of construction.
   2. Remove other items indicated, for salvage and relocation.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with other requirements specified in Section 01 70 00 and Section 01 73 10.
B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures or materials.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
C. Do not begin removal until receipt of notification to proceed from Owner.
D. Minimize production of dust due to demolition operations.
E. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

3.03 EXISTING UTILITIES

A. If necessary, coordinate work with utility companies; notify utilities before starting work and comply with their requirements;.
B. Protect existing utilities to prevent damage.
C. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 48 hours prior written notification to Owner.

D. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as shown.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
   4. Owner will not approve equitable adjustment for a contractor if a complete pre-demolition inspection does not occur.
B. Separate areas in which demolition is being conducted from other areas that are occupied.
   1. Provide, erect, and maintain temporary dustproof partitions needed to protect occupied spaces.
C. Remove existing work as indicated on drawings and as required to accomplish new work.
D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. See Section 01 10 00 for other limitations on outages and required notifications.
   4. Verify with Owner that abandoned services serve only permanently abandoned facilities before removal.
   5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site and properly dispose of or recycle.

END OF SECTION 02 41 00

-DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

SECTION 06 20 00 FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Finish carpentry items.
B. Wood door frames, glazed frames.
C. Wood casings and moldings.
D. Hardware and attachment accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 41 00 - Architectural Wood Casework: Shop fabricated custom cabinet work.
B. Section 09 91 23 - Interior Painting: Painting and finishing of finish carpentry items.

1.03 REFERENCE STANDARDS

A. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.
B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
C. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2009.
D. PS 1 - Structural Plywood; 2009.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with electrical rough-in and installation of associated and adjacent components.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect work from moisture damage.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI (AWS) for Custom Grade.
B. Interior Woodwork Items:
   1. Moldings, Bases, Casings, and Miscellaneous Trim: Eastern White Maple, prepare for transparent stain finish.

2.02 SHEET MATERIALS

A. Softwood Plywood, Not Exposed to View: Any face species, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.
B. Hardwood Plywood: Face species as indicated, plain sawn, book matched, medium density fiberboard core; HPVA HP-1, Front Face Grade AA, Back Face Grade 1, glue type as recommended for application.

2.03 WOOD VENEER PANELS

A. Owner- supplied wood-veneered plywood panels matching existing finishes in the building will be used as indicated in the drawings. <u>These panels will be available for view at the Pre-bid Meeting</u>.

2.05 FASTENINGS

A. Adhesive for Purposes Other Than Laminate Installation:
   1. Suitable for the specific purpose;
   2. Free of formaldehyde or other volatile organic compounds.

2.06 ACCESSORIES

A. Lumber for Shimming and Blocking: Softwood lumber of any species.
B. Plastic Edge Trim: Extruded convex shaped; smooth finish; self-locking serrated tongue; of width to match component thickness; matching color.
C. Wood Filler: Solvent base, tinted to match surface finish color.

2.07 FABRICATION

A. Shop assemble work for delivery to site, permitting passage through building openings.
B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) requirements for grade indicated.
B. Set and secure materials and components in place, plumb and level.
C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

3.03 PREPARATION FOR SITE FINISHING

A. Set exposed fasteners.
B. Apply wood filler in exposed fastener indentations.
C. Sand work smooth.

3.04 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.
B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION 06 20 00

SECTION 06 41 00 ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Specially fabricated cabinet units.
B. Countertops.
C. Cabinet hardware.

1.02 RELATED REQUIREMENTS

A. Section 08 80 00 - Glazing: Glass for casework.
B. Section 09 91 23 - Interior Painting: Site finishing of cabinet exterior.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
B. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.
C. BHMA A156.9 - American National Standard for Cabinet Hardware; 2010.
D. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Contractor will convene a pre-installation meeting not less than one (1) week before starting work of this section; require attendance by all affected installers and sub-contractors.

1.05 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Minimum Scale of Detail Drawings: 1-1/2 inch to 1 foot.
   2. Provide the information required by AWI/AWMAC/WI (AWS).
B. Product Data: Provide data for hardware accessories.
C. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

1.06 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum ten years of documented experience.
   1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
B. Quality Certification: Provide AWI (QCP) inspection report and quality certification of completed work.
   1. Upon completion of installation provide certificate certifying that the installation and products meet the specified requirements.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.08 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI (AWS) for Custom Grade.
B. Plastic Laminate Faced Cabinets: Custom grade.
C. Casework at Dispatch Room 140:
   1. Finish - Exposed Exterior Surfaces: as indicated in drawings. Note use of Owner-furnished wood panels where noted on drawings.
   2. Finish - Exposed Interior Surfaces: Decorative laminate.
   3. Casework Construction Type: Type A - Frameless.
   4. Cabinet Design Series: As indicated on drawings.
   5. Adjustable Shelf Loading: 50 lbs. per sq. ft.
      a. Deflection: L/144.
      b.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

2.03 LAMINATE MATERIALS

A. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

2.04 COUNTERTOPS

A. Plastic Laminate Countertops: Medium density fiberboard substrate covered with HPDL, conventionally fabricated and self-edge banded.

2.05 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.
B. Plastic Edge Banding: Extruded PVC, convex shaped; smooth finish; self-locking serrated tongue; of width to match component thickness.
   1. Color: As selected by Architect from manufacturer's standard range.
C. Glass: Type A as specified in Section 08 8000.
D. Fasteners: Size and type to suit application.
E. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
F. Grommets: Standard plastic grommets for cut-outs, in color to match adjacent surface.

2.06 HARDWARE

A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self-rests, polished chrome finish, for nominal 1 inch spacing adjustments.

2.07 SITE FINISHING MATERIALS

A. Stain, Shellac, Varnish, and Finishing Materials: As required by AWI/AWMAC/WI (AWS).

2.08 FABRICATION

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
D. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises.
   1. Cap exposed plastic laminate finish edges with material of same finish and pattern.
E. Shop glaze glass materials using the Interior Dry method specified in Section 08 8000.

2.09 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.
B. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.
C. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. System - 1, Lacquer, Nitrocellulose.
      b. Sheen: Flat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) requirements for grade indicated.
B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
C. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
D. Do not secure casework located on carpet until carpet has been replaced in Phase 6.

3.03 ADJUSTING

A. Adjust installed work.
B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION 06 41 00

-DIVISION 07- THERMAL AND MOISTURE PROTECTION

SECTION 07 21 00 THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Batt insulation in interior walls for acoustical purposes. Sound insulation is to be provided in all new interior walls, and all opened or exposed existing walls.

1.02 RELATED REQUIREMENTS

A. Section 09 21 16 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.03 REFERENCE STANDARDS

A. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation; 2016a.
B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2016.
D. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2016.

1.04 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.05 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation in interior Metal Framed Walls: Batt insulation with no vapor retarder.

2.02 BATT INSULATION MATERIALS

A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
   1. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; un-faced flame spread index of zero (0) when tested in accordance with ASTM E84.
   1. Smoke Developed Index: zero (0), when tested in accordance with ASTM E84.

2.03 ACCESSORIES

A. Insulation Fasteners: Appropriate for purpose intended and approved by manufacturer for this use.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.
B. Install in interior wall spaces without gaps or voids. Do not compress insulation.
C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION 07 21 00

-DIVISION 08- OPENINGS

SECTION 08 12 13 HOLLOW METAL FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal frames for non-hollow metal doors.
B. Interior glazed borrowed lite frames.

1.02 RELATED REQUIREMENTS

A. Section 08 14 16 - Flush Wood Doors: Non-hollow metal door for hollow metal frames.
B. Section 08 71 00 - Door Hardware: Hardware and silencers.
C. Section 08 80 00 - Glazing: Glazed borrowed lites.
D. Section 09 91 23 - Interior Painting: Field painting of frames and finishing of doors.

1.03 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
B. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
C. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
E. 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; 2016.
F. 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; 2015.
G. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
H. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
I. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
J. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
K. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittal Procedures for submittal procedures.
B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
D. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three (3) years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with applicable requirements and in compliance with standards and/or custom guidelines as indicated.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Frames with Integral Casings:
   1. Basis of design: Ceco Door, an Assa Abloy Group company; Level 2 - Heavy Duty Commercial: www.assaabloydss.com.
   2. Approved Equal. See section 00 91 16 for information on submitting approved equals

2.02 DESIGN CRITERIA

A. Refer to Door and Frame Schedule on the drawings for frame sizes, fire ratings, sound ratings, finishing, door hardware to be installed, and other variations, if any.
B. Door Frame Type: Provide hollow metal door frames with integral casings.
C. Steel used for fabrication of frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
D. Accessibility: Comply with ICC A117.1 and ADA Standards.
E. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturers standard.
F. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior frame that is also indicated as being sound-rated must comply with the requirements specified for exterior frames and for sound-rated frames; where two requirements conflict, comply with the most stringent.
G. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115, NAAMM HMMA 830 and NAAMM HMMA 831 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
H. Frames for Interior Glazing or Borrowed Lites: Construction and face dimensions to match door frames, and as indicated on drawings.

2.03 HOLLOW METAL DOOR FRAMES WITH INTEGRAL CASINGS

A. Frame Finish: Factory primed and field finished.
B. Type SQ, Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.

2.04 ACCESSORIES

A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, Manufacturer's standard.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

A. Install frames in accordance with manufacturer's instructions and related requirements of specified frame standards or custom guidelines indicated.
B. Coordinate frame anchor placement with wall construction.
C. Coordinate installation of glazing.
D. Coordinate installation of hardware.

3.03 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated.
B. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

3.04 SCHEDULE

A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION 08 12 13

SECTION 08 14 16 FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; non-rated.

1.02 RELATED REQUIREMENTS

A. Section 08 12 13 - Hollow Metal Frames.
B. Section 08 71 00 - Door Hardware.
C. Section 08 80 00 - Glazing.
D. Section 09 91 23 - Interior Painting: Field finishing of doors.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
B. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.
C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

1.04 SUBMITTALS

A. See Section 01 33 00 Submittal Procedures, for submittal procedures.
B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
D. Specimen warranty.
E. Samples: Submit two (2) samples of door veneer, 12 by 12 inch in size illustrating wood grain, stain color, and sheen.
F. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five (5) years of documented experience.
   1. Accredited participant in the AWI certification program prior to the commencement of fabrication and throughout the duration of the project.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.
B. Accept doors on site in manufacturer's packaging. Inspect for damage.
C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.07 WARRANTY

A. See Section 01 77 00 - Closeout Submittals, for additional warranty requirements.
B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 DOORS

A. Doors: Refer to drawings for locations and additional requirements. Note that existing doors are to be reused in several locations.
   1. Quality Level: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS).
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at each location.
   2. Wood veneer facing for field transparent finish as indicated on drawings.

2.02 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

2.03 DOOR FACINGS

A. Veneer Facing for Transparent Finish: Premium Grade Eastern White Maple all sapwood uniform light wood veneer, HPVA Grade AA, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.

2.04 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.
B. Cores Constructed with stiles and rails:
   1. Provide solid blocks at lock edge for hardware reinforcement.
C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
   1. Exception: Doors to be field finished.
F. Provide edge clearances in accordance with the quality standard specified.

2.05 FACTORY FINISHING - WOOD VENEER DOORS

A. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. System - 4, Latex Acrylic, Water-based.
      b. Sheen: Satin.

2.06 ACCESSORIES

A. Hollow Metal Door Frames: As specified in Section 08 12 13.
B. Glazing: As specified in Section 08 80 00.
C. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.
D. Door Hardware: As specified in Section 08 71 00.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.
C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
B. Field-Finished Doors: Trimming to fit is acceptable.
   1. Adjust width of non-rated doors by cutting equally on both jamb edges.
   2. Trim maximum of 3/4 inch off bottom edges.
C. Use machine tools to cut or drill for hardware.
D. Coordinate installation of doors with installation of frames and hardware.
E. Coordinate installation of glazing.

3.03 TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.
B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.
B. Adjust closers for full closure.

END OF SECTION 08 14 16

SECTION 08 71 00 DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for swinging, sliding, and folding doors except special types of unique and non-matching hardware specified in other sections.

1.02 QUALITY ASSURANCE

A. Qualifications:
   1. Manufacturer: Manufacturers named in Part 2 of this section with not less than five (5) years' experience in manufacturing commercial door hardware of the type indicated.
   2. Hardware Supplier:
      a. A recognized architectural finish hardware supplier who has been furnishing hardware in the same state as the project for a period of not less than five (5) years.
      b. Hardware supplier's organization shall include an experienced Architectural Hardware Consultant (AHC), certified by the Door and Hardware Institute (DHI), who is physically available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor. Mail or telephone correspondence is not acceptable.
      c. Hardware supplier shall have local warehousing facilities and shall maintain an adequate parts inventory of items supplied for future service to the owner. Supplier will be a factory authorized distributor of all hardware specified.
   3. Installer: Company specializing in installing work of this section with not less than three (3) years' experience and acceptable to the manufacturer and the hardware supplier. The hardware installer shall meet with the representative of the hardware supplier to jointly inventory all hardware items. Upon satisfactory inventory of products, the hardware installer accepts responsibility for all hardware items inventoried.
B. Regulatory Requirements:
   1. Provide hardware for openings, whether specified or not, in compliance with NFPA Standard No. 80, IBC 2013 and local building code requirements. Provide only hardware which has been tested and listed by UL or WHI for types and sizes of doors required and complies with requirements of door and door frame labels.
   2. Provide hardware which meets or exceeds handicap accessibility per local building code requirements. Conform to the Americans with Disabilities Act (ADA) of 1990.

1.03 SUBMITTALS

A. Under provisions of Section 01340, submit the following:
   1. Product information: Manufacturer's published technical product data for all specified door hardware items indicating compliance with the requirements.
   2. Hardware Schedule:
      a. Hardware schedules are intended for the Contractor's coordination of the work. Review and acceptance by the Architect or Owner does not relieve the Contractor of his exclusive responsibility to fulfill the requirements as shown and specified.
      b. Submit hardware schedule in the manner and format as suggested by the Door and Hardware Institute (DHI) complying with the actual construction progress schedule requirements for each draft.
   3. Templates: Hardware supplier will furnish hardware templates to the Contractor for each fabricator of doors, frames, and other work to be shop prepared or factory prepared for the installation of hardware.
   4. Warranty: Provide the manufacturer's standard warranty for each product, not to be less than one (1) year after acceptance of the building by the owner. Door closers shall not be warranted for less than ten (10) years.

PART 2 PRODUCTS

2.01 MATERIALS AND FABRICATION

A. General:
   1. Provide all door hardware for complete work, in accordance with the drawings and as specified herein.
   2. Quantities listed, in any instance, are for the Contractor's convenience only and are not guaranteed.
   3. Provide items and quantities not specifically mentioned to ensure a proper and complete operational installation. Match the quality and finish of items specified.
   4. Provide miscellaneous hardware as listed in hardware groups.
B. See section 00 91 16 for information on submitting approved equals

2.02 HINGES

A. Manufacturer:
   1. Listed in Door Hardware Schedule: STANLEY
B. Number of Hinges: Provide number of hinges indicated, but not less than 3 hinges per door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.

2.03 LOCKSETS, LATCHSETS, PRIVACY SETS AND CYLINDERS:

A. Manufacturer:
   1. Listed in Door Hardware Schedule: BEST
B. Lock Throw: Provide 3/4" minimum throw of mortise type latches and deadbolts used. Cylindrical latches will be 1/2" minimum. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.

2.04 KEYS, KEYING, AND KEY CONTROL

A. Keys:
   1. Quantities: These quantities are to establish a maximum allowable quantity of cut keys to service the project and may not necessarily be assigned as noted. A lesser quantity of cut keys required will not result in any credits, nor a quantity of uncut keys to be issued unless noted otherwise.
      a. Three (3) change keys per each cylinder unit.
      b. Five (5) master keys per master.
      c. Ten (10) construction keys.
   2. Deliver keys to the Owner or Owner's representative.
B. Keying:
   1. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual change keys for each lock which is not designated to be keyed alike with a group of related locks.

2.05 EXIT DEVICES AND MULLIONS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: NONE USED
B. Provide risers, as needed, to prevent interference with door glazing kits.
C. Spacers as needed for proper application of removable mullions on narrow stop type frames shall be an integral part of the frame and supplied by the frame manufacturer.

2.06 CLOSERS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: STANLEY
B. Provide parallel arms for all overhead closers, except as otherwise indicated. Provide drop plates as needed to prevent glazing interference.

2.07 OVERHEAD STOPS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: NONE USED
B. Mount stops to the maximum degree of opening available before conflict with adjacent structures, or, if adjacent structures are not considered, to the maximum allowable by stop manufacturer's template.

2.08 WALL AND FLOOR STOPS

A. Manufacturers:
   1. Listed in Door Hardware Schedule: ROCKWOOD
B. General: Except as otherwise indicated, provide stops (wall, floor or overhead) at each leaf of every swinging door leaf.

2.09 PROTECTION PLATES

A. Manufacturers:
   1. Listed in Door Hardware Schedule: ROCKWOOD
B. Sizes: Fabricate protection plates (armor, kick or mop) not more than 2" less than door width on stop side and not more than 1" less than door width on pull side, x the height indicated.
C. Metal Plates: Stainless Steel, 18 gauge (0.050) thick. Satin finish (US32D, 630), beveled four edges (B4E).

2.10 GASKETS AND SWEEPS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: PEMKO
B. General: Except as otherwise indicated, provide continuous weather-stripping at each edge of every exterior door leaf. Provide type, sizes and profiles indicated as drawn or scheduled.

2.11 THRESHOLDS

A. Manufacturer:
   1. Listed in Door Hardware Schedule: PEMKO
B. Where there is conflict between scheduled thresholds and details, details shall have precedence. Revise details only if necessary to comply with handicap accessibility requirements. Notify the Architect of such required modifications.

2.12 SILENCERS

A. Manufacturers:
   1. Listed in Door Hardware Schedule: ROCKWOOD

2.13 FINISHES

A. Exposed surfaces of hardware shall be Brushed Chrome (US26D, 626), unless otherwise indicated.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install each hardware item in compliance with the manufacturer's instructions, requirements of NFPA 80, UBC, ADA, and Washington State Rules and Regulations for Barrier Free Facilities and recommendations of the DHI.
B. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
C. Where not factory machined, machine cut for hardware per template, as required.

3.02 ADJUSTING

A. Initial Adjustment:
   1. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit.
   2. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
B. Final Adjustment: Wherever hardware installation is made more than one (1) month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.03 HARDWARE SCHEDULE

Hardware Group #1 – Door #137A

3 ea. Hinges	FBB179NRP 4.5 x 4.5 US26D
1 ea. Lockset	45H7A15H630
1 ea. Construction Core	Brass
1 ea. Wall Stop	409 US32D
3 ea. Silencers	608

Hardware Group #2 – Doors # 139A, 140B

3 ea. Hinges	FBB179NRP 4.5 x 4.5 US26D
1 ea. Lockset	45H7A15H630
1 ea. Construction Core	Brass
1 ea. Closer	D4550EDA 689
1 ea. Kick Plate	K1050 10” x 2” LTDW 4BE 630
1 ea. Wall Stop	409 US32D
3 ea. Silencers	608

Hardware Group #4 – Doors #140A

1 ea. Pocket Door Frame	Johnson #1500
1 ea. Pocket Door Pull	1069 630

Hardware Group #5 – Doors #133A, 138A

1 ea. Wall Stop	409 US32D

Reuse All Existing Hardware

END OF SECTION 08 71 00

SECTION 08 80 00 GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Glazing units.
B. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 20 00 - Finish Carpentry: 06 2000 components with requirement for glass.
B. Section 06 41 00 - Architectural Wood Casework: Cabinets with requirements for glass windows.
C. Section 08 14 16 - Flush Wood Doors: Glazed lites in doors.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2010.
C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2015).
D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014a.
E. ASTM C1036 - Standard Specification for Flat Glass; 2011.
F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
G. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2014.
H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
I. GANA (SM) - GANA Sealant Manual; 2008.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least five (5) years documented experience.

PART 2 PRODUCTS

2.01 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless noted otherwise.
   1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality-Q3.
   2. Heat-Strengthened and Fully Tempered Types: ASTM C1048, Kind HS and FT.
   3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 and 16 CFR 1201 criteria.
   4. Thicknesses: As indicated; provide greater thickness as required for exterior glazing wind load design.
B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
   1. Laminated Safety Glass: Complies with ANSI Z97.1 and 16 CFR 1201 test requirements for Category II.

2.02 GLAZING UNITS

A. Type G-2 - Monolithic Interior Vision Glazing:
   1. Applications: Interior glazing unless otherwise indicated.
   2. Glass Type: Annealed float glass.
   3. Tint: Clear.
   4. Thickness: 1/4 inch, nominal.

B. Type G-5 - Monolithic Safety Glazing: Non-fire-rated.
   1. Applications:
      a. Glazed lites in doors, except fire doors.
      b. Sliding glass doors.
      c. Glazed sidelights to doors, except in fire-rated walls and partitions.
      d. Other locations required by applicable federal, state, and local codes and regulations.
      e. Other locations indicated on drawings.
   2. Glass Type: Fully tempered safety glass as specified.
   3. Tint: Clear.
   4. Thickness: 1/4 inch, nominal.

2.03 GLAZING COMPOUNDS

A. Type GC-4 - Polyurethane Sealant: Single component, chemical curing, non-staining, non-bleeding; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 20 to 35; color as selected.
B. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C920, Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

2.04 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self-adhesive on one face.
C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent (100%) solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.
E. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.
B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
E. Place glazing tape on free perimeter of glazing in same manner described above.
F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
G. Carefully trim protruding tape with knife.

3.05 FIELD QUALITY CONTROL

A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
B. Monitor and report installation procedures and unacceptable conditions.

3.06 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
B. Remove non-permanent labels immediately after glazing installation is complete.
C. Clean glass and adjacent surfaces after sealants are fully cured.
D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.07 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste.
B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION 08 80 00

-DIVISION 09- FINISHES

SECTION 09 05 61 COMMON WORK RESULTS FOR FINISHES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section applies to all floors identified in the contract documents as to receive the following types of floor coverings:
   1. Carpet tile.
B. Removal of existing floor coverings.
C. Patching and repair of existing concrete slab(s) where cut for work of other trades.
D. Preparation of existing concrete floor slabs for installation of floor coverings.
E. Testing of concrete floor slabs for moisture and alkalinity (pH).

1.02 REFERENCES

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens); 2016a.
B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete; 1999 (Reapproved 2014).
C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2011.
E. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute; October 2011.

1.03 SUBMITTALS

A. Visual Observation Report: For existing floor coverings to be removed.
B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
   1. Moisture and alkalinity (pH) limits and test methods.
   2. Manufacturer's required bond/compatibility test procedure.
C. Adhesive Bond and Compatibility Test Report.
D. Copy of RFCI (RWP).

1.04 QUALITY ASSURANCE

A. Contractor may perform adhesive and bond test with his own personnel or hire a testing agency.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, handle, and protect products in accordance with manufacturer’s instructions and recommendations.
B. Deliver materials in manufacturer’s packaging; include installation instructions.
C. Keep materials from freezing.

1.06 FIELD CONDITIONS

A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.
B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
   1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
   2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.

B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

A. Perform following operations in the order indicated
   1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
      a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
      b. Removal of existing floor covering.
   2. Preliminary cleaning.
   3. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
   4. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
   5. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
   6. Specified remediation, if required.
   7. Patching, smoothing, and leveling, as required.
   8. Other preparation specified.
   9. Adhesive bond and compatibility test.
   10. Protection.

B. Remediation
   1. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 REMOVAL OF EXISTING FLOOR COVERINGS

A. Comply with local, State, and federal regulations and recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to floor covering being removed.
B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 PRELIMINARY CLEANING

A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
B. Do not use solvents or other chemicals for cleaning.

3.04 MOISTURE VAPOR EMISSION TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
C. Test in accordance with ASTM F1869 and as follows.
D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
F. Report: Report the information required by the test method.

3.05 ALKALINITY TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
C. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
D. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.06 PREPARATION

A. See individual floor covering section(s) for additional requirements.
B. Comply with requirements and recommendations of floor covering manufacturer.
C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
D. Do not fill expansion joints, isolation joints, or other moving joints.

3.07 ADHESIVE BOND AND COMPATIBILITY TESTING

A. Comply with requirements and recommendations of floor covering manufacturer.

3.08 PROTECTION

A. Cover prepared floors with building paper or other durable covering.

END OF SECTION 09 05 61

SECTION 09 21 16 GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.
B. Metal stud wall framing.
C. Acoustic insulation.
D. Gypsum wallboard.
E. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 07 21 00 - Thermal Insulation: Acoustic insulation.

1.03 REFERENCE STANDARDS

A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.
E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2015.
F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.
G. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.
H. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.
I. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.
J. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014a.
K. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
L. ASTM E413 - Classification for Rating Sound Insulation; 2016.
M. GA-216 - Application and Finishing of Gypsum Board; 2013.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of documented experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.
B. Interior Partitions, Indicated as Acoustic: (ALL new walls in this project are to be treated as accoustic). Provide completed assemblies with the following characteristics:
   A. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

2.02 METAL FRAMING MATERIALS

A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
   1. Studs: "C" shaped with flat or formed webs with knurled faces.
   2. Runners: U shaped, sized to match studs.
B. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
   1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
C. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.

2.03 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces, unless otherwise indicated.
   2. Thickness:
      a. Vertical Surfaces: 5/8 inch.

2.04 ACCESSORIES

A. Acoustic Insulation: As specified in Section 07 21 00.
B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
C. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
   1. Types: As detailed or required for finished appearance.
   2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
B. Studs: Space studs at 16 inches on center.
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
C. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
D. Blocking: Install wood blocking for support of:
   1. Framed openings.
   2. Wall mounted cabinets.
   3. Wall mounted door hardware.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.04 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
C. Installation on Metal Framing: Use screws for attachment of gypsum board.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as directed.
B. Corner Beads: Install at external corners, using longest practical lengths.
C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.

3.07 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION 09 21 16

SECTION 09 51 00 ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.
B. Acoustical units.
C. Supplementary acoustical insulation above ceiling.

1.02 RELATED REQUIREMENTS

A. Section 26 50 00 - Lighting: Light fixtures in ceiling system.

1.03 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2013a.
B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2013.
C. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2014.
D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until dust generating activities have terminated, and overhead work is completed, tested, and approved.
B. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

A. See 01 33 00 Submittal Procedures, for submittal procedures.
B. Product Data: Provide data on suspension system components.
C. Samples: Submit two (2) samples 6 by 6 inch in size illustrating material and finish of acoustical units.
D. Manufacturer's Installation Instructions: Indicate special procedures.
E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Acoustical Units: 64 sq ft (16 24" x 24" tiles).

1.06 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years documented experience.
B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years documented experience.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.
B. Basis of Design: USG Halcyon. See section 00 91 16 for information on submitting approved equals
C. Acoustical Tile: Painted mineral fiber, ASTM E1264 Type III, with the following characteristics:
   1. Size: 24 by 24 inches.
   2. Thickness: Match existing adjacent tiles.

3. Light Reflectance: 0.90 percent, determined in accordance with ASTM E1264.
4. NRC Range:.80 to 1.0, determined in accordance with ASTM E1264.
5. Ceiling Attenuation Class (CAC): min. 35, determined in accordance with ASTM E1264.
6. Edge: Square tegular.
7. Surface Color: To be selected by Architect from manufacturer's standard line.
8. Surface Pattern: Perforated, randomly spaced large holes.
9. Suspension System: Concealed grid.

2.02 SUSPENSION SYSTEM

A. Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
B. Exposed Aluminum Suspension System: Extruded aluminum; intermediate-duty.
   1. Profile: Tee; 15/16 inch wide face.
   2. Finish: Painted white.
   3. Products:
      a. Basis of Design: USG DONN Brand DXL See section 00 91 16 for information on submitting approved equals.
C. Concealed Suspension System: Formed steel, commercial quality cold rolled; light-duty.

2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
B. Perimeter Moldings: Same material and finish as grid.
   1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
A. Gasket For Perimeter Moldings: Closed cell rubber sponge tape.
B. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection ratio of 1:360.
C. Re-use existing ceiling grid where shown on drawings, if possible.
D. Locate system on room axis according to reflected ceiling plan.
E. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
J. Do not eccentrically load system or induce rotation of runners.

K. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.
   2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.
B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
C. Fit border trim neatly against abutting surfaces.
D. Install units after above-ceiling work is complete.
E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
F. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION 09 51 00

SECTION 09 65 00 RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient base.
B. Installation accessories.

1.03 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2014c.
B. ASTM F1861 - Standard Specification for Resilient Wall Base; 2008 (Reapproved 2012).
C. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

1.04 SUBMITTALS

A. See Section 01 33 00 Submittal Procedures, for submittal procedures.
B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Wall Base: 6 linear feet of each type and color.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
B. Store all materials off of the floor in an acclimatized, weather-tight space.
C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

1.06 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
   1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
   2. Height: 4 inch.
   3. Thickness: 0.125 inch thick.
   4. Finish: Satin.
   5. Color: To be selected by Architect from manufacturer's full range.

2.02 ACCESSORIES

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

3.02 PREPARATION

A. Clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of sub-floor conditions.
B. Install in accordance with manufacturer's written instructions.
C. Spread only enough adhesive to permit installation of materials before initial set.
D. Fit joints and butt seams tightly.

3.04 RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
B. Install base on solid backing. Bond tightly to wall and floor surfaces.

3.05 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.
B. Clean in accordance with manufacturer's written instructions.

3.06 PROTECTION

A. Protect resilient base from damage until Substantial Completion of each phase of the project.

END OF SECTION 09 65 00

SECTION 09 68 13 TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpet tile, loose laid with edges and control grid adhered.
B. Removal of existing carpet tile.

1.02 RELATED REQUIREMENTS

A. Section 09 05 61 - Common Work Results for Flooring Preparation: Independent agency testing of concrete slabs, removal of existing floor coverings, cleaning, and preparation.

1.03 REFERENCE STANDARDS

A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2016.
B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2014c.
C. CRI 104 - Standard for Installation of Commercial Carpet; 2015.
D. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

1.04 SUBMITTALS

A. See Section 01 33 00 Submittal Procedures, for submittal procedures.
B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
C. Shop Drawings: Indicate layout of joints.
D. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum ten (10) years documented experience.
B. Installer Qualifications: Company specializing in installing carpet tile with minimum five (5) years documented experience and approved by carpet tile manufacturer.

1.06 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Tile Carpeting:
   1. See finish schedule in drawings..

2. No substitution for reasons of Agency Standardization.

2.02 MATERIALS

A. Tile Carpeting, Type C-1: pattern loop, manufactured in one color dye lot.
1. Product: see Finish Schedule manufactured by Patcraft. See section 00 91 16 for information on submitting approved equals
2. Tile Size: 24 x 24 inch, nominal.
3. Color: see Finish Schedule.
4. Pattern: see Finish Schedule.
5. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
6. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
7. Gage: 1/10 inch.
8. Stitches: 10.0 per inch.
9. Density Factor: 17.43 kilotex.
10. Primary Backing Material: non-woven synthetic.
11. Secondary Backing Material: EcoWorx Tile. See section 00 91 16 for information on submitting approved equals

2.03 ACCESSORIES

A. Sub-Floor Filler: White premix latex; or type recommended by flooring material manufacturer.
B. Edge Strips: Vinyl, selected from manufacturer's standard colors.
C. Adhesives:
1. Compatible with materials being adhered; maximum VOC content of 50 g/L; CRI (GLP) certified; in lieu of labeled product, independent test report showing compliance is acceptable.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

3.02 PREPARATION

A. Remove existing floor finishes, including broadloom carpet, carpet tiles and ceramic floor tile.
B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
D. Vacuum clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of sub-floor conditions.
B. Install carpet tile in accordance with manufacturer's instructions.
C. Blend carpet from different cartons to ensure minimal variation in color match.
D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
F. Adhere carpet tile to substrate along centerline of rooms, at perimeter of rooms, where tiles are cut, and at 15 foot intervals throughout rooms. Lay remainder of tile dry over substrate.
G. Trim carpet tile neatly at walls and around interruptions.
H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
B. Clean and vacuum carpet surfaces.

END OF SECTION 09 68 13

SECTION 09 77 16 FRAMED DECORATIVE PANEL SYSTEM

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Section specifies decorative pre-finished panel with pre-engineered mounting system. Designated panels can be removed independently of surrounding panels. Mounting of panels is to be executed with no exposed fasteners. The actuating locking system is concealed from view. No push pin or friction fit fasteners are acceptable.
   1. Wood veneer on fiber board substrate panels.
   2. High pressure laminate of fiber board substrate panels.
   3. Hardware.

B. Related Requirements:
   1. Section 06 20 00 – Finish Carpentry.
   2. Section 06 41 00 - Architectural Wood Casework.

1.02 REFERENCES

A. Reference Standards:
   1. American National Standards Institute (ANSI)
      a. ANSI A208.2 Medium Density Fiberboard (MDF) for Interior Applications.
   2. Architectural Woodwork Institute (AWI)
      a. Architectural Woodwork Standards, 2nd Edition.
   3. Architectural Woodwork Manufacturer's Association of Canada (AWMAC)
      a. Architectural Woodwork Standards, 2nd Edition.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Locate trim members to ensure panel lines coordinate with existing adjacent trim lines, doors, headers, jambs, and other discontinuities in walls.

1.04 SUBMITTALS

A. Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

B. Product Data: Manufacturer's standard specifications and descriptive literature, including:
   1. Product characteristics.
   2. Safety Data Sheets (SDS) for adhesives, sealants and other pertinent materials prior to delivery to site.

C. Shop Drawings: Submit elevations of each wall showing location of paneling and trim members with respect to discontinuities in wall elevation.

D. Samples:
   1. Samples for Selection: Submit manufacturer's standard color and pattern selection samples representing manufacturer's full range of available colors and patterns.
   2. Samples for Verification: Submit sample for each component and for each exposed finish required, prepared on samples of size indicated below complete with exposed molding and trim samples.
      a. Ensure samples indicate type, finish and color specified.
         2) Wood Veneer: Submit sample sets of each Grade wood veneer with finish choice.
            a) Ensure 6 x 6-inch sample shows full range of normal color and texture variations anticipated.
            b) Include sample of topcoat finishes
         3) High Pressure Laminate (HPL) sample chip by HPL manufacturer of choice.

E. Manufacturer's written instructions, including:
   1. Delivery, storage, and handling recommendations.
   2. Preparation and installation recommendations.
F. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
G. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria, and physical requirements.
I. Installer's Experience: Submit verification of evidence of work similar to the work of this Section.
J. Warranty: Fully executed, issued in Whatcom Transportation Authority name and registered with manufacturer, including:
   1. Manufacturer's 30-day warranty covering defects in materials.

1.05 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Supply maintenance data for framed decorative panel system for incorporation into manual specified in Section 01 78 00 Closeout Submittals.
B. Record Documentation: In accordance with Section 01 78 00 Closeout Submittals.
   1. List materials used in framed decorative panel system work.
   2. Warranty: Submit warranty documents specified.

1.06 QUALITY ASSURANCE

A. Installer: Experienced in performing work similar to work of this Section.

1.07 DELIVERY, STORAGE & HANDLING

A. Deliver materials in accordance with manufacturer's written instructions.
   1. Deliver materials on strong pallets in manufacturer's original, unopened, undamaged containers with identification labels intact and product name and manufacturer clearly visible and in sizes to suit project.
   2. Inspect each package for damage and promptly contact Marlite, Inc. directly to report damaged packages or missing components
B. Store materials in manufacturer's unopened packaging until ready for installation.
   1. Maintain temperature range of 60° to 80°F and humidity range of 35 to 55 % during storage, installation, and product life cycle.
   2. Maintain plastic or other protective wrap in place during on site handling until ready for installation.
   3. Keep panels clean and do not stack panels after removal of protection.
C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.08 FIELD CONDITIONS

A. Do not use wood or fiber board products in kitchens, rest rooms, or other high humidity areas.
B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits in accordance with manufacturer's written recommendations for optimum results.
   1. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.09 WARRANTY

A. Project Warranty: Refer to Contract Conditions for project warranty provisions.
B. Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.
   1. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Basis of design: Marlite® Surface Systems® Transforming Wall Panel System, Marlite Inc., 1 Marlite Drive, Dover, Ohio 44622; Phone: (330) 343-6621, Phone: (800) 377-1221; FAX: (330) 343-7296; Email: info@marlite.com; Website: www.marlite.com.
B. Approved Equal. See Section 00 91 16 for information on submitting approved equals

2.02 PERFORMANCE REQUIREMENTS

A. The ability to incorporate removable panels independently on one another using a hidden latching system.
B. The ability to create angled reveals within the same system

2.03 DESCRIPTION

A. The removable Wall Panel System incorporating wood veneer, HPL, and custom finishes.

2.04 HARDWARE

A. Panel (Reveal) Trim:
   1. Reveal: (Reveal options:)
      a. Horizontal: 1/16 inch hidden.
      b. Vertical: 1/16 inch hidden.
B. Hardware and Trim Material:
   1. Aluminum - Heavy weight extruded aluminum 6063-T5 alloy and factory pre-finished.
      a. Exposed aluminum: Clear satin anodized

2.05 PANELS

A. Panel Configuration: Face dimensions: As indicated on drawings
   1. Maximum of 48 inches along unsupported frame.
   2. Panel thickness: 3/4”.
B. Wood Fiber Substrate:
   1. Medium density wood fiberboard, ¾-inch, conforming to ANSI A208.2, industrial-grade MDF or other wood fiber substrates 75 % minimum recycled wood waste and having no added formaldehyde.
C. Finishing System:
   1. Solid Color: As selected from Sherwin-Williams color chart.
D. Wood Veneer Panels: Select AA grade quality wood veneer laminated to wood fiber substrate and coated with furniture grade catalyzed finish as protective topcoat.
   1. Edges: Square cut and finished.
   2. Balancing Backer: Wood veneer measuring between 0.015 and 0.025 inches.
   3. Veneer Face: 0.010 to 0.015 inches with catalyzed finish of approximately 0.003 inches.
   4. Matching between panels: Manufacturer’s standard non-sequenced matching.
   5. Species and Cut: As selected by Architect from manufacturer’s standard range.
      a. Grain direction: Vertical
   6. Finish: Match Existing Adjacent
   7. Acceptable Material: Marlite Wood Veneer Panels or approved equal in accordance with Section 00 91 16.
E. High Pressure Laminate Panels: Vertical grade high pressure plastic laminate adhered to wood fiber substrate.
   1. Balancing Backer: Kraft paper that does not contribute to or pose additional fire hazard.
   2. Color and pattern: As selected by Architect from manufacturer’s standard range.
   3. Acceptable Material: Marlite High Pressure Laminate Panels or approved equal in accordance with Section 00 91 16.

2.06 ACCESSORIES

A. Adhesives: Solvent based low VOC adhesive.
   1. Acceptable Material: As recommended by manufacturer for installation of system.

2.07 FABRICATION

A. Ensure framing panels, hardware and accessories are factory finished and ready to install except for field fabrication as required at work site and perimeter conditions.
   1. Refinish field cut panel edges in accordance with manufacturer's instruction before installation.
   2. Drill corners for cut-outs 1/8-inch radius minimum.

PART 3 EXECUTION

3.01 INSTALLER

A. Use only installers who have training and experience of work similar to the work of this Section.

3.02 EXAMINATION

A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for framed decorative panel system installation in accordance with manufacturer's written recommendations.
   1. Visually inspect substrate in presence of Architect.
   2. Ensure substrate is smooth, sound, clean, dry and free of contaminants and other deleterious materials.
   3. Ensure vapor barrier has been provided on exterior walls behind backing to prevent warping.
   4. Ensure backing panels are smooth, solid, and flat and that drywall joints are taped and finished.
   5. Ensure walls are primed before installation begins.
   6. Ensure mechanical, electrical and building service or items affecting work of this section are placed and ready to receive this work.
   7. Ensure stud spacing does not exceed 24 inches.
   8. Inform Architect of unacceptable conditions immediately upon discovery.
   9. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Architect.
   10. Starting installation of framed decorative panel system implies substrate conditions are acceptable for work of this section.
B. Ensure structural walls are finished and building is completely closed with walls thoroughly dry before starting installation.

3.03 PREPARATION

A. Conditioning: Allow panels to acclimate to balanced environment in installation location for 72 hours minimum before and during installation.
   1. Maintain environmental conditions of 60° to 80° F and 35% to 55% humidity in installation location for 72 hours before and during installation.
B. Protect existing surfaces with drop cloths.
C. Except as indicated, before installing, examine panels and arrange to achieve best combination of color, pattern, texture, and grain.
D. Ensure HVAC system is operable and installation area is balanced to normal operating conditions before proceeding with installation.

3.04 INSTALLATION

A. Install framed decorative panel system in accordance with manufacturer's written recommendations.
B. Install materials straight, plumb and level in accordance with manufacturer's written instructions.

1. Anchor units tightly and securely in place.
2. Cut sheets to meet existing supports.

C. Fasten supports and trim using #6 trim-head screws anchored into stud or other solid substrate at 16-inch centers.
   1. Where screws do not hit studs, fasten with adhesive in accordance with manufacturer's written recommendations.
   2. Pre-drill holes through members and fasten screw flush with flange on aluminum profile.
   3. Where necessary countersink for screw head to seat flush with flange.

D. Avoid contamination of the panel faces with adhesives, solvents, or cleaners during installation.
   1. Clean up spills immediately.

3.05 FIELD QUALITY CONTROL

A. Field Inspection: Coordinate field inspection in accordance with Section 01 45 00 Quality Control.

3.06 CLEANING

A. Perform daily progress cleaning.
   1. Leave work area clean at end of each day.
B. Upon completion, remove surplus materials, rubbish, tools, and equipment.
C. Collect recyclable waste and dispose of in accordance with manufacturer's written recommendations and at appropriate recycling facilities.

3.07 PROTECTION

A. Protect installed framed decorative panel system from damage during construction.
B. Repair or replace adjacent materials damaged by installation of framed decorative panel system.

END OF SECTION 09 77 16

SECTION 09 91 23 INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.
B. Field application of paints, stains, and varnishes.
C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
   1. Prime surfaces to receive wall coverings.
   2. Mechanical and Electrical:
      a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, and hangers, brackets, collars and supports, unless otherwise indicated.
      b. Paint interior surfaces of air ducts that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
      c. Paint dampers exposed behind louvers and, grilles, to match face panels.
D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Glass.
   6. Acoustical materials, unless specifically indicated.
   7. Concealed pipes, ducts, and conduits.

1.02 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this section.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2016.
C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2015.
D. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.
E. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition, www.paintinfo.com.
F. SCAQMD 1113 - South Coast Air Quality Management District Rule No.1113; current edition.
G. SSPC-SP 1 - Solvent Cleaning; 2015.
H. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.04 SUBMITTALS

A. See Section 01 33 00 Submittal Procedures, for submittal procedures.
B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").

2. MPI product number (e.g. MPI #47).
3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

C. Samples: Submit three (3) paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
1. Where sheen is specified, submit samples in only that sheen.
2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens definitely not required.

D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
2. Label each container with color, type, and room locations in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum five (5) years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum ten (10) years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.

D. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior, unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface during painting.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
1. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.

B. Paints:
1. Acceptable Manufacturers:.

a. Benjamin Moore & Co: www.benjaminmoore.com.
b. Cloverdale Paint, Brand Products of Rodda Paint Company: www.cloverdalepaint.com.
c. PPG Paints: www.ppgpaints.com.
d. Pratt & Lambert Paints: www.prattandlambert.com.
e. Sherwin-Williams Company: www.sherwin-williams.com.
f. Approved Equal. See section 00 91 16 for information on submitting approved equals

C. Transparent Finishes:
1. Acceptable Manufacturers:
a. Same as Paints.
D. Stains:
1. Basis of Design.
E. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. Supply each paint material in quantity required to complete entire project's work from a single production run.
4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
B. Volatile Organic Compound (VOC) Content:
1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
a. SCAQMD 1113 Rule.
b. Architectural coatings VOC limits of State in which the project is located.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
C. Flammability: Comply with applicable code for surface burning characteristics.
D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
E. Colors: As indicated on drawings.
1. Allow for minimum of three (3) colors for each system, unless otherwise indicated, without additional cost to Owner.
2. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, and aluminum.
1. Two (2) top coats and one (1) coat primer.
2. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #144 .
3. Top Coat Sheen: as indicated in finish schedule
4. Primer: As recommended by top coat manufacturer for specific substrate.
B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
1. Medium duty applications include door frames and relight frames.
2. Two (2) top coats and one (1) coat primer.

a. Top coat: MPI #147.

C. Paint I-TR -W - Transparent Finish on Wood.
1. 1 top coat over sanding sealer over stain.
2. Stain: Transparent or Semi-Transparent Stain for Wood; MPI #90.
a. Products: Basis of Design:
1) Sher-wood Water reducible Wiping stain.
i. Product and color to match existing wood finishes.
2) See section 00 91 16 for information on submitting approved equals

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Interior Institutional Low Odor/VOC Primer Sealer; MPI #149.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
B. Patching Material: Latex filler.
C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.
B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
E. Test shop-applied primer for compatibility with subsequent cover materials.
F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Gypsum Wallboard: 12 percent.
2. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or repair existing paints or finishes that exhibit surface defects.
D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
E. Seal surfaces that might cause bleed through or staining of topcoat.
F. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
G. Galvanized Surfaces:
H. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

I. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
J. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
E. Sand wood and metal surfaces lightly between coats to achieve required finish.
F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
G. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.
B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION 09 91 23

SECTION 26 00 10 GENERAL ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26, 27 & 28 sections apply to all the electrical work.

B. Coordinate electrical work with related work shown and specified elsewhere.

C. Work Included: The Contractor shall perform all the Work required (including the furnishing of all supervision, labor, services, tools, materials and equipment and the performance of all operations and incidentals necessary) for a complete, safe and reliable electrical installation, adjusted, tested and ready for operation. The electrical work is generally described asfollows:

1. Coordination and scheduling.
2. Demolition.
3. Grounding.
4. Lighting fixtures.
5. Lighting controls and devices.
6. Branch circuit wiring system for lighting, outlets, equipment, etc.
7. Modification & expansion of the existing fire detection & alarm system.
8. Modification & expansion of the existing communications system.
9. Supports.
10. Pull strings and ropes.
11. Trenching, backfilling and patching for underground electrical work.
12. Cutting and patching, core drilling, etc.
13. Coordination with owner to gain access around existing equipment.
14. Moisture, fire and dust stopping and sealing.
15. Temporary construction power & lighting.
16. Testing and completing.
17. Final cleaning.
18. Obtaining and paying for all required licenses, permits, inspections and fees.

1.03 EXISTING CONDITIONS

A. Before submitting bid, examine existing site (and building or equipment) conditions to determine effect on execution of the electrical work and include costs in bid.

B. Existing circuits indicated on the plan are based on what was shown on the original building construction drawings and may not be exactly how the actual construction was done. The contractor shall expect that some amount of circuit tracing to determine how the actual circuits are installed will be required.

C. Underground utilities (electrical, water, sewer, cable television, etc.) are known to exist in the area of construction. The location of existing utilities shown on the drawings is approximate only and is not guaranteed to be an indication of all utilities in the area. The contractor is responsible for contacting the Owner and all utility companies and for field location of all utilities prior to construction. The one-call number for underground utility location services is 1-800-424-5555. The Contractor shall promptly notify the Engineer of any conflicts between the contract documents and field location of existing utilities. The Contractor is responsible for maintaining the integrity of all existing utilities during construction.

D. Damaged electrical and telecommunications (telephone, computer/data, television, fiber, copper, etc.) cables shall be replaced in their entirety. Splicing will not be allowed.

E. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.

F. Restore site soils and plantings in trenching and backfilling areas and extend site restoration into adjoining areas to remain in a manner that eliminates evidence of trenching and backfilling.

1.04 SPECIAL AREAS

A. Ceiling spaces throughout the entire facility are an air handling plenum. All cables, devices, connections, etc. shall be plenum rated where installed above the ceiling.

B. Telecommunications rooms shall be treated as clean room type environments. Food, drink, dirt, dust, metal shavings and the like shall not be permitted in telecommunications rooms.

1.05 PERMITS

A. The Contractor shall arrange for inspections and pay for all required licenses, permits, inspections, plan review fees and any other fees.

1.06 DEFINITIONS

A. The term "Contractor" used throughout Division 26 and all its sections of these specifications and on the electrical drawings shall be understood to mean the Electrical Contractor. All other work shall be called out by name.
B. “Approved” means approved by the Architect. “For approval” means for the Architect’s approval.
C. “Furnish” means to supply and deliver to the Project, ready for installation and in operable condition.
D. “Install” means to incorporate in the work in final position, complete, anchored, connected, and in operable condition.
E. “Provide” means furnish and install.
F. "Remove" means to remove the existing item indicated and all associated conduit, boxes, cables, etc. to their point of origin and/or destination; except, concealed conduits and flush boxes may be abandoned in place and/or re-used in the new installation. Cables shall be removed and/or replaced.
G. "Replace" means to remove the existing and add in lieu the new as indicated.
H. “As directed” means as directed by the Architect.
I. “Concealed” means hidden from sight in trenches, walls, chases, ceilings, etc.
J. “Exposed” means within sight; that is, not concealed as defined above, and installed on the surface of walls, ceilings, etc.
K. “Residential” areas mean within the apartment units. “Non-residential” areas mean all others.
L. “C.O.” means conduit only; that is, without cable (except, provide pull string or rope).
M. “F.O.I.C.” means Furnished by Others (e.g. general contractor, other subcontractors, equipment suppliers, Owner, systems contractors working directly with the Owner, etc.), Installed by Contractor.
N. “N.I.C.” means Not in Contract.
O. Definitions of all other terms, etc. are in accordance with AIA, ANSI, IEEE, IES, NEMA, etc. standard definitions.

1.07 DRAWINGS & SPECIFICATIONS

A. The electrical plan drawings are general in form and do not attempt to show complete details or list every item of the electrical systems, the building construction or the various equipment (new or existing); however, the routing of raceways and circuits, and the locations of equipment, devices, fixtures, etc. represent the desired finished arrangement; except, as governed by structural or mechanical conditions or obstructions.

B. Existing circuits indicated on the plan are based on what was shown on the original building construction drawings and may not be exactly how the actual construction was done. The contractor shall expect that an extensive amount of circuit tracing to determine how the actual circuits are installed will be required.

C. Specifications are, in some cases, written in an abbreviated form. Words such as shall, shall be, the Contractor shall, and similar mandatory phrases are supplied by inference.

D. Investigate the structural and finish conditions affecting the work. Refer to the architectural, structural and mechanical drawings, supplier shop drawings and submittals, etc. for additional details, equipment ratings, dimensions, location and swing of doors, location and size of partitions, cabinets, etc. and similar features. Verify all dimensions, equipment ratings, etc. with the actual before installation. Arrange the work accordingly.

E. The intent of the drawings and specifications is to include all items necessary for the proper execution and completion of the Work; however, any item or detail not specifically mentioned in the specifications or shown on the drawings, but which is necessary to produce the intended results shall be included.

F. The Contractor shall bring to the Engineer's attention any discrepancies, inconsistencies, conflicts, errors, or omissions within the Contract Documents, between the ContractDocuments and field conditions, and any design and layout changes required due to specific equipment selection, etc. prior to equipment and material purchasing and installation. If Contractor purchases any equipment or materials and performs any construction activity, and it knows or reasonably should have known that the documents contain a discrepancy, inconsistency, conflict, error or omissions, corrective work shall be at the Contractor's expense.

G. In the event that there are discrepancies between requirements shown on different sheets of the drawings or between the drawings and the specifications, the more restrictive of the requirements shall apply.

H. Verify all equipment and device locations with the Owner prior to rough-in.

I. Verify exposed raceway routing with the Owner prior to rough-in.

1.08 SUBMITTALS

A. Submittals from the electrical contractor and each sub-contractor shall include a cover sheet indicating the company name, project manager name, and contact information for the contractor.

B. Forward all submittals to the Engineer, together in a complete package, at one time, in bound folders or three-ring binders with cover page, index and tabs for each section. When specific approval is given, submittals may be provided in electronic format as a single .pdf file. Submittals for individual products or incomplete submittals are not acceptable and will be returned without review.

C. Submittals shall be grouped by specification section and shall be arranged in the same order in which they are found in the specifications to facilitate the review process.

D. Each tabbed section shall be provided with a front page with space for review comments.

E. When specific approval is given, submittals may be sent as separate submittal packages, complete and comprehensive for each specification section.

F. Re-submittals, when requested, shall be provided as complete and comprehensive for each specification section. Re-submittals for individual products or incomplete re-submittals are not acceptable and will be returned without review.

G. Provide submittals for the equipment, boxes, devices, fixtures, special raceways, systems and their

components, etc. as directed in the various sections of the specifications.

H. Submit M.S.D.S. (Manufacturer's Safety Data Sheets) for all chemicals or hazardous materials. All chemicals and hazardous materials to meet NIOSH Permissible Exposure Levels (P.E.L.) and OSHA Time Weighted Average (T.W.A.) requirements before commencing work.

I. If requested by the Owner, provide samples of materials for evaluation.

J. Submittals shall provide sufficient detail so compliance with the drawings and specifications can be ascertained. Clearly identify each item by manufacturer, brand, trade name, number, size, rating, or whatever other data is necessary to properly identify and review materials and equipment. Catalog pages containing more than one product shall be marked with arrows to indicate the proposed product.

K. Obtain approval before purchasing any products. Items not in accordance with the drawings and specifications will be rejected.

L. The Contractor shall establish quantities, check drawings and data, verify space requirements, dimensions, and possible interferences prior to submittal. Submittals which indicate quantities will not be reviewed by the Engineer for accuracy of quantity.

M. The Engineer will review each submittal, mark to indicate action taken, and return. Compliance with specified characteristics is the Contractor's responsibility.

N. Approval of submittals does not release the Contractor from a proper installation, compliance with the drawings, specifications, codes, standards, etc. or coordination of the work.

O. Allow two weeks turnaround time for each submittal from the time of receipt at the engineer’s office, except the engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until the related submittals are received.

1.09 SUBSTITUTE PRODUCTS APPROVAL

A. Refer also to Division 01.

B. During Bidding:

1. Substitutions for equipment and materials other than that specified will be considered if equal (or better and/or higher) in quality, ratings and function; and similar in type, style, size and appearance.

2. Submit written requests to Owner, Architect and Engineer.

   a. If received no later than 7 work days prior to Bid opening, requests will be considered, but not thereafter.

   b. Bidders will be informed by Addendum of any approved items.

   c. No responses will be provided for rejected items.

3. Requests shall be accompanied by complete specifications, samples, record or performance, certified tests by impartial, recognized laboratories, and other such information as required to clearly represent the proposed substitution.

4. Lighting fixture substitution requests shall include photometric data.

5. Final decisions as to quality and suitability of proposed substitutions rest solely with the Owner, Architect and Engineer, and will be based on proof submitted.

6. The cost of changes required in order to incorporate the proposed substitution, such as revisions to controls, raceways, wiring, openings, appurtenances, etc., shall be included in the bid. Any cost reduction resulting from substitutions shall benefit the Owner through a reduced bid.

7. When Owner, Architect and Engineer approve a proposed substitution, it is with the understanding that Bidder certifies that substitute articles or materials are equal to or better than those specified and that no exception is taken with any of the performance objectives, service or warranty requirements or features herein specified.

C. After Bidding:

1. Substitute products requests will not be considered.

2. Product substitutions are allowed solely under the conditions stated in Division 1 Section “Product Requirements.”

1.10 RECORD DOCUMENTS

A. Submit record documents at completion of the project in accordance with the specific submittal requirements listed elsewhere in these documents.

B. Provide “as-built” drawings in both full size reproducible form and in software form as AutoCAD .dwg type files.

C. All record documents in software form shall be provided on a single CD-ROM. Include the necessary program(s) to read test results. Separate submittals for the various disciplines will not be accepted.

1.11 "AS BUILT" DRAWINGS

A. The Contractor shall continuously maintain a marked job set of as-built drawings as the work progresses, to indicate deviations from the original design, including change orders. Maintain records of all concealed wiring and of actual equipment, device, etc. locations. Provide dimensions from accepted reference lines as needed. The as-built drawings shall be kept on-site and available for inspection by the Owner.

B. Include any detailed equipment, raceway, wiring, etc. diagrams and layouts prepared by Contractor or his subcontractors, suppliers, etc.

C. At substantial completion, Contractor shall modify one complete set of reproducible copies, with all "as built" information and submit these drawings to the Owner for approval. Each sheet shall be marked "CORRECTED TO AS BUILT"; or, if there are no changes, drawings shall be marked "NO CHANGES, INSTALLATION PER PLAN".

D. After approval, Contractor shall transfer all "as built" information from the marked job set and other information as appropriate to AutoCAD .dwg type files. (Consultant/Engineer will provide construction drawings AutoCAD files to contractor.) Utilize the layering scheme, font types, line types, title block, etc. provided in the AutoCAD drawing files. All drawings shall be noted as “As- Built” with a stamp and date. After adding the “as-built” information, return the AutoCAD files to the Consultant/Engineer for inclusion into the final project record set.

E. “As-built” drawings for all portions of the work shall be combined into a single set matching the contract documents. Separate submittals for the various disciplines will not be accepted.

1.12 OPERATION AND MAINTENANCE MANUALS

A. Refer to Division 01, Section 01 78 23 Operation and Maintenance Data.

B. Following installation of the electrical systems, but prior to acceptance of the work, Contractor shall submit to Architect one loose-leaf volume with information systematically segregated and indexed for easy reference to be reviewed by the Owner, Architect and Engineer. This submittal copy will be returned to the Contractor, and the material can be used in preparation of final volumes. After approval of preliminary copy, but prior to project completion, submit 3 finished copies.

C. Format shall be 8 1/2" x 11" size with neat, clean copies, drawings (accordion folded), etc. Manuals shall have a typewritten index, and divider sheets with identification tabs between categories. Manuals shall be in hard cover 3 ring binders with titles permanently embossed on the cover face and the spine. The front of each volume shall be imprinted with the project name, title (e.g. "Electrical Equipment and Devices Operating Instructions and Maintenance Manual"), Owner, Architect, Electrical Engineer and Contractor.

D. O&M Manuals may be submitted electronically in pdf format, if approval is given by the architect. Manuals shall be compiled into a single .pdf file for the entire project, or a single .pdf file for each specification Division.

E. Manuals shall include:

1. Record documents (see above); except, full size reproducible bond paper copy of drawings to be provided separately.
2. Submittals, updated to "as built" conditions.
3. Test results; except, telecommunications equipment, cables, etc. test results shall be in a separate binder.
4. Description of systems configuration and operation including component identification and interrelations, including diagrams and supplementary drawings where necessary.
5. Installation, operation, maintenance and programming manuals covering the installed systems, equipment and materials.
6. Maintenance instructions (frequency of service, type of service, etc.).
7. Parts lists for all equipment; including recording information, recommended spares and anticipated useful life.
8. Supplier's names, addresses, telephone and reference order numbers for all equipment and materials.
9. Warranties and Bonds.
10. Copies of final inspection certificates from the authorities having jurisdiction.

F. Omit non-applicable data.

1.13 WARRANTY

A. The complete installation shall be guaranteed for a period of one (1) year after date of project completion. For warranty purposes, the date of project completion shall be considered the date of final acceptance of the installation by the Owner certified in writing, and after Owner has received all project close-out requirements. All corrective work, if needed and requested by the Owner, shall be provided without cost to the Owner during the guarantee period.

B. All corrective work performed by the Contractor in remedying defective work during the guarantee period following the Owner's acceptance of the project shall be subject to the same guarantee requirements of the original work for a period as specified from the date of completion of the corrective work.

C. Corrective work shall include on-site service by the Contractor, subcontractor or supplier (e.g. fire alarm and telecommunications systems), and/or nearest technical service representative of the equipment manufacturer. Service shall be provided within 24 hours from the time of request for warranty service by the Owner.

1.14 TRAINING/INSTRUCTION AND ASSISTANCE

A. After the installation is complete and operating, and prior to acceptance of the work, conduct a minimum of a one (1) hour training/instruction period at the site for each type of system to point out locations of service and maintenance and instruct the Owner's in the operation of all systems and equipment.

B. The person(s) who conduct these instructions and demonstrations shall be a qualified representative(s) of the manufacturer with substantial training and operating experience on this equipment and project, and shall be versed in the operating theory as well as practical operation and maintenance work. Instructor(s) shall have the necessary educational and interpersonal skills, as well as proven ability to effectively perform the training. Their qualifications shall be submitted to the Owner before conducting the instruction period.

C. Each period shall include preliminary discussion and presentation of information using the actual maintenance manuals required for this project. Contractor shall notify Owner and Engineer at least 48 hours in advance of readiness to conduct the instruction period. The actual time and date of instruction period shall be acceptable to the Owner and Engineer.

D. All training material shall be furnished and supplied by the Contractor.

1.15 QUALITY ASSURANCE

A. The Contractor and Contractor's personnel shall be experienced, thoroughly trained and completely familiar with the systems, equipment, devices, fixtures, materials, etc. and the required methods of installation.

B. The Contractor shall provide, upon request, after bid opening and prior to notice to proceed, a company resume including a list of project personnel with years of experience and qualifications/certifications, a list of similar projects completed within the past 5 years with contact information for the Owners and Engineers for each project and any other information which may be pertinent to the project. If requested, the Contractor shall provide a similar resume for sub- contractors.

C. The Contractor shall provide proof, upon request, that all personnel are licensed according to Washington State RCW19.28.161.

D. All materials, equipment and workmanship shall be properly inspected by the Contractor and shall at all times be subject to inspection by the Owner, Architect and Engineer. Contractor shall provide all samples, data and documents necessary for such inspection. Owner, Architect and Engineer shall be afforded full and free access at the jobsite and the shops and places of business of the Contractor for such inspection and to determine the status of the work. If Contractor covers all or any part of the work prior to any inspection or test specifically requested by Owner, Architect and/or Engineer, the cost of any necessary uncovering and replacing shall be borne by the Contractor.

E. Neither the failure to make inspections or tests, nor to discover defective workmanship, materials or equipment, shall prejudice the rights of the Owner, Architect or Engineer thereafter to reject the work and/or require its correction.

F. The completed installation shall comply with the more stringent of the requirements of the drawings and specifications, the authorities having jurisdiction, and all laws, ordinances, rules, regulations and requirements in effect at the site, including current editions of the following:

1. NEC - National Electrical Code.
2. National Electrical Safety Code.
3. OSHA - Occupational Safety and Health Act (and its Washington State equivalent).
4. ADA - Americans with Disabilities Act (and its Washington State equivalent).
5. International Fire Code (and its Washington State equivalent).

6. International Building Code (and its Washington State equivalent).
7. Washington State Rules and Regulations for Installing Electrical Wires and Equipment (WAC 296-46B).
8. Washington State Safety Standards for Electrical Workers (WAC 296-45).
9. Washington State Non-Residential Energy Code (NREC).
10. Washington State “Excavation, Trenching and Shoring” law.
11. City of Bellingham Development Guidelines and Improvement Standards.
12. City of Bellingham Fire Protection Development Standards.

G. The following standards establish the minimum requirements for the equipment and installation, unless exceeded by the requirements of the drawings or specifications:

1. ANSI - American National Standards Institute.
2. BICSI – Building Industry Consulting Service International
3. ICEA - Insulated Cable Engineers Association.
4. IEEE - Institute of Electrical and Electronics Engineers.
5. NEMA - National Electrical Manufacturers Association.
6. NEIS – National Electrical Installation Standards
7. NFPA - National Fire Protection Association.
8. NECA – National Electrical Contractors Association
9. EIA - Electronic Industries Association.
10. TIA - Telecommunications Industry Association.

H. In addition, telephone/voice & computer/data pathways & wiring shall be in accordance with the following:

1. ANSI/NECA/BICSI 568-2020 – Installing Commercial Building Telecommunications Cabling.
2. ANSI/TIA/EIA 568.0-E – Generic Customer-Owned Telecommunications Networks.
3. ANSI/TIA/EIA 568.1-E – Commercial Building Telecommunications Cabling Standard.
4. ANSI/TIA/EIA 568.2-D – Balanced Twisted Pair Telecommunications Cabling System Standard.
5. ANSI/TIA/EIA 569-E – Telecommunication Pathways and Spaces.
6. ANSI/TIA/EIA 606-C – Administration Standard for Commercial Telecommunications Infrastructure.
7. ANSI/TIA/EIA 607-D – Commercial Building Grounding and Bonding Requirements for Telecommunications.

I. Nothing in the drawings or specifications shall be construed to direct or permit work not conforming to applicable laws, ordinances, rules, regulations, requirements or standards. Discrepancies or conflicts shall be brought to the attention of the Owner and Engineer promptly for resolution.

J. The Owner and Engineer shall be advised prior to any inspection being requested. The Owner and Engineer shall be provided the opportunity to inspect the installation prior to wallboard, ceiling or finish installation. Any materials, equipment or workmanship that is not (in the opinion of the Owner, Engineer or Inspector) as it should be, shall be taken out and replaced without cost to the Owner.

PART 2 PRODUCTS

2.01 GENERAL

A. Coordinate the features of materials and equipment so they form an integrated system.

B. Contractor shall make certain that all materials selected by him, his subcontractors or by his suppliers, conform exactly to requirements of the drawings and specifications. Transmittal of such specifications and drawing information to subcontractors, person manufacturing and/or supplying materials to the project, and rigid adherence thereto, is the Contractor's responsibility.

C. All equipment, devices, luminaires, materials, etc. shall be UL (Underwriter's Laboratories, Inc.) listed, labeled and approved for the service intended where UL standards have been established. If no UL label is available, the label of a testing agency or conformance to national standards recognized and approved by the electrical inspector having jurisdiction is required.

D. All equipment, devices, fixtures, materials, etc. shall be new and installed only if in first class condition.

1. Unless specifically designated as existing.

2. Existing raceways, boxes, etc. may be re-used if in "like new condition" and appropriate for the new installation.

E. All equipment, devices, etc. and their components shall be designed for continuous duty without degradation of function or performance.

F. In the event that any item is not available exactly as specified, the Contractor shall so notify the Owner and Engineer in writing prior to bidding as early as possible to allow ample time for an alternate item to be selected without delay to the project.

2.02 EQUIPMENT MANUFACTURERS

A. Unless specifically noted otherwise, all references to manufacturer’s or supplier's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality.

B. All equipment, devices, materials, etc. shall be of a type manufactured by reputable recognized vendors. Each type or groups of items, system components, etc. having the same or similar function shall be the same manufacturer, make and quality throughout the facility.

C. Approval of a manufacturer's name and/or type does not release the Contractor of the responsibility for providing materials which comply in all details with requirements in the contract documents.

2.03 SPARE CAPACITY

A. Unless sizes and/or quantities are specifically indicated, provide at least 20% spare wiring capacity in all cabinets, panels, cable trays and raceways.

2.04 ENCLOSURES

A. Equipment, devices, luminaires, boxes, etc. located indoors shall have general purpose (NEMA 1) enclosures, except:

1. Equipment, devices, boxes, etc. located within the Fuel and Wash Building Wash areas shall be suitable for a wet location.

B. Equipment, devices, luminaires, boxes, etc. located outdoors shall be provided with weatherproof (NEMA 3R) enclosures. Surface finish shall be a rust inhibiting primer followed by an epoxy or polyurethane polyester top coat.

C. Provide gaskets, seals, etc. as required to prevent the entrance of moisture, debris, insects, etc.

D. Enclosures and boxes shall be fabricated from code gauge, or heavier, galvanized steel. Surface preparation and finish shall be manufacturer's standard unless noted otherwise.

E. Include all necessary mounting, etc. accessories.

2.05 SUPPORTS AND CHANNEL

A. Channel, framing members, etc. shall be 12-gauge steel, galvanized, $1\frac{5}{8}$ inch channel width with all necessary accessories.

B. Beam clamps shall be steel, minimum 500 lb. load rated.

C. Threaded rod shall be steel, minimum $\frac{3}{8}$ inch diameter.

2.06 ANCHORS AND FASTENERS

A. Anchors and fasteners used shall be of a type designed for use in the base material to which the item is to be attached. Attach to wood with wood or lag screws, to metal with machine screws or bolts and to concrete with carbon steel wedge or sleeve type expansion anchors or self-drilling metal anchors and machine screws or bolts.

B. Pad and floor mounted equipment shall be secured with suitable hot dipped galvanized steel anchor bolts, washers, hex nuts, etc.

C. Powder actuated fasteners, plastic expansion type anchors, nails and toggle bolts are not permitted.

D. Anchors shall be non-corrosive or have suitable corrosion resistant coatings or treatment.

E. Bolts, nuts, screws and other threaded devices shall have standard threads and heads, unless required for tamper-proof installation.

2.07 IDENTIFICATION

A. Provide nameplates for all equipment (e.g. switchboards, panels, disconnecting means, control panels, control stations, etc.) and other devices used for the control of circuits, equipment, etc. Nameplates shall adequately describe the function or operation of the identified equipment, devices, etc. and include the panel and circuit number(s) from which it is fed. Nameplate designations shall be consistent with the project documents. Submit proposed inscriptions for approval.

B. Definite purpose devices shall be labeled with a description of the device's function, rating and include the panel and circuit number(s) from which it is fed.

C. All equipment and outlets shall be labeled with the panel and circuit number(s) from which it is fed.

D. Spare, C.O., etc. conduits shall be labeled with their destination.

E. Nameplates shall be laminated plastic, with lettering etched through the outer covering. Character size as appropriate for the application, approved by Engineer; ¼ inch except minimum $\frac{1}{8}$ inch. Nameplates shall be securely fastened with suitable adhesive or self tapping screws. Character and background colors shall conform to the following system color code:

Background.	Char.	System
Black	White	Power & Lighting
Orange	White	Emergency Systems

F. Identification tags shall be plastic, flexible type with a label. Identification tags shall be securely fastened with cable ties. Tags shall be mounted so as to be clearly visible.

G. Labels shall be heavy duty adhesive type, clear background with black letters on light colored devices and clear background with white letters on dark colored devices; except, labels on devices connected to the

emergency power system shall have red letters. Lettering shall be appropriately sized for the application, ¼ inch. Labels on ceiling mounted devices shall be large enough to read from the floor. Labels shall be as manufactured by Kroy, Brothers, or approved equal. Self-adhesive circuit numbers, masking tape, plastic punch type "Dymo" labels, etc. are not acceptable.

PART 3 EXECUTION

3.01 CONSTRUCTION/WIRING METHODS

A. Wiring methods shall be as follows:

1. Branch circuits - PVC conduit below grade (with GRS conduit risers and RTRC fiberglass elbows for conduits 2” and larger) and EMT above grade.

2. Telecommunications - PVC conduit below grade (with GRS conduit risers and RTRC fiberglass elbows) and EMT above grade; except, suitable cables run "open" in accessible locations above t-bar ceilings or within attic space.

3. Fire alarm - PVC conduit below grade (with GRS conduit risers and elbows) and EMT above grade.

4. Class 2 control, etc. - PVC conduit below grade (with GRS conduit risers and elbows) and EMT above grade; except, suitable cables run "open" in accessible locations above t-bar ceilings or within attic space.

B. All wire and cable shall be enclosed within the raceway system; except, "open cable wiring" will be permitted for Class 2 signal and control, telecommunications, etc. cables approved for the purpose when run concealed in an accessible location above the ceilings or in the attic.

C. Conduit and cable shall be run concealed in the walls (including within CMU and similar construction), above the ceiling, or below the floor with all devices, etc. flush mounted; except, in the Mechanical and Electrical Rooms, conduit drops to panels, equipment, etc. may be run exposed.

D. Raceways and cables shall be run concealed in the walls (including within CMU and similar construction), soffits (new and existing), above the ceiling or below the floor unless indicated otherwise; except, exposed within utility rooms and other similar type spaces. Raceways may be run exposed within public spaces, classrooms, offices, and the like only where indicated and with prior approval of the Owner and Architect. Exposed raceways shall be run as neatly and unobtrusively as possible, to the approval of the Owner, Architect and Engineer.

E. Equipment shall be surface mounted unless noted otherwise.

F. Devices, etc. shall be flush mounted unless noted otherwise.

3.02 CONTRACTOR CONTROL AND SUPERVISION

A. 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. Performance of the work shall be directly supervised by a competent superintendent (and/or foreman) who is satisfactory to Owner and has authority to act for Contractor. The superintendent (and/or foreman) shall constantly supervise the work and check all materials prior to installation for conformance with the Contract Documents. The superintendent (and/or foreman) shall not be changed without the prior written consent of

Owner.

C. Contractor shall enforce strict discipline and good order among Contractor's employees and other persons performing the Work. Contractor shall not permit employment of unfit persons or 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.

D. Inappropriate activity or comments by Contractor, Contractor's employees and other persons performing the work will result in immediate removal from the site.

3.03 GENERAL

A. The installation shall be done in a neat and workmanlike manner and shall be suitable for the location. Conduit stub-ups, sleeves and ends left open for future connection, unused hubs in fittings and unused holes in boxes shall be plugged or capped to prevent the entrance of moisture and debris.

B. For the actual fabrication, installation and testing use only persons thoroughly trained, experienced and completely familiar with the items required and with the manufacturers' recommended methods of installation. In acceptance or rejection of the work, no allowance will be made for lack of skill or experience.

C. Circuits shall be run from equipment to equipment, outlet to outlet, luminaire to luminaire, device to device, etc. and all homeruns shall be run as shown on the drawings unless permission is obtained from the Engineer to alter the arrangement.

D. Changes in location (e.g. equipment and devices up to 10 feet, trench and raceway routing, cable tray locations, etc.) made before installation and deviations to avoid interferences shall be made without increase in Contract Sum.

E. The Contractor shall conduct operations in a manner to avoid the risk of bodily harm to persons or damage to any property. Construction equipment and tools shall be in good operating condition and be designed to perform the work required. The Contractor shall continuously inspect all work to discover any unsafe conditions and be solely responsible for their correction.

F. Use all means necessary to protect the equipment and materials and the work, materials, etc. of the other trades before, during and after installation. Do all cutting carefully to prevent damage to the work. Correct lifting, jacking and/or moving methods shall be used. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and Engineer without increase in Contract Sum.

G. The Contractor shall provide all cutting, patching, core drilling, etc. as required for the work. Use only journeymen skilled in the necessary cutting or patching operation. Patching shall match adjacent work. Structural members shall not be cut without approval of the Architect. Where penetrations in structural members for conduits, cables, etc. are allowed, the holes shall be no larger than absolutely necessary.

H. Contractor shall x-ray or otherwise determine the exact location of existing structural components, conduits, piping, wiring, ducts and the like prior to making any new penetrations or openings (or expanding existing openings) in any floor, wall or ceiling.

I. The premises shall be kept free from the accumulation of rubbish and debris caused by the work. Dust, fibers, debris, etc. caused by the work shall be cleaned up immediately (prior to the worker leaving the area, room or space) and not tracked to other areas, rooms, spaces, etc. Cleanup shall be with a vacuum cleaner or similar provided with a proper HEPA filter.

J. The Contractor shall provide all backboards, hangers, supports, chases, anchor bolts, inserts, sleeves and other openings in the construction required for the electrical work.

K. The Contractor shall coordinate with the owner and move existing equipment, furniture, bookcases, boxes, miscellaneous (office, storage, maintenance, etc.) objects and materials, and other building furnishings, attached or unattached, as required to perform the work, including returning the items to their original location in their original condition.

L. The Contractor shall remove and re-install suspended ceilings, both T-bar and Z-spline types, as required for installation of new raceways and cables. Damaged ceiling tiles shall be replaced by the contractor.

M. Wall, ceiling and floor penetrations by raceways (both inside and outside the raceway), cables, etc. shall be sealed to maintain the original moisture, dust and fire resistance to the approval of the Architect. Flash and counter-flash all roof penetrations.

3.04 PROTECTION OF PERSONS, FACILITIES & UTILITIES

A. Provide all traffic control, flagging, barricades, barriers, guards, warnings, notifications, etc. at equipment, materials, open excavations, open trenches, etc. and post with warning lights. Barricades on or adjacent to public use and/or vehicular traffic areas such as buildings, roads, parking areas, pathways, etc. shall be chain link construction fence (minimum 6 feet high), locked when Contractor's personnel are not in the immediate vicinity.

B. Provide chain link construction fence (minimum 6 feet high and locked) over all open excavations, open trenches, etc. when Contractor's personnel are not present in the immediate vicinity.

C. Provide devices and methods and proceed with sufficient caution to preclude damaging any facilities, utilities (e.g. power, water, sewer, natural gas, telecommunications, etc.) or similar, above ground or underground, concealed or exposed, known or unknown, located or not located. In the event unidentified utilities are encountered, notify the utility, Owner and Engineer.

D. Unless otherwise provided by the drawings or specifications, do not cut or alter any existing utility or similar without authorization of the Owner and Engineer. The Contractor shall pay all costs, as determined by the Engineer, of remedial work necessitated by unauthorized or accidental cutting, patching, trenching, excavating, backfilling, etc. which damages and/or impairs the performance of existing utilities or similar (e.g. power, water, sewer, natural gas, telecommunications, etc.), above ground or underground, concealed or exposed, known or unknown, located or not located.

E. All such work shall be verified with Owner and Engineer before execution of replacement, re- routing, relocation, repair or termination commences.

F. Notify Regulating Agencies, Locator Service, Utility Companies, Engineer and Owner's Project Manager a minimum of a minimum of fourteen (14) days in advance and re-confirmed a minimum of 48 hours in advance, or as mutually agreed upon with Owner, prior to commencement of any such work. Submit procedures to assure safe and continuous operation of the utilities for approval.

G. Proceed with sufficient caution to preclude damaging any utilities or similar (e.g. power, water, sewer, natural gas, telecommunications, etc.), above ground or underground, concealed or exposed, known or unknown, located or not located. In the event unidentified utilities are encountered, notify the utility, Owner and Engineer.

H. Provide a spotter at all times when excavation occurs by use of a backhoe or other mechanical equipment.

I. Provide adequate means of support and protection during earthwork operations.

J. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of Owner and utility, without increase in Contract Sum.

K. Damaged electrical and telecommunications (telephone, computer/data, television, fiber, copper, etc.) cables shall be replaced in their entirety. Splicing will not be allowed.

3.05 COORDINATION AND SCHEDULING

A. The Contractor shall coordinate the work and cooperate with the Owner, other trades and System Contractors to have the work completed to the best advantage, insure there are no interferences, provide reasonable opportunity for the other trades and Contractors to complete their work and to not delay the work.

B. Work under this project will be undertaken with the facility in full operation.

C. Contractor shall coordinate work to avoid disturbance to building operations and personnel, and to allow access for both persons to and within all portions of the facility and vehicles to the facility. Access to office spaces, conference rooms, etc. will not be allowed when they are occupied. (Note that the offices, classrooms, etc. in areas other than the work area will be occupied and in full operation.) Contractor shall coordinate and schedule with Owner's representative, department heads and the occupants of the individual space a minimum of fourteen (14) days in advance and re-confirmed a minimum of 48 hours in advance, or as mutually agreed upon with Owner, to determine dates and times that access to the Contractor will be allowed. Contractor shall expect that

1. The building can be expected to be occupied from 5:00 a.m. to 11:00 p.m.
2. Public spaces such as corridors, etc. will be accessible during the day only on a limited basis (e.g. without blocking access to occupants of the facility, limiting noise, etc.).
3. Spaces such as storage rooms, utility rooms, etc. will be accessible at all times, provided occupants of the adjoining offices, rooms, public spaces, etc. are not disturbed.

D. Work in private offices, rooms and the like shall only be done with the occupant's approval and at his or her convenience.

E. Contractor shall schedule all equipment, utility, electrical, telecommunications, fire alarm, fire protection, etc. interruptions with the Owner. Interruptions and closures shall not be extended overnight.

F. Contractor shall schedule building closures, complete or partial, with the Owner (e.g. for x- raying).

G. Any and all costs incurred for non-standard hours, double-shifts, overtime, etc. or any other costs associated with completing the project within the completion times required shall be included without increase in contract sum.

3.06 DELIVERY, STORAGE AND HANDLING

A. All equipment and materials shall be stored neatly and out of the way. Conduit, fittings, cable, etc. shall be stored off the ground, protected from the weather in racks or bins or on shelves. Equipment, panelboards, fixtures, devices, etc. shall be stored indoors in a dry, warm area, free of dust and one in which condensation will not occur.

B. Ship equipment in its original package to prevent damage or entrance of foreign matter. Perform all handling and shipping in accordance with manufacturer's recommendations and packing label instructions. Provide protective coverings during construction.

C. Following installation, protect materials and equipment from corrosion, condensation, physical damage, and the effects of moisture. Keep openings in boxes or equipment closed when work is not being done in them during construction.

D. Identify materials and equipment delivered to the site and storage organized to permit checking against approved material lists and submittals.

3.07 TEMPORARY POWER

A. The Contractor shall provide all temporary power services, facilities, equipment, devices, material, etc. required for the construction; including adequate lighting, outlets, balancing, testing, etc. as may be necessary for the proper performance and inspection of the work.

B. Electrical power at 120 volts, 1 phase for operation of lighting, small power construction tools and light-duty equipment may be obtained from the existing buildings, free of utility costs. During power interruptions, and if Contractor's equipment will not operate on the available power, the contractor shall supply all equipment needed, such as transformer(s), generator(s), etc. and pay all costs involved.

C. The temporary power system shall be provided in a neat and safe manner, in compliance with governing codes and good working practice.

D. The temporary power system shall be removed when no longer required.

3.08 DEMOLITION

A. Where existing walls and ceilings are to remain, Contractor shall remove all items indicated to be removed, and all associated equipment, devices, raceways, boxes, cables, etc. back to their point of origin and/or destination; except, concealed conduits & boxes may be abandoned in place and/or existing conduits and boxes may be re-used if in good condition and appropriate for the new installation, at the option of the Contractor.

B. Existing cables shall be removed or replaced. Provide pull strings in existing conduits being abandoned in place. Existing below grade conduits shall be cut off and capped flush with the floor. Existing concealed boxes shall be provided with suitable blank covers and/or wallplates.

C. Label the ends of conduits abandoned in place with origin and destination description, and note locations on the as-built drawings.

D. Where existing equipment, fixtures, devices, etc. are indicated to be replaced, remove and dispose of the existing and provide new in its place.

E. For all items indicated as to be removed or re-wired, Contractor shall remove all associated conduit, boxes, cables, etc. back to their point of origin &/or destination; except, concealed conduits & boxes may be abandoned in place &/or existing conduits & boxes may be re-used if in good condition & appropriate for the new installation, at the option of the Contractor. Existing cables shall be removed or replaced.

F. Existing equipment, fixtures, devices, etc. to remain shall be protected as required during demolition and construction. In the event of damage, immediately make all repairs and/or replacements necessary to the approval of the Owner and Engineer without increase in Contract Sum.

G. Existing equipment, fixtures, devices, etc. to be re-used in the new work shall be removed carefully, and protected as required during demolition and construction. In the event of damage, immediately make all repairs and/or replacements necessary to the approval of the Architect and Engineer without increase in Contract Sum.

H. Items not indicated shall remain "as is"; except, shall be re-connected as required if its circuit is interrupted during the demolition.

I. Holes, openings, etc. where existing raceways, cables, boxes, outlets, etc. are removed and not replaced shall be patched to match adjacent surface.

J. All surplus materials removed during the demolition shall be inspected by the Owner and those items selected shall remain the property of the Owner. All remaining surplus materials shall be removed from the site and disposed of by the Contractor without increase in Contract Sum.

3.09 INTERRUPTIONS

A. Power, fire alarm, telecommunications and other systems interruptions, whether to individual equipment or to the entire system, shall not be done without prior approval and scheduling with the Owner. Power, fire alarm and/or telecommunications interruptions required to facilitate construction work and that affect operation of the existing facility shall not be done during normal working hours. Some working of non-standard or longer than standard hours will be required, without increase in Contract Sum.

B. Power interruptions to panels and/or circuits feeding the existing telecommunications equipment, devices, etc. shall not exceed 1 hour, and then only during the lowest usage hours (typically between 11:00 p.m. and 6:00 a.m.).

C. Telecommunications services shall be maintained to each outlet in the entire facility whenever the space is occupied (e.g. the entire facility during normal operating hours, except the areas being remodeled). Therefore during non-operating hours, new cables shall be provided, new outlets connected and/or existing outlets re-connected from the existing cabling system to the new cabling system, cables terminated at the backboard, testing completed, cross-connects and migration completed, etc. and the systems returned to service before the space is occupied again.

D. In order to minimize the interruptions to the individual systems and equipment, and to keep maximum power available to the facility; the new service and power distribution system shall be completed and energized before the existing service is de-energized and removed.

E. Whenever the "emergency" power system is required to be interrupted, all "emergency" loads shall be temporarily supplied from the "normal" system. Any time the "emergency" power system is inoperative, the Contractor shall have sufficient cable, connectors, etc. at the site to energize the "emergency" loads quickly if there is a utility power interruption at that time. Work on the "emergency" power system shall be done only during periods of good weather to minimize the possibility of any unscheduled utility outages. Also, the utility shall be contacted beforehand to verify there will be no scheduled outages at that time.

F. Change-over of individual items shall be done 1 at a time.

G. As much as possible, items shall be pre-assembled and systems prefabricated to minimize the change-over time.

H. Shutdowns will not be allowed to extend beyond the time Contractors personnel are present.

3.10 LOCATIONS

A. Locations and mounting heights of equipment, devices, etc. shall be consistent, and in accordance with the requirements of NFPA, ADA and the authority having jurisdiction.

B. Devices and associated wallplates shall be located so as to not span different types of building finishes.

C. In general, surface raceways, cable trays, cable racks, etc. shall be mounted as unobtrusively as possible,

tight against whiteboard trim, chair rails, in room corners, against ceilings, against chases, etc. and other breaks in the construction.

D. Prior to rough-in, the Contractor shall mark or otherwise show the location of all equipment and devices, and the proposed routing of raceways. Obtain specific approval for the location of each from the Owner, Architect and Engineer before rough-in.

E. Changes in location (e.g. equipment and devices up to 10 feet, trench and conduit routing, etc.) made before installation and deviations to avoid interferences shall be made without increase in Contract Sum.

3.11 EQUIPMENT, LUMINAIRES AND DEVICES

A. Equipment, luminaires, devices, etc. shall be installed plumb and true, and shall be square with the adjacent walls, ceilings, structural members and other equipment; in a horizontal or vertical position as intended. The location of similar items shall be consistent.

B. Light standards (poles), luminaires, etc. shall be set to stand plumb and true and shall be square with the adjacent buildings, property lines, sidewalks, roadway, etc.

C. Equipment, cabinets, boxes, fixtures, devices, etc. shall be accurately mounted and leveled and be firmly supported either directly or indirectly by a sound and safe structural member of the building in accordance with manufacturer's instructions, or as directed. Supports shall be neatly placed and properly fastened. In addition to the weight of the equipment or material, allowance shall be made for vibration (e.g. motors and fans) and variable and/or shock loading from internal or external forces (e.g. operation of disconnect switches or circuit breakers).

D. The correct lifting, jacking and/or moving gear which will prevent damage shall be used.

E. All bolts, nuts, screws and other fastenings shall be tightened in accordance with manufacturers or listing instructions and all covers replaced on equipment and boxes. All electrical connections, particularly those on bus work in panelboards, etc. shall be checked to ensure tightness and electrical conductivity.

F. Follow manufacturer's installation details wherever available. Provide supports, boxes, mountings, wiring, fittings, etc. as required, standard or special. Wherever any conflict arises between manufacturer's instructions, codes and regulations, and these Contract Documents, follow Owner’s decision.

G. Following installation, protect materials and equipment from corrosion, condensation, physical damage, and the effects of moisture. Keep openings in boxes or equipment closed when work is not being done in them during construction.

H. Provide gaskets, seals, etc. as required to prevent the entrance of moisture, debris, insects, etc. Check for proper fit.

3.12 SUPPORTS

A. Provide all necessary supports, anchors, fasteners, and backing for all raceways, cable trays, cable racks, boxes, enclosures, fixtures and equipment.

B. Hangers and supports shall be made from standard structural shapes and hardware or systems of shapes, fittings and hardware designed for the purpose.

C. Support cable trays with trapeze style hangers/systems, minimum 8 foot on center.

D. Hangers and supports shall be adequately and safely attached to the building structure. Equipment or materials to be supported shall be securely fastened to the supporting means. Use size and number of

attachments as required for a safety factor of at least four. In addition to the weight of the material, consideration shall be given to the weight of the support itself, the weight of materials within, vibration, external operational forces, shock load, etc.

E. Brace all equipment, cable tray, cable racks, etc. as required to meet the requirements of Seismic Design Category D.

F. Attach to wood with wood or lag screws, to metal with machine screws or bolts and to concrete with carbon steel wedge or sleeve type expansion anchors or self-drilling metal anchors and machine screws or bolts.

3.13 CORROSION PROTECTION

A. All material and equipment shall have corrosion protection suitable for the atmosphere in which they are installed.

B. Maintain the integrity of factory provided corrosion protection. Repair damaged corrosion protection and touch-up paint all scratched, marred or damaged factory finish on equipment, devices, luminaires, enclosures, etc.; per manufacturer's instructions where available.

C. Paint field cuts with a suitable cold galvanizing compound.

3.14 APPROVALS

A. Prior to rough-in, the Contractor shall mark or otherwise show the location of all equipment and devices, and the proposed routing of raceways, cables, etc. Obtain specific approval for the location of each from the Owner and Engineer before rough-in.

B. Prior to beginning installation of cables, obtain approval of concealed raceway installation from the Owner and Engineer.

C. Prior to beginning installation of cables, obtain approval of the raceway installation from the Owner and Engineer.

3.15 CLEANING

A. Remove trash, combustible material, and other debris from electrical rooms and areas around equipment.

B. Remove shipping materials, supports, spacers, etc. from equipment, devices, etc.

C. Remove all debris from equipment, devices, etc. including all scraps of wire, metal shavings, plaster, dust, and other foreign material.

D. The top sides and interiors of all equipment and enclosures shall be vacuumed clean.

E. The exterior of all equipment and enclosures shall be wiped down with a clean, dry, lint-free cloth or soft bristled brush.

F. Remove paint splatters and other spots, dirt, and debris.

G. Touch up scratches to match original finish.

H. Remove all traces of soil, dirt, dust, smudges, fingerprints and other foreign matter from visible surfaces of equipment, devices, luminaires, etc. Pay close attention to highly finished surfaces such as glass and polished metals. Wipe lamps clean.

I. Maintain adequate ventilation during cleaning.

J. Follow manufacturer's instructions. Failure to follow manufacturer's recommendations when cleaning equipment can result in damage from the use of improper cleaning methodsor agents.

3.16 VISUAL AND MECHANICAL INSPECTION

A. Verify that all equipment and their components are sized properly for the load and the types, sizes, etc. are in accordance with the contract documents, approved submittals, etc.

B. Visually inspect equipment for physical damage. Repair physical damage, if practical and approved by the manufacturer. Consult Owner, Engineer and manufacturer for recommendations for suitable protective barriers to prevent future damage.

C. Inspect molded and formed equipment and components (e.g. circuit breaker cases, fuses, starters, relays, insulators, supports, etc.) for cracks or other defects.

D. Check all bolts, connections, cable terminations, etc. for tightness using a calibrated torque wrench or screwdriver. Refer to manufacturer's instructions and markings for proper torque values.

E. Visually check the equipment, its components and associated raceways, conductors, etc. for proper grounding and bonding. Ensure that grounding and bonding terminal bars, bus bars, straps, and conductors are properly connected.

F. Verify that cables do not contact live parts and that cables are properly secured to withstand the effects of fault currents.

G. Check equipment anchorage, mounting, clearances, alignment and fit of components.

H. Inspect each fuse holder to determine whether it seems to be adequately supporting the fuse and that the fuse holders are securely attached to the mounting base. Verify fuses are set tightly in the clips provided.

I. Operate equipment and components (e.g. disconnect switches, circuit breakers, etc.) to insure smooth operation.

J. Motor bearings shall be checked for proper lubrication and the shaft turned to ensure it is free to rotate.

K. Compare all circuits (internal and external) with wiring and/or control diagrams to verify they are installed correctly.

L. Confirm correct operation and sequencing of electrical and mechanical interlock systems, if so equipped. Attempt closure on locked-open devices. Attempt to open locked-closed devices.

M. Confirm that equipment nameplates and safety labels are provided.

3.17 TESTING

A. The Contractor shall perform all tests required in the various sections of the specifications and in accordance with manufacturer's recommendations. Record test results and include in operation and maintenance manuals.

B. The Owner and Engineer shall be notified one week prior to any testing so that the testing may be witnessed.

C. All testing shall be performed by personnel that are trained in the specific task to be performed

D. Do not proceed with tests until previously identified deficiencies are corrected.

E. Test equipment in accordance with manufacturer's recommendations. Maintain test results for future comparisons. Include in operation and maintenance manuals.

F. Upon completion, all equipment and systems shall be tested for functional operation, including all intended modes and sequences of operation.

G. Readings of the voltage and amperage shall be taken on each phase at each panelboard and at the end of the longest branch circuit at no load and full load conditions.

H. All systems shall test free from shorts and grounds and shall be without mechanical and electrical defects. If any test indicates a failure, in the opinion of the Engineer; the item shall be replaced or suitably repaired to the approval of the Owner, Architect and Engineer, and the test repeated without additional cost to the Owner.

3.18 ENERGIZING

A. Energize equipment in accordance with manufacturer's recommendations.

B. The Owner, Engineer and other affected personal shall be notified one week prior to energizing so that the energizing may be witnessed.

C. Energize equipment, feeders, circuits, etc. from the source end and working to the load. Close main devices, feeder devices, motor/branch circuit devices, etc. in sequence.

D. Verify all temporary grounding, etc. connections are removed prior to energizing.

E. Verify that all load disconnecting, etc. devices are open, padlocked and tagged prior to energizing.

F. Motors:

1. Motors shall be started uncoupled to verify proper rotation. Reverse if required.
2. With correct rotation, motors shall be run uncoupled for minimum 30 minutes. While running, motors shall be observed for unusual conditions such as vibration, noise, excessive winding or bearing temperature rise, etc.

G. After energization, equipment shall be observed for unusual conditions such as vibration, noise, excessive temperature rise, etc.

3.19 COMMISSIONING

A. Refer to other related sections of the specifications for additional requirements, including Division 1 Specification Sections and applicable provisions of the other Divisions.

B. The work shall be done with a high degree of professionalism and expertise, on schedule.

C. Commissioning is a quality process of documentation, training, adjustment, testing and verification to ensure the completed facility and all its systems operate properly and as intended.

D. Provide commissioning of the lighting control systems in accordance with the requirements of the latest edition of the Washington State Non-Residential Energy Code (NREC).

E. The Contractor shall provide all test equipment, instruments, tools, etc. as required. Test equipment, instruments, tools, etc. shall be fully operational and properly calibrated.

F. All commissioning and testing shall be performed by personnel that are trained and fully qualified in the specific task to be performed.

G. Qualified representatives of the manufacturers shall assist in tests if deemed necessary by the Owner or Engineer.

3.20 CONTRACT CLOSE-OUT

A. As a requirement for substantial completion of the Work, the Contractor shall thoroughly check the installation. Checking shall consist of visual inspection and manual adjustment to confirm correct installation and arrangement and to assure the intended function, response and operability. Checking shall include, as a minimum, the following:

1. Check that equipment, devices, etc. are of the correct type and rating.
2. Check that all raceways, fittings, devices, boxes, enclosures, etc. are secure and that all conduit connections are tight.
3. Check that all electrical connections are correctly tightened.
4. Check that equipment, devices, panelboard circuit directories, etc. are correctly labeled.
5. Check that equipment, fixtures, devices, etc. are clean with all unnecessary labels removed.

B. As a requirement for substantial completion of the Work, the Contractor shall:

1. Obtain final inspections from the authorities having jurisdiction.
2. Perform final cleaning.
3. Submit approved "As Built" Drawings, Record Documents, Test Records, Manuals, etc.
4. Submit written warranty statements for equipment, materials and installation.
5. Conduct system tests.

C. After the requirements for substantial completion have been met, the contractor shall notify the Engineer in writing that the Work is substantially complete. The Engineer will then perform a final inspection of the installation and issue a “punchlist” for final completion.

D. The Contractor shall complete the work on the punchlist or provide written explanation for not completing the work. The punchlist shall be signed by the contractor and returned to the Engineer when complete.

E. The Engineer will re-inspect the Work to verify that all the items have been completed.

F. The above process shall be completed a single time for the project. If additional punchlist and inspection cycles are required to be completed due to the contractors failure to complete items on the punchlist, the contractor will be backcharged for the Engineer’s additional services on time and material basis through the construction contract.

G. Subsequent to final completion and testing operations, instruct Owner's authorized representatives as required in operation, adjustment and maintenance of equipment and systems.

End of Section 26 00 10

SECTION 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26, 27 and 28 Sections apply to all the electrical work.

B. Coordinate electrical work with related work shown and specified elsewhere.

C. Provide all materials necessary for the proper execution and completion of the work as herein specified or called for on the drawings. Required items not specifically mentioned in the specifications or indicated on the drawings shall be provided as necessary to produce the intended results.

D. In the event that any item is not available exactly as specified, the Contractor shall so notify the Engineer in writing as early as possible to allow ample time for an alternate item to be selected without delay to the project.

PART 2 PRODUCTS

2.02 RACEWAYS

A. Raceways, where required, shall be of the types listed below, unless noted otherwise:

1. Electrical Metallic Tubing (EMT) – above grade, except as noted below.
2. Electrical Metallic Tubing (EMT) – Concealed above grade and exposed in Utility Rooms and other Non-Public Areas not readily visible to building occupants, except as noted below.
3. Surface Metal Raceway System (SMR) – Exposed in Public Areas, Offices, Rooms, Corridors and the like where readily visible to building occupants.
4. Polyvinyl Chloride Conduit (PVC) – below grade, except as noted below.
5. Flexible Metal Conduit (FLEX) - final connections to vibrating equipment and for fixture whips. Also, FLEX may be substituted for EMT for branch circuits between wiring devices and boxes concealed inside frame walls and ceilings. FLEX shall not be used for any homeruns, conduit stub-ups into accessible ceiling spaces, nor for any exposed or surface conduit runs except as final connections to vibrating equipment.
6. Type MC Cable may not be used.

B. Raceways shall be sized so that the cable fill does not exceed 40%; except, minimum conduit sizes shall be as follows:

1. $^{3}/_{4}$ inch – above grade branch circuits, ancillary systems circuits or similar, except as noted below.
2. 1 inch – branch circuit homeruns.
3. 1 inch – below grade.
4. 1 inch – telecommunications circuits terminating in a single outlet.
5. $1^{1}/_{4}$ inch - telecommunications circuits terminating in two devices.
6. $^{3}/_{8}$ inch - fixture whips furnished by the manufacturer with the fixtures.

C. PVC conduit shall be heavy-wall (Schedule 40), flame-retardant, suitable for use with 90^{o}C cable, shall not distort from heat it will normally encounter and shall be resistant to low temperature and sunlight effects, impact and crushing.

D. PVC conduit installed in shallow trenches (less than 24" deep) shall be same as above, except, heavy wall Schedule 80 grade.

E. Electrical metallic tubing shall be electro-galvanized steel.

F. Flexible metal conduit shall be helically wound galvanized steel, type FMC; except outdoors, liquidtight flexible metal conduit shall have a liquidtight, non-metallic, sunlight-resistant jacket over a flexible galvanized steel metal core, type LFMC. Flexible conduit connections shall be a minimum of 18 inches long.

G. Surface metal raceways shall be heavy-gauge zinc plated or galvanized steel; Wiremold or Mono-Systems series 500, 700, 2000 or larger as required or approved equal. Color shall be manufacturer's standard color closest to matching surface color as possible.

H. Surface metal raceway boxes and raceway to be added to the existing shall match the existing and be specifically designed for use with the existing raceway system.

I. Conduit elbow radius and bends in conduits 2 inch diameter and smaller shall be not less than 6 times the conduit diameter and radius bends in larger conduits shall be not less than 10 times the conduit diameter.

J. Telecommunications (with or without cables), spare, c.o., etc. conduits shall be provided with pull rope below grade and pull string above grade.

K. Below grade telephone, computer/data, communications, spare, c.o., etc. conduits shall be plugged at both ends and their location properly marked.

2.01 RACEWAY FITTINGS

A. Fittings for steel conduit shall be steel, galvanized or cadmium plated, threaded type. Couplings shall be galvanized steel. Locknuts and bushings shall be galvanized steel.

B. Connectors, couplings, etc. for EMT shall be steel set-screw type; except, steel raintight compression type in potentially wet or damp locations (e.g. outdoors).

C. Fittings, mounting brackets, etc. for surface metal raceways shall be grounding type, of the same manufacturer and specifically designed for the purpose and use with the particular type of raceway. Telecommunications surface metal raceway system fittings (and power surface metal raceway fittings when installed adjacent to the telecommunications raceway) shall have rounded corners to allow telecommunications cables a minimum 2 inch bending radius without reducing the raceway cable fill capacity. Fittings for non-standard angles less than 90^{o} shall be field bent/fabricated as required. Angles, bends, etc. in raceways greater than 90^{o} and inserts into the raceways providing the 2 inch bend radius will not be allowed. Color shall match raceways.

D. Fittings for flexible metal conduit shall be of a type specifically designed for the purpose.

E. Fittings for nonmetallic conduits shall be of same manufacturer and material as the conduit.

F. End bells and/or insulated bushings shall be used on all underground conduit system terminations at vaults, junction boxes, pad mounted equipment, etc.

G. Conduit terminations at equipment, etc. shall be suitably sealed and/or plugged at both ends to prevent the entrance of moisture. Spare, c.o., etc. conduits shall be provided with removable gasketed covers at the high end to prevent the flow of moisture from one box to another.

H. "Open" end of ancillary, telecommunications, spare, c.o., etc. conduits shall be provided with insulated bushings.

I. Openings in surface metal raceways, etc. through which cables are intended to pass shall be provided with suitable nonmetallic grommets before installing cable.

J. Provide approved properly bonded expansion fittings (capable of expansion and contraction as required), deflection couplings, etc. wherever conduits pass over or through joints or other locations where raceways may be affected by dissimilar movements of the supporting structure.

2.03 BOXES

A. Boxes shall accommodate any devices to be installed and shall be sized as required by the applicable codes for number and size of conduits and cables entering and leaving; except minimum as noted below.

B. Indoor boxes above grade in dry locations shall be standard stamped galvanized steel type, suitable for embedment in concrete and/or masonry where required.

C. Surface mounted boxes installed in wet or damp locations and outdoors shall be threaded rigid body type, cast aluminum or galvanized iron.

D. Unless noted otherwise, boxes installed in wet or damp locations and outdoors shall be threaded rigid body type, cast aluminum or galvanized iron.

E. Surface metal raceway system boxes shall be of the same manufacturer and specifically designed for the purpose and use with the particular type of raceway and/or device to be mounted onto the box. Color shall match raceways.

F. Unless noted otherwise, larger size pull and junction boxes shall be fabricated from code gauge galvanized steel.

G. Switch, power outlet, device, etc. boxes shall be single or ganged to accommodate the required number of devices; except, flush mounted boxes shall be minimum 4 inches square for conduits 1 inch or less and $4^{11}/_{16}$ inches square for larger conduits. Boxes containing a single device shall be minimum $1^{1}/_{2}$ inches deep. Boxes containing multiple devices shall be minimum $2^{1}/_{8}$ inches deep. Flush mounted boxes shall be equipped with plaster rings and suitable wallplates. Surface mounted boxes shall have raised surface type covers.

H. Junction and pull boxes shall be sized as required by the NEC except the minimum size shall be 4 inch, square or octagonal as required, by $1^{1}/_{2}$ inches deep. Junction and pull boxes shall have full-access screw covers.

2.04 WIRE AND CABLE

A. Wire and cable sizes indicated and/or specified are minimums only and shall be increased as required due to NEC, system, load, voltage drop, etc. requirements.

B. All wire and cable (power, control, ancillary systems, etc.) installed in below grade conduit shall be suitable for wet locations.

C. All wire and cable (power, control, ancillary systems, etc.) shall be suitable for wet or dry locations, in conduit, above ground and underground.

D. Ground electrode conductors shall be copper, bare below grade.

E. Branch circuit cable, above grade feeder cable and equipment ground cable, where run in raceways, shall be single conductor copper with 600 volt type XHHW or THWN/THHN insulation. The minimum conductor size shall be #12 AWG; except, fixture whips provided as an assembly by the fixture manufacturer with the fixtures may be #14 AWG. Conductors shall be stranded.

F. Line voltage (Class 1) control cable shall be single conductor stranded copper with 600 volt type XHHW or THWN/THHN insulation. The minimum conductor size shall be #14 AWG.

G. Low voltage (Class 2) control cable shall be single conductor copper with 600 volt type XHHW or THWN/THHN insulation if installed in conduit. Low voltage (Class 2) control cable run "open" shall be multi-conductor copper with 300 volt insulation and an overall jacket, type CL2, listed as being resistant to the spread of fire; except in air handling plenums, cable shall be plenum rated, be listed as being resistant to the spread of fire and bear flammability testing ratings as cable type CL2P. The minimum conductor size shall be #16 AWG.

H. Cords shall be multi-conductor stranded copper with a green insulated grounding conductor, 600 volt type SO insulation and an overall neoprene jacket. The minimum conductor size shall be #14 AWG.

I. Fixture cable, where supplied by the Contractor, shall be stranded copper with 600 volt type PF insulation.

J. See section 27 05 00 for Telecommunications Systems cables.

K. See Section 28 31 00 for Fire Detection & Alarm System cables.

L. Color coding for power cable shall be as follows:

1. 480Y/277 volt, 3 phase, 4 wire:
   Phase A = brown, B = orange, C = yellow, N = gray;

2. 208Y/120 volt, 3 phase, 4 wire:
   Phase A = black, B = red, C = blue, N = white;

3. Equipment ground cables shall be green.

4. Switch legs shall be the same color as the phase conductors. Switch travelers shall be purple.

M. Cable pulling lubricants shall be gel type, of the best quality and shall not have any damaging effect on the insulation. (Ideal Yellow 77 is not approved.)

2.05 CABLE SUPPORTS

A. Cable ties shall be utilized in panelboards, etc. to group and support conductors. Multi-wire branch circuits shall be grouped together as required. All cable shall be fanned-out to terminals and identified by labels; or, if terminated on circuit breakers or control devices, by typewritten indexes or nameplates.

2.06 LOW VOLTAGE CONNECTIONS AND TERMINATIONS

A. Taps and splices shall be kept to a minimum.

B. Taps and splices in #8 AWG, and smaller, branch and fire alarm circuit cable shall be made with twist-on spring type wire nuts. Taps and splices in telecommunications cables, ancillary systems cables, larger branch circuit cables, feeder cables, control cables, etc. or below grade will not be allowed without specific approval from the Engineer.

2.07 PULL STRING AND ROPE

A. Telecommunications (with or without cables), spare, c.o., etc. conduits shall be provided with pull rope below grade and pull string above grade.

B. Pull string shall be resistant to rot and mildew and shall not deteriorate when exposed to oil, grease, etc.

C. Pull rope shall be twisted polypropylene treated with ultraviolet stabilizers, minimum $^{1}/_{4}$ inch diameter. Rope shall be resistant to rot and mildew and shall not deteriorate when exposed to oil, grease, etc.

D. Pull rope shall be flat, woven polyester tape, minimum 1800 tensile strength. Rope shall be pre- lubricated to reduce pulling tension and shall be durably printed with sequential footage markings. Rope shall be resistant to rot and mildew and shall not deteriorate when exposed to oil, grease, lubricants, etc. Where installed in underground conduits, the pull rope shall have a # 22AWG detectable tracer wire woven into the tape. Pull rope shall be Neptco Muletape, or equivalent.

PART 3 EXECUTION

3.01 RACEWAYS

A. Raceways shall be run concealed in the walls (including within CMU and similar construction), soffits (new and existing), above the ceiling or below the floor unless indicated otherwise; except, exposed within utility rooms and other similar type spaces. Raceways may be run exposed within public spaces, rooms, offices, and the like only where indicated and with prior approval of the Owner and Engineer. Exposed raceways shall be run as neatly and unobtrusively as possible, to the approval of the Owner and Engineer.

B. Raceways shall be installed straight, plumb and true and shall be without kinks or sags.

C. Exposed raceway runs shall be either parallel or at right angles to walls and structural members, as neatly and unobtrusively as possible (e.g. adjacent to window and door trims and base, at wall/wall or wall/ceiling intersections, etc.). Exposed parallel or banked raceways shall be run together.

D. Below grade conduits shall be direct buried between 24 and 30 inches below grade (except, conduits below the building concrete floor slab may be run immediately below the floor) and/or as required to bury conduits below footings, grade beams, etc., and spaced a minimum of 2 inches between conduits.

E. PVC conduit shall be solvent welded to prevent the entrance of moisture.

F. Verify location, mounting heights, etc. of cable trays, surface metal raceways from the Owner and Engineer prior to installation. In general, surface raceways shall be mounted as unobtrusively as possible, tight against whiteboard trim, chair rails, in room corners, against chases, etc. & other breaks in the in the wall or ceiling.

G. Junction boxes mounted above accessible ceilings shall be within 42 inches of the ceiling and shall have a minimum 12 inch clearance in front of the box.

H. Raceways shall be located to not interfere with the removal of pipes or equipment for maintenance or repair. All raceways shall be kept a minimum of 6 inches away from items producing heat.

I. Above grade raceways, fittings, etc. shall be securely supported from permanent structural members of building, either directly or indirectly. Raceways shall be fastened at intervals of 8 feet, nominally, and within

36 inches of each outlet, fitting, panel, etc. Caddy clips or wire ties using not less than No. 14 wire and "ladder-ties" which will prevent displacement, may be used only for concealed runs of EMT or GRS to $1^{1}/_{2}$ inch. Single runs of exposed conduit shall be supported with steel pipe straps.

J. Raceways, cable trays, etc. shall not be supported from ducts, plumbing or other piping or from other raceways. Support raceways, cable trays, etc. only from building structural elements.

K. Bends in raceways shall be made without flattening, kinking or reducing the cross-sectional area of the raceway. Bends in parallel or banked runs shall be made from the same center line so that the bends are parallel.

L. All raceway cuts shall be made square with a proper cutting tool. The inside and outside of all raceway ends shall be reamed after cutting and/or threading to eliminate burrs and rough edges, then wiped clean. Joints shall be cut square and shall butt solidly into couplings. Running threads will not be permitted.

M. Surface metal raceways shall be cut with a factory manufactured and/or approved cutting tool designed/made specifically for the purpose.

N. Raceways shall be closely and tightly fitted in couplings, connectors, boxes, etc. to provide an electrically continuous low resistance ground fault return path. Threaded joints shall be made up with at least 5 threads fully engaged.

O. The raceway systems shall be complete (including the installation of bushings, grommets, etc.), snaked and cleaned, and approval of the installation is obtained from the Owner and Engineer, before installation of any wallboard where the raceway is concealed in walls and above ceilings.

P. The raceway systems shall be complete (including the installation of bushings, grommets, etc.), snaked and cleaned, and approval of the installation is obtained from the Owner and Engineer, before or pulling any cable.

Q. Exposed raceways shall be painted.

3.02 EXCAVATION AND BACKFILLING

A. Excavate to depths noted, and as required for proper completion of all below grade work and cut to sufficient size to provide ample room for construction of forms, shoring and bulkheads as required.

B. Cut existing asphalt, concrete, etc. as required. Push under existing curbs, sidewalks, etc. where possible.

C. Underground utilities (electrical, water, sewer, cable television, etc.) are known to exist in the area of construction. The location of existing utilities shown on the drawings is approximate only and is not guaranteed to be an indication of all utilities in the area. The contractor is responsible for contacting the Owner and all utility companies and for field location of all utilities prior to construction. The one-call number for underground utility location services is 811 (1-800-424- 5555). The Contractor shall promptly notify the Engineer of any conflicts between the contract documents and field location of existing utilities. The Contractor is responsible for maintaining the integrity of all existing utilities during construction.

D. Damaged electrical and telecommunications (telephone, computer/data, television, fiber, copper, etc.) cables shall be replaced in their entirety. Splicing will not be allowed.

E. Provide a spotter at all times when excavation occurs by use of a backhoe, excavator or other mechanical equipment.

F. Shore and brace excavations where necessary to prevent cave-ins and in accordance with all safety laws

and codes.

G. During excavations and backfilling, extreme care shall be taken to keep rocks and other rough material away from conduits and cables. Pack a minimum of 6 inches of soft fill material (free from stones, rocks and other rough material that might be forced against the conduits and cables during backfilling, or when settling or frost-heaving disturbs the surrounding earth) around conduits and cables. Wash in to avoid air gaps.

H. Backfill shall be good compactable material without large rocks, chunks or sticks. Backfill in all excavations shall be progressively compacted in maximum 12 inch lifts to 95% of maximum density, and shall be without voids.

I. Prior to excavation, the Contractor shall mark or otherwise show the location of all equipment and vaults, and obtain specific approval from the Owner and Engineer for the location of each prior to installing equipment, boxes, raceways, etc.

J. Maintain all bench marks, control monuments and stakes, whether newly established by Surveyor or previously existing. Protect from damage and dislocation. If necessary to disturb existing benchmark, re-establish in a safe place.

K. The clearance between the underground conduit systems and other underground items, such as water and sewer lines shall be as large as necessary to permit maintenance of any of the systems without damage to the other items.

L. Keep all excavations, pits, trenches, etc., entirely free from water. Protect excavations from rain or water from any source during construction. Use suitable pumping equipment or other means as required by conditions. Continue pumping as necessary until completion of work.

M. When operations are interrupted by unfavorable weather conditions, prepare areas by grading and compaction to avoid ponding and erosion.

N. Dirt shall not be permitted to accumulate on roads or adjacent green belts, nor to be washed into drainage ditches.

O. Appropriate steps, such as the application of water, shall be taken to prevent airborne dust due to the work, particularly during excavation and moving of materials.

P. Trenches, excavations and any damage to adjoining areas shall be repaired/restored to existing or better condition to the approval of the Owner and Engineer.

3.03 WARNING TAPES

A. Direct bury warning tape 12 inches above topmost conduits. For multi-use excavations and trenches, provide multiple tapes. Tapes shall extend into vaults and be stubbed up with and secured to conduits as required for access when tracing or locating.

3.04 LABELING & IDENTIFICATION

A. Junction boxes concealed in ceiling spaces and exposed in electrical, mechanical, utility rooms, and the like shall be marked with the panel and circuit numbers contained within. Marking shall be legibly hand-written with black indelible ink marker.

B. In each junction and pull box, neutral conductors shall be grouped with associated phase conductors by taping the conductors together.

C. Interior spare, C.O., etc. conduits shall be labeled with their destination. Labeling shall be made by neatly hand writing on the conduits or enclosures with indelible marker.

D. Color coding for power cable shall be as follows:

1. 480Y/277 volt, 3 phase, 4 wire:
   Phase A = brown, B = orange, C = yellow, N = gray;

2. 208Y/120 volt, 3 phase, 4 wire:
   Phase A = black, B = red, C = blue, N = white;

3. Equipment ground cables shall be green.

4. Switch legs shall be the same color as the phase conductors. Switch travelers shall be purple.

3.05 BOXES

A. Boxes shall be installed plumb and true and be firmly supported either directly or indirectly by a sound and safe structural member of the building with approved anchors and fasteners, and shall be readily accessible for maintenance.

B. Pull boxes or fittings shall be provided in conduit runs as required to prevent excessive stress on the cables during pulling and to allow the minimum required bending radius.

C. Where an accessible ceiling space exists, locate above the ceiling; otherwise locate in an unobtrusive location to the approval of the Engineer and Owner.

3.06 WIRE AND CABLE

A. All wire and cable shall be enclosed within the raceway system.

B. Floor and ceiling penetrations by “open” cables will not be allowed.

C. Inspect cable prior to installation to verify that it is identified properly on the reel or box identification label, that it is of proper gauge, containing correct number of pairs, etc. Note any buckling of the jacket which would indicate possible problems. Damaged cable or any other components failing to meet specification shall not be used in the installation.

D. Conductors of different voltages, systems, functions, etc. shall not be combined in the same raceway or cable unless specifically noted otherwise.

E. Wire and cable shall not be exposed to weather or mechanical damage longer than necessary. Cut ends of the cable shall be immediately sealed to protect from moisture. Duct tape is not an acceptable means of sealing.

F. Cable shall be unrolled from reels, or removed from cartons, and installed so as to not damage the insulation or cable sheath and in a manner which will prevent kinking, crushing or excessive tension on conductors and insulation. Use only guides, rollers, sheaves, etc. that are free-turning and clean. Cable shall not be dragged on the ground or over sharp edges or abrasive surfaces. Slack wire shall be provided at all pull points.

G. All cables to be installed in a raceway shall be pulled together. The pulling means (fish tape, cable, rope, etc.) shall be of a type that will not damage the raceway.

H. Cable shall be installed or drawn into the raceway system only after all work of any nature that might cause injury to the cable is completed. The raceway system shall be complete, snaked and cleaned before pulling any cable.

I. Cord drops from ceilings or similar shall have suitable stainless steel basket weave support/strain relief grips, Kellems or approved equal. Cord connectors shall liquidtight type.

J. All cables shall terminate in an approved enclosure or fitting.

K. Provide wire/cable markers (Brady type or equivalent/better) identifying its circuit number and/or final destination on all cables/conductors (power, telephone/computer, and other ancillary systems) at panels, devices, junction points, etc.

L. Cable pulling lubricants shall be used to minimize pulling stresses on cable pulled into raceways.

M. All cable is subject to subtle damage that may degrade future performance, if abused during installation. In all cable installation, set reels and use sufficient pulleys and manpower so that cables are not pulled around corners or against material that might cause chafing.

OBSERVATION OF IMPROPER CABLING HANDLING TECHNIQUES MAY CAUSE THE CONSULTANT/ENGINEER AND/OR OWNER TO REQUIRE THE CONTRACTOR TO DISCARD AFFECTED CABLES, INCLUDING ANY OTHERS ALREADY INSTALLED BY THE PERSONNEL FOUND USING INCORRECT PROCEDURE.

N. Conductor connections shall be made with connectors of the proper size and type. Compression connections shall be made with the correct die and number of crimps, or the correct tightening torque in the case of mechanical connectors, according to manufacturer's instructions and recommendations. Use suitable oxide inhibiting joint compound on all aluminum terminations. Termination of insulated conductors shall be made so that the stripped length of bare conductor is not longer than required for the terminal or connector. Care shall be taken to not nick conductors during insulation removal.

O. At pulling points, the cables shall be neatly bundled by circuit.

P. Taps and splices shall be kept to a minimum; and are not allowed in cables larger than #8 AWG, control cable, ancillary systems cable, etc. and below grade without prior approval from the Engineer.

Q. Field wiring shall not contact live parts.

R. Cables shall not be supported by their terminations. Suitable cable ties and/or supports shall be utilized in switchboards, panelboards, terminal boxes, junction boxes, vaults, etc. to group and support conductors. All cable shall be fanned-out to terminals and identified by labels; or, if terminated on circuit breakers or control devices, by typewritten indexes or nameplates.

S. Insulated cable supports shall be provided to relieve any strain imposed by cable weight or movement, and to secure cable as required to withstand the effects of fault currents.

3.07 PENETRATIONS

A. Wall, ceiling and floor penetrations by raceways (both inside and outside the raceway), cables, etc. shall be sealed to maintain the original moisture, dust and fire resistance to the approval of the Engineer.

B. Do not cut, notch or drill structural framing members for the installation of raceways without the Owner's approval in each case. Holes and penetrations where allowed in studs, joists and other structural members for raceways and cables shall be of a size to allow for a tight fit.

C. Floor and ceiling penetrations by “open” cables and/or cable trays will not be allowed.

D. Contractor shall x-ray or otherwise determine the exact location of existing structural components, conduits, piping, wiring, ducts and the like prior to making any new penetrations or openings (or expanding existing openings) in any floor, wall or ceiling.

3.08 PULL STRINGS AND ROPES

A. Provide pull ropes in all below grade telecommunications (with and without cables), spare, etc. conduits.

End of Section 26 05 00

SECTION 26 05 26 GROUNDING

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26, 27 & 28 Sections apply to all the grounding work.

B. Coordinate grounding work with related work shown and specified elsewhere.

C. Provide all materials necessary for the proper execution and completion of the work as herein specified or called for on the drawings. Required items not specifically mentioned in the specifications or indicated on the drawings shall be provided as necessary to produce the intended results.

D. In the event that any item is not available exactly as specified, the Contractor shall so notify the Engineer in writing as early as possible to allow ample time for an alternate item to be selected without delay to the project.

PART 2 PRODUCTS

2.01 GROUNDING

A. Ground clamps, nuts, washers, etc. shall be corrosion resistant high copper alloy or silicon bronze.

B. Branch (high voltage and low voltage) circuits, control circuits, etc. shall include a separate equipment ground cable (sized the same as the largest circuit conductor, unless otherwise noted) run in the same raceway with the circuit conductors or bundled with the circuit conductors if run “open”. Equipment ground conductors for feeder (high voltage and low voltage) circuits, branch circuits, control circuits, etc. installed inmetallic raceways shall be redundant, consisting of both an electrically continuous metal raceway system and the separate equipment ground cable run in the same raceway with the circuit conductors.

2.02 WIRE AND CABLE

A. Ground wire and cable sizes indicated and/or specified are minimums only and shall be increased as required due to NEC, system, load, voltage drop, etc. requirements.

B. Equipment ground cable shall be single conductor stranded copper with 600 volt type XHHW or THWN/THHN insulation. Conductor size shall match feeder, branch circuit, etc. conductor size unless noted otherwise.

PART 3 EXECUTION

3.01. GROUNDING

A. All electrical equipment, enclosures, boxes, devices, etc. shall be provided with a ground fault return path by means of an insulated grounding conductor installed with the circuit conductors, and the integrity of the raceway system if applicable. Bond raceway system as required.

B. Ground terminals of all equipment, devices, etc. shall be grounded by the equipment ground conductor.

C. Isolated ground outlets shall have a separate equipment ground cable.

D. Raceways shall be closely and tightly fitted in couplings, connectors, boxes, etc. to provide an electrically continuous low resistance ground fault return path. Threaded joints shall be made up with at least 5 threads fully engaged.

E. Compression connections shall be made with the correct die and number of crimps, or the correct tightening torque in the case of mechanical connectors, according to manufacturer's instructions and recommendations.

F. Before grounding connections are made, contact surfaces shall be thoroughly cleaned and anti- oxidant solution applied.

G. Connections shall be both mechanically and electrically secure. Torque connecting hardware in accordance with the manufacturer's instructions and recommendations.

H. Tests shall be made to verify the continuity of the ground system and all ground fault return paths.

I. After completion of the grounding system, the resistance of the grounding network to earth shall be measured using a ground megger using a fall of potential test method. Driven ground rods shall be disconnected and tested separately from the grounding system. The minimum ground earth resistance shall be maximum 10 ohms.

End of Section 26 05 26

SECTION 26 07 00 THERMAL & MOISTURE PROTECTION

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26, 27 & 28 Sections apply to all the thermal & moisture protection work.

B. Coordinate thermal & moisture protection work with related work shown and specified elsewhere.

C. Provide all materials necessary for the proper execution and completion of the Work as herein specified or called for on the drawings. Required items not specifically mentioned in the specifications or indicated on the drawings shall be provided as necessary to produce the intended results.

D. In the event that any item is not available exactly as specified, the Contractor shall so notify the Engineer in writing as early as possible to allow ample time for an alternate item to be selected without delay to the project.

1.03 SUBMITTALS

A. Provide submittals for all moisture, fire and dust stop materials, complete with a description of where each type is proposed to be used.

PART 2 PRODUCTS

2.01 GENERAL

A. Coordinate the features of materials and equipment so they form an integrated system.

2.02 MOISTURE PROOFING

A. Moisture proofing systems shall be designed and installed to allow the passage of cable, conduit or pipe through exterior walls, etc. and vaults. They shall provide a barrier seal to prevent the penetration of water and gases into the structure to be penetrated.

2.03 FIRE STOPPING AND SEALING MATERIALS

A. Fire-stop systems shall be designed and installed to allow the passage of cable, conduit or pipe through fire rated walls or floors. They shall provide a barrier seal to prevent the penetration of fire, smoke, water, and gases, with a fire rating to match the rating of the architectural assembly or structure to be penetrated.

B. Fire-stop systems shall be resistant to direct hose spray.

C. Fire-stop systems shall consist of one or more of the following materials:

1. Ablative (typical of silicone-based technology).

2. Cementitious (Can be troweled like grout or mortar, but is specifically rated or the purpose. Grout shall not be permitted).

3. Elastomeric (Flexible substance which resembles rubber).

4. Endothermic (Absorbing heat energy.).

5. Intumescent (Swelling under the influence of heat, pillows, etc.).

6. Mechanical (Assemblies that allow additions or deletions).

D. Fire-stop systems shall be UL classified for the intended use.

E. Wall, ceiling and floor sleeves and the like shall be metallic raceways with intumescent bags or bricks; except, at the option of the Contractor, sleeves may be metallic wireways (sized to match the required raceways) which contain an intumescent insert material that adjusts automatically to cable additions or subtractions, Specified Technologies EZ Path, 3M Fire Barrier Pass-Through, or approved equal.

F. Fire-stop material around cable penetrations, within raceways (except wall and floor sleeves), etc. shall be intumescent bags, bricks, or soft, pliable, non-hardening intumescent putty, with high dielectric strength (insulator). Material shall allow removal of the material(s)/system(s) for future cable additions and/or removals.

G. Drywall joint compound, concrete, and mineral wool shall not be used as fire stopping materials.

H. Fire-stop products shall be as manufactured by 3M, Dow Corning, Hilti, Nelson, Specified Technologies, Unique Fire Stop Products, or approved equal.

2.04 DUST SEALING MATERIALS

A. Dust seal systems shall be designed and installed to allow the passage of cable, conduit or pipe through non-rated ceilings, walls, partitions or floors.

B. Dust sealant around raceways and the like shall be top grade paintable silicone based or poly-sulfite caulk, or expanding foam type sealant.

C. Dust sealant around cable penetrations, within raceways, etc. shall allow removal of the material for future cable additions and/or removals.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provide all fire-stop sealing for all penetrations through fire-resistance-rated floors, walls and partition construction; including empty openings and openings containing cables, raceways, cable trays, cable racks, sleeves, supports and other penetrating items as required, both new and existing where new cables, raceways and the like have been installed. Contractor is responsible for verifying the fire rating of the barrier to be penetrated.

1. Install fire-stop systems in accordance with manufacturer-tested methods and to manufacturer's instructions. If required, extend fire-stop system through the full thickness of the wall or floor and through the full length of the sleeve.

2. Seal openings with a removable fire-stop material after each shift. Do not leaveunattended openings in building fire-resistance-rated walls, partitions and floors at any time during construction.

3. Fire-stopping at penetrations between tunnels and buildings shall include smoke isolation provisions to prohibit smoke migration from one space to the other.

B. Where sleeves or penetrations are installed through non-rated partitions, provide a dust seal to prevent dust from migrating between the spaces separated by the partition. Also, where fire stop material does not completely fill an opening (e.g. intumescent pillows), provide suitable dust sealant as required.

C. Where existing sleeves or penetrations are re-entered for installation of new cables, Contractor shall modify/re-install or provide new fire stop material as required to maintain the original fire rating of the barrier.

3.02 MOISTURE PROOFING

A. Conduit terminations at equipment, etc. shall be suitably sealed and/or plugged at both ends to prevent the entrance of moisture.

B. Conduit penetrations through retaining walls and building exterior walls shall be suitably sealed and/or grouted to prevent the entrance of moisture.

C. PVC conduit shall be solvent welded to prevent the entrance of moisture.

End of Section 26 07 00

SECTION 26 20 00 ELECTRICAL TRANSMISSION

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26, 27 & 28 Sections apply to all the electrical work.

B. Coordinate electrical work with related work shown and specified elsewhere.

C. Provide all materials necessary for the proper execution and completion of the work as herein specified or called for on the drawings. Required items not specifically mentioned in the specifications or indicated on the drawings shall be provided as necessary to produce the intended results.

D. In the event that any item is not available exactly as specified, the Contractor shall so notify the Engineer in writing as early as possible to allow ample time for an alternate item to be selected without delay to the project.

1.03 SUBMITTALS

A. Provide submittals for the following:

1. Wiring devices & wallplates.

PART 2 PRODUCTS

2.01 PANELS

A. Circuit breakers shall be bolt-on in panelboards, molded-case, thermal magnetic, quick make- quick break type with trip indicating handles. Branch circuit breakers for motor loads shall be HACR type. Branch circuit breakers for lighting loads shall be SWD type. Multi-pole breakers shall be single-handle, internal common trip. Tandem breakers shall not be used.

B. Provide approved handle ties between single pole circuit breakers for all multiwire branch circuits as required.

C. Circuit breakers for installation in the existing panelboard(s) shall be of the same manufacturer, and be of a type manufactured specifically for that type, vintage and short circuit rating of the panelboard.

D. Panels shall have a circuit directory frame and card with a transparent cover furnished on the door. Directory cards shall have a typewritten index clearly and accurately identifying the function and location (using the room name and numbering system shown on the Architectural plans) of the circuit. Provide new typewritten circuit directory cards for all existing panels that are modified in any way.

2.02 WIRING DEVICES

A. Wiring devices shall be specification grade, all of the same manufacturer, white colored; except:

1. Receptacles supplied from the standby system shall be orange color.

B. Lighting switches shall be toggle, AC quiet type rated 20 amps, 120-277 volt.

C. Refer to Section 26 50 00 Lighting for occupancy sensing wall switches and low voltage lighting control switches.

D. General purpose receptacles shall be 15 amp, 125 volt, AC, straight blade, 3-wire grounding type.

E. Isolated ground receptacles shall be 15 amp, 125 volt, AC, straight blade, 3-wire grounding type with green wire ground lugs electrically isolated from the mounting tabs.

F. Ground fault interrupter (GFI) type receptacles shall be duplex, Class A, 15 amp, 125 volt with end of life protection (either by rendering itself incapable of delivery power or by visual indication) and reverse line-load miswire protection. Provide individual ground fault interrupter type receptacles at each location indicated or as required. Feed-through type protection of multiple outlets will not be allowed.

G. Faceplates (wallplates) shall be commercial grade, single gang, high impact flame retardant thermoplastic faceplate (wallplates), color shall be ivory or to match devices.

H. Surface mounted devices shall have raised surface type covers, galvanized steel.

I. Definite purpose devices shall be labeled with a description of the device's function, rating and circuit identification.

J. All outlets shall be labeled with the panel and circuit number(s) from which the device is fed. Labels shall be heavy duty adhesive type, clear with black letters on light colored devices and clear with white letters on dark colored devices. Lettering shall be appropriately sized for the application, except minimum $^1/_4$ inch. Labels on ceiling mounted devices shall be large enough to read from the floor. Labels shall be as manufactured by Kroy, Brothers, or approved equal.

Self-adhesive circuit numbers, masking tape, plastic punch type "Dymo" labels, etc. are not acceptable.

2.03 EQUIPMENT IDENTIFICATION

A. Provide nameplates for all equipment and other devices used for the control of circuits, equipment, etc. Include the panel and circuit number(s) from which it is fed.

B. Labels shall be heavy duty adhesive type, clear with black letters on light colored devices and clear with white letters on dark colored devices. Lettering shall be appropriately sized for the application, except minimum $^1/_4$ inch. Labels on ceiling mounted devices shall be large enough to read from the floor. Labels shall be as manufactured by Kroy, Brothers, or approved equal. Self-adhesive circuit numbers, masking tape, plastic punch type "Dymo" labels, etc. are not acceptable.

C. Nameplates shall adequately describe the function or operation of the identified equipment, devices, etc. and, where applicable, include the panel and circuit number(s) from which it is fed. Nameplate designations shall be consistent with the project documents. Submit proposed inscriptions for approval.

PART 3 EXECUTION

3.01 TEMPORARY POWER

A. The Contractor shall provide all temporary power services, facilities, equipment, devices, material, etc. required for the construction; including adequate lighting, outlets, balancing, testing, etc. as may be

necessary for the proper performance and inspection of the work.

B. The temporary power system shall be provided in a neat and safe manner, in compliance with governing codes and good working practice.

C. The temporary power system shall be removed when no longer required.

3.02 LOCATIONS

A. The mounting heights and location of similar equipment and devices shall be consistent, in accordance with the requirements of the ADA where applicable. Special purpose items shall be located conveniently for the purpose intended.

B. Devices shall be located to not interfere with the removal of pipes or equipment for maintenance or repair. All devices shall be kept a minimum of 6 inches away from items producing heat.

C. Disconnect switches, circuit breakers, etc. shall, in no case, be installed so that the grip of the operating handle, when in its highest position, is more than 6 1/2 feet above the floor or working platform.

D. Prior to rough-in, the Contractor shall mark or otherwise show the location of all equipment and devices, and obtain specific approval from the Owner and Engineer for the location of each prior to installing enclosures, boxes, raceways, etc.

3.03 EQUIPMENT AND DEVICES

A. Equipment, devices, enclosures, etc. shall be installed plumb and true and shall be square with the adjacent walls, ceilings and structural members.

B. Equipment, cabinets, boxes, etc. shall be accurately mounted and leveled and be firmly supported either directly or indirectly by a sound and safe structural member of the building in accordance with manufacturer's instructions, or as directed. Supports shall be neatly placed and properly fastened.

C. The correct lifting, jacking and/or moving gear which will prevent damage to the equipment shall be used.

D. Bolts, nuts, screws and other fastenings shall be tightened and all covers replaced on equipment and boxes. Electrical connections, particularly those on bus work in panelboards, etc. shall be checked to ensure tightness and electrical conductivity. Gaskets, seals, etc. shall be checked for proper fit.

E. Follow manufacturer's installation details wherever available. Provide boxes, mountings, wiring or fittings required, standard or special.

F. The Contractor shall touch-up paint all scratched, marred or damaged factory finish on equipment, devices, enclosures, etc.

3.04 TESTING

A. Before testing, visually inspect equipment thoroughly, and perform mechanical operation and key interlock tests in accordance with manufacturer’s instructions.

B. Before energization, test all equipment in accordance with manufacturer’s recommendations; except minimum as described below.

C. Compare test results with factory-obtained results and results on similar equipment. Investigate variations. Consult manufacturer for recommendations.

D. Upon completion, all equipment and systems shall be tested for functional operation, including all intended modes and sequences of operation.

E. Record the values of each test, along with the description of the instrument, voltage level, temperature, time, and date of the test on the form included in the contract documents. Signthe results.

End of Section 26 20 00

SECTION 26 50 00 LIGHTING

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26 Sections apply to all the lighting and lighting control work.

B. Coordinate lighting and lighting control work with related work shown and specified elsewhere.

C. Provide all materials necessary for the proper execution and completion of the work as herein specified or called for on the drawings. Required items not specifically mentioned in the specifications or indicated on the drawings shall be provided as necessary to produce the intended results.

D. Lighting control system work shall include all necessary set-up, programming, testing, commissioning, etc. for a complete and operational system, adjusted, tested and ready for operation.

E. In the event that any item is not available exactly as specified, the Contractor shall so notify the Engineer in writing as early as possible to allow ample time for an alternate item to be selected without delay to the project.

1.03 QUALITY ASSURANCE

A. The lighting systems and all controls shall be in accordance with the Washington State Non- Residential Energy Code (NREC), ASHRAE 90.1 as well as LEED certification requirements.

1.04 SUBMITTALS

A. Provide submittals for the following:

1. Lighting fixtures.
2. Lighting control devices.
3. Nameplates and labels.

B. Provide complete manufacturer's schematic drawings for each system.

PART 2 PRODUCTS

2.01 GENERAL

A. Fixtures, luminaires, poles, etc. shall include all necessary mounting and connecting accessories.

B. Contractor & lighting fixture supplier shall verify description & catalog numbers in Lighting Fixture Schedule on the drawings match and mounting requirements are correct. Advise engineer of any conflicts or discrepancies.

2.02 LIGHTING

A. Light Emitting Diode (LED) luminaires shall have a luminous efficacy of at least 90 lumens/W, a color temperature of 3500 K, a CRI of at least 80, an estimated life of at least 50,000 hours at 70% lumen maintenance, and shall include a minimum 5-year warranty on the entire luminaire including the driver. The luminaire and LEDs shall have been tested in accordance with LM-79 and LM-80.

2.03 EMERGENCY LIGHTING

A. Emergency lighting power units shall be self contained, designed to provide power to fixtures automatically upon interruption of normal electric power for a minimum of 90 minutes. Emergency power source shall be a rechargeable, maintenance free, sealed, spillproof pure lead or lead-calcium battery system. The units shall incorporate a regulated solid-state charger with filtered output and low voltage disconnect.

B. Controls shall include circuitry to provide continuous self-diagnostic monitoring of the units operation, programmed discharge cycles, charger mode indicator light, unit malfunction indicator lights, and a test switch.

2.04 LIGHTING CONTROLS

A. Occupancy sensors and photosensors shall be by the same manufacturer and shall form a single integrated system in each room.

B. Basis of design manufacture is Hubbell.
   1. Watt Stopper
   2. or approved equal.

C. Occupancy sensors:

Occupancy sensors shall be combination passive infrared and ultrasonic type, ceiling mounted, with adjustable time delay, adjustable sensitivity, and an LED indicator. Lenses shall be as required for the application (e.g. wide angle for open areas and the like and long range for corridors). The sensors shall be able to detect the difference between a human body and the background space. Occupancy sensors shall be Watt Stopper DT-300.

1. Occupancy sensors on high ceiling areas shall be designed specifically for high mounting (15’ – 40’) and large area applications. Lenses shall be as required for the application.
2. Relays/power packs for use with low voltage switching shall be remote mounted, 120 or 277 volt AC input (as required), 24 volt DC output, with single or multiple relays and contacts rated minimum 20 amps as required. Relays/ power packs shall be capable of controlling and/or being controlled by up to minimum 3 sensors and shall be capable of selection between automatic on mode and manual on mode. Power packs shall be capable of being connected to a momentary contact switch for manual switching of connected loads. Occupancy sensors relays/power packs shall be of the same manufacturer and specifically designed for use with the occupancy sensors, Watt Stopper BZ-150, or approved equal.
3. Where required due to the quantity of occupancy sensors, provide additional remote power supplies. Power supplies shall be of the same manufacturer and specifically designed for use with the occupancy sensors.

D. Lighting level photosensor controls shall be dimming type, capable of dimming the ballasts or LED driver in response to varying light levels, consisting of a photosensor, relays/power packs and utilizing handheld remote control for setup and adjustments. Photosensor shall be ceiling mounted, be accurate to +/- 5% over the footcandle range, and shall have a linear response to light input. Power packs shall be shared with the occupancy sensors, remote mounted, 120 or 277 volt AC input (as required), 24 volt DC output, with contacts rated minimum 20 amps. Photosensors shall be Watt Stopper type LS-301, with LRS-301S remote control and power packs, or approved equal.

E. Motion sensor switches shall be ultrasonic or passive infrared type, wall mounted, color to match the devices in the building, 120-277 volt, rated minimum 1200 watt, with built-in light level sensor, adjustable sensitivity, adjustable time delay, switch (2 switches if dual control) for manual control and vandal resistant hard lens. Buttons on the face of the switches shall operate in toggle mode to manually turn on/off connected lighting loads. Motion sensor switches shall be Watt-Stopper type PW-100 for single switch/level applications and Watt- Stopper type PW-200 for dual level/switch applications.

2.05 LIGHTING CONTACTORS, RELAYS AND CONTROL DEVICES

A. Low voltage toggle switches shall be toggle type, single pole-double throw, momentary contact, ivory color, normally open, rated minimum 3 amps, 24 VAC, with mounting bracket and suitable for use in standard single-gang openings. Switches shall be Leviton model 1081, Greengate model GMT, or equal.

B. Low voltage dimmer switches shall be slide-to-off type, 0-10V control type, suitable for use with the installed power packs, ivory color with wall plate. Switches shall be Wattstopper ADF- 120277, or approved equal.

2.06 WIRE AND CABLE

A. Fixture whips provided as an assembly by the fixture manufacturer with the fixtures shall be #14 AWG.

B. Fixture cable, where supplied by the Contractor, shall be stranded copper with 600 volt type PF insulation.

C. Lighting control system cable shall be as required by the lighting control system manufacturer. Cable shall be listed as being resistant to the spread of fire and bear flammability testing ratings as communications cable type CM or control cable type CL2; except in air handling plenums, cable shall be plenum rated, be listed as being resistant to the spread of fire and bear flammability testing ratings as cable types CMP or CL2P respectively.

PART 3 EXECUTION

3.01 LOCATIONS

A. The mounting heights and location of similar equipment and devices shall be consistent, in accordance with the requirements of the ADA where applicable. Special purpose items shall be located conveniently for the purpose intended.

B. Prior to rough-in, the Contractor shall mark or otherwise show the location of all equipment and devices locations, and obtain specific approval from the Owner and Architect for the location of each prior to installing enclosures, boxes, raceways, etc.

C. Locate light switches, lighting control stations, etc. 6 inches from door casings (except on center in spaces less than 12 inches), 44 inches to centerline above finished floor.

3.02 EQUIPMENT, LUMINAIRES AND DEVICES

A. Equipment, luminaires, devices, etc. shall be installed plumb and true and shall be square with the adjacent walls, ceilings and structural members.

B. Unless noted or indicated otherwise, orientation of luminaires within a space shall be consistent.

C. Where multiple 3-way switches are ganged together, the switches shall be arranged so that all of the switches are in the same up or down position when all the fixtures in the space are on. The corresponding switches at the opposite end of the circuit shall also be all in the up or down position.

D. Equipment, cabinets, boxes, luminaires, devices, etc. shall be accurately mounted and leveled and be firmly supported either directly or indirectly by a sound and safe structural member of the building in accordance with manufacturer's instructions, or as directed. Supports shall be neatly placed and properly fastened.

E. Occupancy sensors shall be mounted and aimed in accordance with manufacturer's recommendations. All necessary adjustments and settings shall be made in order to ensure the lights will operate when the room is occupied.

F. Photoelectric controls shall be mounted and aimed in accordance with manufacturer's recommendations. All necessary adjustments and settings shall be made in order to ensure the controls will operate properly.

G. The correct lifting, jacking and/or moving gear which will prevent damage to the equipment shall be used.

H. All bolts, nuts, screws and other fastenings shall be tightened and all covers replaced on equipment and boxes. All electrical connections shall be checked to ensure tightness and electrical conductivity. All gaskets, seals, etc. shall be checked for proper fit.

I. Follow manufacturer's installation details wherever available. Provide any special mountings, wiring or fittings required.

J. Provide complete manufacturer's schematic drawings for each system. Any deviations between schematic drawings and contract documents shall be outlined in a separate cover letter. Said deviations will be subject to approval by the Engineer.

K. Provide gaskets, seals, etc. as required to prevent the entrance of moisture, debris, insects, etc. Check for proper fit.

L. Repair damaged corrosion protection and touch-up paint all scratched, marred or damaged factory finish on equipment, devices, fixtures, enclosures, etc.

3.03 SUPPORTS

A. Provide all necessary supports and backing for all fixtures, boxes, enclosures, etc. Attach to wood with wood or lag screws, to metal with machine screws or bolts and to concrete with carbon steel wedge or sleeve type expansion anchors or self-drilling metal anchors and machine screws or bolts. Use size and number of attachments as required to support equipment, fixtures, etc. weight with a safety factor of at least four.

B. Powder actuated fasteners, plastic expansion type anchors, nails and toggle bolts are not permitted.

C. Brace all equipment, etc. as required to meet the requirements of seismic zone 3.

D. Fixtures, luminaires, etc. shall be accurately mounted and leveled and be firmly supported either directly or indirectly by a sound and safe structural member of the building in accordance with manufacturer's instructions, or as directed. Supports shall be neatly placed and properly fastened.

E. Ceiling mounted recessed light fixtures, etc. shall be connected both to the ceiling system with proper "earthquake" clips and to the building structural system with a minimum of 2 suitable earthquake chains or "tie wires" at diagonally opposite corners.

F. Follow manufacturer's installation details wherever available. Provide all supports, mountings, etc. required, standard or special.

3.04 WIRES AND CABLES

A. Inspect cable prior to installation to verify that it is identified properly on the reel or box identification label and that it is of proper gauge, containing correct number of pairs, etc. Note any buckling of the jacket which would indicate possible problems. Damaged cable or any other components failing to meet specification shall not be used in the installation.

B. All concealed power limited systems cable may be run “open” in accessible ceilings; except, where indicated otherwise and where penetrating through ceilings, floors, walls, draft-stops, etc.

C. "Open" cables shall be bundled and supported from permanent structural members of the building, either directly or indirectly, with suitable hooks. Support spacing shall not exceed 5 feet. Protect “open” cables during installation in ceiling spaces. Cables shall not interfere with the removal of pipes or equipment for maintenance or repair. All "open" cable shall be kept a minimum of 6 inches from pipes, ducts, and other items producing heat. Support “open” cables a minimum of 6 inches above T-bar ceilings. Tape and cable ties are not approved methods of fastening cables.

D. Floor and ceiling penetrations by “open” cables will not be allowed. Provide conduit sleeves, as required plus a spare (with fire and dust stopping and sealing) where “open” cable passes through floors, walls, partitions, etc.

E. Cable shall be unrolled from reels, or removed from cartons, and installed in a manner which will prevent kinking, crushing or excessive tension on conductors and insulation. Slack wire shall be provided at all pull points.

F. Cable shall be installed or drawn into the raceway system only after all work of any nature that might cause injury to the cable is completed. The raceway systems shall be complete (including the installation of bushings, grommets, etc.), snaked and cleaned, and approval of the installation is obtained from the Owner and Engineer, before pulling any cable.

G. Cable pulling lubricants shall be used to minimize pulling stresses on cable pulled into raceways.

3.05 EQUIPMENT TESTING

A. Before testing, visually inspect equipment thoroughly, and perform mechanical operation tests in accordance with manufacturer’s instructions.

B. Lighting Control Devices:

1. Stand-alone occupancy sensors shall be individually tested and the test results documented. Verify that the occupancy sensors turn on the lights in the controlled space immediately when the room is entered. Record the amount of time that the lights stay on after the room is vacated. Delay times shall be programmed as follows:

a.	Offices:	20 minutes.
b.	Classrooms:	20 minutes.
c.	Restrooms:	20 minutes.
d.	Corridors:	15 minutes.
e.	Work Rooms:	15 minutes.
f.	Conference Rooms:	15 minutes.
g.	Storage Rooms:	5 minutes.
h.	Utility Rooms:	5 minutes.

2. Wall switch occupancy sensors shall be configured for the optimal setting for the space in which they are installed. Factory default settings are typically not acceptable. Verify settings with the Engineer

prior to installation.

3. Daylight harvesting photosensors shall be individually tested and the test results documented. Verify that the photosensor controls light fixtures in a continuous dimming configuration with rising and falling ambient light levels. Record the foot-candle level on the work surface and the corresponding footcandle measurement of the photosensor. Maintained foot-candles at the work surface shall be as follows:

   a. Offices: 50 foot-candles.
   b. Classrooms: 50 foot-candles.
   c. Conference Rooms: 50 foot-candles.
   d. Restrooms: 20 foot-candles.
   e. Corridors: 20 foot-candles.
   f. Storage Rooms: 20 foot-candles.
   g. Utility Rooms: 20 foot-candles.

4. Comply with energy code lighting control system “Acceptance Requirements”. Acceptance tests are used to verify that lighting controls were installed and calibrated correctly. These tests may require that a responsible party certify that controls are installed and calibrated properly.

End of Section 26 50 00

SECTION 27 05 00 COMMON WORK RESULTS FOR COMMUNICATIONS

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26, 27 & 28 Sections apply to the telecommunications systems work.

B. Coordinate telecommunications systems work with related work shown and specified elsewhere.

C. The Contractor shall perform all the work required (including the furnishing of all supervision, labor, services, tools, materials and equipment and the performance of all operations and incidentals necessary) for a complete, safe and reliable telecommunications system installation, adjusted, tested and ready for operation. The work is generally described as follows:

1. Removal of the existing telecommunications systems equipment, devices, cables, raceways, boxes, etc. where indicated.
2. Telephone, data horizontal cabling infrastructure.
3. Cable supports.
4. Grounding.
5. Individual and/or combination voice, data stations/outlets and associated cables, etc.
6. Terminating all cables on both ends - voice, data, grounding, station, copper, new and existing, etc.
7. Moisture, fire and dust stopping and sealing.
8. Nameplates and labeling.
9. Equipment, device, cabling, etc. identification and records.
10. Testing and completing.
11. As-built drawings.
12. Obtaining, and paying for all required licenses, permits, inspections, plan review and other fees, etc.

1.03 DEFINITIONS

A. The word "Telecommunications" refers to all forms of information transport and processing, such as voice (telephone), data (computer network), etc.

B. The word(s) "Station" or "Station Outlet" refers to all combination telecommunications outlets.

C. The word(s) "Station" or "Station Cables" refers to all CAT 6A horizontal cables.

D. The word “Backbone” refers to the cabling, connections, etc. between telecommunications rooms.

E. The term "Contractor" used throughout this section of these specifications and on the telecommunications drawings shall be understood to mean the Telecommunications Contractor. All other work shall be called out by name.

F. “Approved” means approved by the Architect. “For approval” means for the Architect’s approval.

G. “Furnish” means to supply and deliver to the Project, ready for installation and in operable condition.

H. “Install” means to incorporate in the work in final position, complete, mounted, anchored, connected, and in operable condition.

I. “Provide” means furnish and install.

J. “As directed” means as directed by the Architect.

K. “Concealed” means hidden from sight in trenches, walls, chases, ceilings, etc.

L. “Exposed” means within sight; that is, not concealed as defined above, and installed on the surface of walls, ceilings, etc.

M. “C.O.” means conduit only; that is, without cable (except, provide pull string).

N. “F.O.I.C.” means Furnished by Others (e.g. general contractor, other subcontractors, equipment suppliers, Owner, systems contractors working directly with the Owner, etc.), Installed by Contractor.

O. Definitions of all other terms, etc. are in accordance with AIA, ANSI, IEEE, IES, NEMA, etc. standard definitions.

1.04 DRAWINGS AND SPECIFICATIONS

A. The telecommunications plan drawings are general in form and do not attempt to show complete details or list every item of the telecommunications systems, the building construction or the various equipment; however, the routing of raceways and circuits, and the locations of equipment, devices, fixtures, etc. represent the desired finished arrangement; except, as governed by structural or mechanical conditions or obstructions.

B. Specifications are, in some cases, written in an abbreviated form. Words such as shall, shall be, the Contractor shall, and similar mandatory phrases are supplied by inference.

C. Investigate the structural and finish conditions affecting the work. Refer to the architectural, structural and mechanical drawings, supplier shop drawings and submittals, etc. for additional details, equipment ratings, dimensions, location and swing of doors, location and size of partitions, cabinets, etc. and similar features. Verify all dimensions, equipment ratings, etc. with the actual before installation. Arrange the work accordingly.

D. The intent of the drawings and specifications is to include all items necessary for the proper execution and completion of the Work; however, any item or detail not specifically mentioned in the specifications or shown on the drawings, but which is necessary to produce the intended results shall be included.

E. The Contractor shall bring to the Architect’s and Engineer's attention any discrepancies within the Contract Documents, between the Contract Documents and field conditions, and any design and layout changes required due to specific equipment selection, etc. prior to equipment and material purchasing and installation. Corrective work necessitated by discrepancies after purchasing and installation shall be at the Contractor's expense.

F. Verify all equipment and device locations with the Owner and Architect prior to rough-in

1.05 SPECIAL AREAS

A. Ceiling spaces throughout the entire facility are an air handling plenum. All cables, devices, connections, etc. shall be plenum rated where installed above the ceiling.

B. Telecommunications rooms shall be treated as clean room type environments. Final cleaning shall include thorough cleaning of the room to a dust-free condition. After termination of cables and final cleaning, food, drink, dirt, dust, metal shavings and the like shall not be permitted in telecommunications rooms.

1.06 SUBMITTALS

A. Provide product submittals for the following:

1. Station cable.
2. Workstation termination hardware.
3. Patch panels.
4. Telecommunications room termination hardware.
5. Cable supports.
6. Labels.

B. The Contractor shall submit proposed procedures and equipment to be used in testing voice and data cabling along with samples of the reporting format from a past similar project.

C. Provide qualification information for persons installing and testing the components (equipment, devices, materials, etc.) of each system, indicating their capabilities and experience. Include evidence of applicable registration or certification.

D. Prepare detail layout drawings to a larger scale than the contract drawings in areas where the work is of sufficient complexity to warrant additional detailing. Prepare these drawings on tracings the same size as the contract drawings.

1.07 RECORD DOCUMENTS

A. Submit "as-built" record drawings and operation and maintenance manuals at completion of the project in accordance with the specific submittal requirements listed elsewhere in these Specifications.

B. Provide as-built documentation consistent with the contract documents as required, in AutoCAD 2017 .dwg files with as-built notations for all sheets. (Consultant/Engineer will provide construction drawings AutoCAD files to contractor.)

C. Provide cable test results in both paper copy and software form (where available) on a CD- ROM; except, for station cables and intra-building voice backbone cables provide only a summary in paper copy and complete test results for individual station cables in software form. The CD-ROM shall include the necessary viewing software for all test reports.

1.08 "AS BUILT" DRAWINGS

A. “As-built” drawings shall include cable ID codes for each outlet/receptacle and changes to cable routing, raceway system, telecom room layout, riser diagram, etc.

B. Include any detailed equipment, raceway, wiring, etc. diagrams and layouts prepared by Contractor or his subcontractors, suppliers, etc.

1.09 WARRANTY

A. The complete installation shall be guaranteed for a period of one (1) year after date of project completion. For warranty purposes, the date of project completion shall be considered the date of final acceptance of the installation by the Owner certified in writing, and after Owner has received all project close-out requirements. All corrective work, if needed and requested by the Owner, shall be provided without cost to the Owner during the guarantee period.

B. The contractor shall provide the manufacturer 20-year Extended Product Warranty on the completed voice and data cable infrastructure end-to-end solution. The warranty shall be provided by the manufacturer of the voice and data termination hardware.

C. The contractor shall provide any available third party or manufacturer warranties on the installation.

1.10. QUALITY ASSURANCE

A. Contractor and Contractor's personnel shall be experienced, thoroughly trained and completely familiar with telecommunications infrastructure, systems, equipment, devices, materials, etc. and the required methods of installation.

B. Contractor Qualifications:

1. The Contractor shall be a "specialist", who is regularly engaged in the type of work specified herein. Award will be made only to a bidder who can provide satisfactory evidence that he has the technical ability, experience, tools, personnel and financial resources to successfully complete the project as specified herein. The Contractor shall have an experience base of at least five (5) years for installation of equipment and related wiring/cabling similar to those proposed on this project.

2. The Contractor shall be registered and certified with the manufacturer of the voice and data end-to-end solution, and shall be capable of providing the required end-to-end solution warranty.

3. The Contractor shall engage experienced testing technicians for the purpose of testing the cabling systems. If requested by the Owner, the Contractor shall submit qualifications of the cable testing technician(s) for Owner review and acceptance.

4. The Contractor shall be licensed and bonded in the State of Washington.

C. Manufacturer Qualifications: Engage firms experienced in manufacturing components and materials listed and labeled under the applicable TIA/EIA standards (accepted, proposed or draft).

D. Installation, equipment and materials shall be in accordance with all applicable codes, standards and regulations; including the latest editions and addenda of the following:

1. National Electrical Code (NEC), ANSI/NFPA 70, adopted and amended by RCW 19.28, WAC 296-46B and WAC 296-46B-800: Laws, rules and regulations for installing network cabling and related components and equipment.
2. ANSI/NECA/BICSI 568-2020 – Installing Commercial Building Telecommunications Cabling.
3. ANSI/TIA/EIA 568.0-E – Generic Customer-Owned Telecommunications Networks.
4. ANSI/TIA/EIA 568.1-E – Commercial Building Telecommunications Cabling Standard.
5. ANSI/TIA/EIA 568.2-D – Balanced Twisted Pair Telecommunications Cabling System Standard.
6. ANSI/TIA/EIA 569-E – Telecommunications Pathways and Spaces.
7. ANSI/TIA/EIA 606-C – Administration Standard for Commercial Telecommunications Infrastructure.
8. ANSI/TIA/EIA 607-D – Commercial Building Grounding and Bonding Requirements for Telecommunications.

PART 2 PRODUCTS

2.01 GENERAL

A. Coordinate the features of materials and equipment so they form an integrated system. Match components for optimum performance and appearance.

B. Horizontal cabling infrastructure shall be selected and constructed as a complete end-to-end solution by Amp, no substitutions, to match existing.

C. Unless sizes and/or quantities are specifically indicated, provide at least 20% spare wiring capacity in all cabinets, panels, cable trays and raceways.

D. All telecommunications equipment, devices, materials, etc. shall be new and installed only if in first class condition.

2.02 VOICE (TELEPHONE) AND DATA (COMPUTER NETWORK) STATION CABLES

A. Voice and data station cable shall be 4 pairs, twisted, #23 AWG solid copper, nominal 100 ohm, Category 6A F/UTP (foiled/unshielded twisted pair) cable, 300 volt rated. Cable shall be tested and certified by the manufacturer at up to 500 MHz and shall provide positive ACR beyond 250 MHz. Cable shall support ANSI X3.263 (100 Mbps),IEEE 802.3 1000Base-T (Gigabit Ethernet), ANSI/TIA/EIA 854 1000Base-TX (Gigabit Ethernet) and IEEE 802.3an 10GBase-T (10 Gigabit Ethernet). Cable shall conform to or exceed ANSI/TIA/EIA568-B.2-1 Category 6A Cabling requirements and ISO/IEC Class E_A cabling requirements. Additionally, the cable shall meet or exceed all the following performance criteria:

		@250 MHz	@500 MHz
1.	Maximum Attenuation (dB/100M):	31.1	45.3
2.	Minimum NEXT (dB):	38.3	33.8
3.	Minimum PSNEXT (dB):	36.3	31.8
4.	Minimum ACR (dB):	7.3	-11.4
5.	Minimum PSACR (dB):	5.3	-13.4
6.	Minimum ACRF (dB):	19.8	13.8
7.	Minimum PSACRF (dB):	16.8	10.8
8.	Minimum TCL (dB):	26.0	---
9.	Minimum RL (dB):	17.3	15.2

B. Cable shall consist of 4 unshielded insulated conductor pairs with an overall foil shield and drain wire. Cable shall not utilize bonded pairs. Cable shall be of a standard round design, with an overall jacket. Jacket shall be blue.

C. Cables shall have a maximum outside diameter of .298 inches.

D. Cable shall be plenum rated, be listed as being resistant to the spread of fire and bear flammability testing ratings as communications cable type CMP.

E. All cables shall be of the same manufacturer, Amp 640 Series, no substitutions, to match existing.

2.03 COPPER CABLE TERMINATION HARDWARE

A. Voice & data station cable patch panels shall be standard foot print (strait), 48 port, 2 rack units in height, with modular jack openings, supplied with un-loaded modular jacks and transparent label holders. Modular jacks shall be type RJ-45, 8-position, non-keyed conforming to T568B specification in ANSI/TIA/EIA-568.2-D standard for shielded category 6A. Patch panels shall provide a continuous ground path for each module.

Panels shall be Amp, no substitution, to match existing. Provide the number of patch panels/ports required plus 30% spare, except minimum as indicated on the drawings.

B. Horizontal cable management panels shall be 1 or 2 rack units in height as indicated, mounted to the front of a standard 19 inch equipment rack.

C. All patch panels, 110 blocks, clips, cable management, etc. shall be of the same manufacturer, Amp, and specifically designed for use together.

2.04 STATION HARDWARE

A. Telecommunications outlets and station hardware shall consist of boxes, faceplates (wallplates), voice receptacles (jacks), data receptacles (jacks), blank inserts, labels, etc. as indicated. Faceplates, receptacles, connectors, etc. shall be heavy duty modular type, of the same manufacturer, Amp SL series, and designed for use together.

B. Voice and data receptacles shall be RJ45 jacks, die-cast metal body, non-keyed with gold plated spring wire contacts and 110 style wire terminations. Jacks shall meet ANSI/TIA/EIA- 568.2-D Standard for shielded Category 6A connecting hardware and be configured in accordance with designation T568B eight position jack pin/pair assignment.

C. Voice and data receptacles for use in floor boxes shall be keystone standard compatible.

D. Faceplates (wallplates) shall be commercial grade, single gang, high impact flame retardant thermoplastic, ivory colored, 4 port, with transparent label windows on top and bottom. Faceplates shall be labeled as directed. Provide blank inserts in all unused ports.

E. Individual telecommunications outlets shall be mounted in flush wall mounted boxes or combination floor boxes, as indicated.

F. Individual telecommunications outlets in new walls and partitions and in existing fire rated walls shall be mounted in boxes. Surface mounted boxes shall be surface metal raceway style to match the surface metal raceways.

G. Telecommunications outlets surface mounted in mechanical, utility, etc. type rooms shall be mounted in steel, single-gang, 2 $^{1}/_{8}$" deep boxes.

2.05 CABLE SUPPORTS

A. Supports for cables run “open” above ceilings and the like shall be wide base type J-hook assemblies. Supports shall be made of galvanized steel and have minimum 2” diameter.

B. Supports for large bundles of cables (more than 50 cables) run open above ceilings, in crawlspaces and the like shall be wide base fabric loop, re-enterable assemblies, Erico Caddy CAT425, or approved equal.

C. Supports for attachment to drop wires shall be capable of minimum 25 lb load capacity.

D. Supports for attachment to T-bar grid will not be allowed.

E. Bundle cables with double sided Velcro straps. Tie-wraps shall not be allowed.

F. Support spacing shall not exceed 5 feet.

2.06 NAMEPLATES AND LABELS

A. Provide labels for the following:

1. Voice and data station cables, at both ends, with the cable ID code.
2. Telecommunications faceplates, with the voice, data cable ID codes.
3. Voice and data cable termination hardware, with the cable ID codes.

B. Nameplates, labels, identification tags, etc. shall utilize identifier formats consistent with the ANSI/TIA/EIA 606-C standard. Submit proposed inscriptions to Owner for approval prior to construction.

C. Font size, color and contrast for all labels shall be in accordance with the ANSI/TIA/EIA 606-C standard.

D. All labels shall be neatly typed or generated with a mechanical labeling device.

E. All labels shall be long lasting and durable, resistant to heat, moisture, solvents, oil, etc.

F. Cable ID code, labeling scheme, etc. will be provided to the Contractor by the Owner and Engineer. Submit a sample of the proposed labels to Owner for approval prior to installation.

2.07 ANCHORS AND FASTENERS

A. Anchors and fasteners used shall be of a type designed for use in the base material to which the item is to be attached. Attach to wood with wood or lag screws, to metal with machine screws or bolts and to concrete with carbon steel wedge or sleeve type expansion anchors or self-drilling metal anchors and machine screws or bolts.

B. Pad and floor mounted equipment shall be secured with suitable hot dipped galvanized steel anchor bolts, washers, hex nuts, etc.

C. Powder actuated fasteners, plastic expansion type anchors, nails and toggle bolts are not permitted.

D. Anchors shall be non-corrosive or have suitable corrosion resistant coatings or treatment.

E. Bolts, nuts, screws and other threaded devices shall have standard threads and heads, unless required for tamper-proof installation.

PART 3 EXECUTION

3.01 DEMOLITION

A. Telecommunications cables indicated as to be removed shall be removed from their point of origin to destination.

B. TELECOMMUNICATIONS CABLES INDICATED AS TO BE REMOVED SHALL BE REMOVED BY QUALIFIED COMMUNICATIONS PERSONNEL, PRIOR TO ANY DEMOLITION WORK. CARE SHALL BE TAKEN TO PROHIBIT DAMAGE TO THE EXISITNG CABLES DURING CONSTRUCTION WORK. DEMOLITION OF TELECOMMUNICATIONS CABLES SHALL NOT BE PERFORMED BY DEMOLITION CONTRACTOR, GENERAL CONTRACTOR OR ELECTRICAL CONTRACTOR PERSONNEL.

C. Where demolition work effects the building tenants and operations, coordinate work with the owner, tenants and respective service providers.

3.02 LOCATIONS

A. Outlets shall be mounted 18 inches to centerline above finished floor unless noted otherwise; except, outlets above counters, etc. shall be mounted 6 inches to centerline above the counter or 3 inches to centerline above the splashboard, whichever is higher.

3.03 COORDINATION OF THE WORK

A. Where work may affect Owners standards or operations, coordinate the work of this Section with Owner's Telecommunications Department.

1. Meet jointly with the Owner's representative and representatives of the Telecommunications Department to exchange information and agree on schedules, and details of equipment arrangements and installation interfaces.
2. Record the agreements reached in these meetings and distribute the records to all participants.
3. Schedule the work to avoid unreasonable disturbance or interruption of Owner’s operations.
4. Adjust the arrangements and locations of equipment and cabling supports in affected rooms and spaces to accommodate and optimize the room or space arrangements.

B. Schedule the work to avoid disturbance or interruption of Owner’s operations in adjacent spaces and access pathways.

3.04 INTERRUPTIONS

A. Telecommunications interruptions, whether to individual equipment or to the entire system, shall not be done without prior approval and scheduling with the Owner. Telecommunications interruptions that affect operation of the existing facility shall not be done during normal working hours. Some working of non-standard hours will be required, without increase in Contract Sum.

B. Telecommunications services may be interrupted during the construction process provided that the facility is not occupied and services are returned prior to return of the building occupants.

C. Reconnection of individual items shall be done 1 at a time.

D. As much as possible, cables and equipment shall be pre-assembled, systems prefabricated and cable pre-installed to minimize the change-over down time.

3.05 WIRES AND CABLES

A. Inspect cable prior to installation to verify that it is identified properly on the reel or box identification label, is of proper gauge, containing correct number of pairs, etc. Note any buckling of the jacket which would indicate possible problems. Damaged cable or any other components failing to meet specification shall not be used in the installation.

B. Telephone/voice and computer/data cables shall be homerun to the Communications Room without splices or taps and terminated in patch panels in an equipment rack.

C. All concealed power limited telecommunications systems cable may be run “open” in accessible ceilings; except, where indicated otherwise and where penetrating through ceilings, floors, walls, draft-stops, etc.

D. "Open" cables shall be bundled and supported from permanent structural members of the building, either directly or indirectly, with suitable hooks. Support spacing shall not exceed 5 feet. Protect “open” cables during installation in ceiling spaces. Cables shall not interfere with the removal of pipes or equipment for maintenance or repair. All "open" cable shall be kept a minimum of 6 inches from pipes, ducts, and other items producing heat. Support “open” cables a minimum of 6 inches above T-bar ceilings. Cables shall be bundled using double sided Velcro straps. Tape and tie-wraps are not approved methods of bundling or

supporting cables.

E. Floor and ceiling penetrations by “open” cables will not be allowed. Provide conduit sleeves, minimum 2" EMT, as required plus a spare (with fire and dust stopping and sealing) where “open” cable passes through floors, walls, partitions, etc.

F. Cable shall be unrolled from reels, or removed from cartons, and installed in a manner which will prevent kinking, crushing or excessive tension on conductors and insulation.

G. Slack cable shall be provided at both ends of the cable and at all major pull points to accommodate future changes to the cabling system. A minimum 10 feet shall be provided in the telecommunications room, coiled above the cable rack. A minimum 12 inches shall be provided at the outlet locations, coiled in the accessible ceiling space, where available, or in the surface mounted raceway system.

H. Cable shall be installed or drawn into the raceway system only after all work of any nature that might cause injury to the cable is completed. The raceway systems shall be complete (including the installation of bushings, grommets, etc.), snaked and cleaned, and approval of the installation is obtained from the Owner and Engineer, before pulling any cable.

I. Telecommunications cable shall be installed without sharp bends (less than 2 inch radius) or pulling tension in excess of 20 pounds.

J. Cable pulling lubricants shall be used to minimize pulling stresses on cable pulled into raceways.

K. All cable is subject to subtle damage that may degrade future performance, if abused during installation. In all cable installation, set reels and use sufficient pulleys and manpower so that cables are not pulled around corners or against material that might cause chafing.

OBSERVATION OF IMPROPER CABLING HANDLING TECHNIQUES MAY CAUSE THE CONSULTANT/ENGINEER AND/OR OWNER TO REQUIRE THE CONTRACTOR TO DISCARD AFFECTED CABLES, INCLUDING ANY OTHERS ALREADY INSTALLED BY THE PERSONNEL FOUND USING INCORRECT PROCEDURE.

L. In general, communications cable cannot tolerate sharp bends or excessive pull tension during installation. Adhere to manufacturers recommended minimum bend radius and maximum pull tension for cables; except, not less than 2 inch bending radius and pulling tension in excess of 20 pounds.

M. Cable lubricants specifically designed for installing communications cable may be used to reduce pulling tension as necessary when pulling cable into conduit. After installation, exposed cable and other surfaces must be cleaned free of lubricant residue. (Ideal Yellow 77 is not approved.) Recommended Products:

1. Twisted-pair cable: Dyna-Blue, American Polywater
2. Optical fiber cable: Optic-Lube, Ideal

N. Replace or rework cables showing evidence of improper handling including stretches, kinks, short radius bends, and over tightened bindings.

O. Replace or rework UTP cables with loosely twisted and over twisted pairs at terminals, and re-terminate UTP cables with sheath removed more than $^{1}/_{2}$ inch.

3.06 PULL STRINGS AND ROPES

A. Provide pull ropes in all below grade telecommunications conduit and duct (with or without cables) and in all cable tray.

B. Provide pull string in all above grade telecommunications conduits (with or without cables), except pull strings shall not be permitted in plenum ceiling spaces.

3.07 CABLING CONFIGURATION

A. Cable installation in the telecommunications closets shall conform to the requirements of the TIA/EIA Standards and the project documents. All cabling shall be routed so as to avoid interference with any other service or system, operation, or maintenance purposes such as access boxes, ventilation mixing boxes, network equipment, access hatches to air filters, switches, electrical outlets, electrical panels and lighting fixtures. Avoid crossing areas horizontally just above or below any riser conduit. Lay and dress cables to allow other cables to enter the conduit/riser without difficulty at a later time by maintaining a working distance from these openings.

B. Cable shall be routed as close as possible to the ceiling, floor, or corners to insure that adequate wall or backboard space is available for current and future equipment and for cable terminations. Cables shall not be supported from existing electrical conduit or other equipment. Minimum bend radius shall be observed.

C. Bundle all similarly routed cables together, and attach by means of support saddles screwed to the backboard, then routed vertically and/or horizontally via "square" corners over a path that will offer minimum obstruction to future installations of equipment, backboards, or other cables. Observe cable bend radius.

D. Cables shall be bundled together by means of Velcro straps. Do not over tighten Velcro straps on station cables. Tie-wraps shall not be used as a means of support or bundling.

3.08 OUTLETS

A. Outlet boxes shall be securely attached to walls or structural/framing members with approved anchors and fasteners. Use of adhesive tape for this purpose shall not be permitted.

3.09 TESTING

A. All testing shall be performed by personnel that are trained and certified in the specific task. The Contractor shall perform end-to-end installation performance tests of the cabling plant. The Contractor shall submit for approval a proposal describing the test procedures, test result forms.

B. The Owner and Engineer shall be notified one week prior to any testing so that the initial testing may be witnessed.

C. The Contractor shall submit three (3) final copies of the test result documentation for all required tests, and provide verification that all cable tests have been completed. Test reports shall be submitted on a CD-ROM and shall include viewing software for viewing the test report files. Documentation shall identify each cable with the designated identification description. Cables that do not meet the minimum standards as specified, at any of the required tests, shall be replaced at the Contractors expense.

D. Provide cable test results in both paper copy and software form (where available) on a CD- ROM; except, for station cables and intra-building voice backbone cables provide only a summary in paper copy and complete test results for individual station cables in software form. The CD-ROM shall include the necessary viewing software for all test reports.

E. Copper Voice/Data Cable Testing:

1. All voice station drop cables shall be tested in accordance with the “permanent link” configuration as defined in ANSI/TIA/EIA 568.1-E. The entire link (termination hardware, jacks, cables, etc.) shall pass all tests to ANSI/TIA/EIA Category 6A specifications and ISO/IEC Class E_A parameters, at up to 90 meters in length.

2. Each wire/pair shall be tested for, minimum:

    a. Wiremap (polarity, pair reversals, continuity, shorts and grounds);
    b. Cable length (record all lengths);
    c. Insertion Loss;
    d. NEXT (near end cross talk);
    e. PSNEXT (power sum NEXT);
    f. ACRN (attenuation/cross-talk ratio – near end);
    g. PSACR-N (power sum ACR – near end);
    h. FEXT (far end crosstalk);
    i. ACRF (attenuation to crosstalk ratio – far end);
    j. PSACRF (power sum ACR – far end);
    k. PSANEXT (power sum alien NEXT);
    l. PSAACRF (power sum alien ACRF);
    m. Propagation delay;
    n. Delay skew;
    o. Return Loss.

3. Test procedures shall be based on ANSI/TIA/EIA 568.1-E and ANSI/TIA/EIA 568.2-D utilizing a commercial UTP cable tester that meets or exceeds the specified accuracy requirements defined as Level IIIe for use with Category 6A and Class E_A cabling systems. Each tester shall be certified as calibrated within three (3) months of testing.

4. Test results which pass within the margin of error of the tester shall not be acceptable. In the event that a cable passes the test within the margin of error, the Contractor shall determine problem(s) and make corrections as required (including replacement of the cable and/or other components if necessary) at Contractor's expense without increase in Contract Sum. After correction(s), Contractor shall repeat tests.

F. For all tests not meeting criteria as determined by the Owner and Engineer, Contractor shall determine problem(s) and make corrections as required (including replacement of the cable and/or other components if necessary) at Contractor's expense without increase in Contract Sum. After correction(s), Contractor shall repeat tests.

End of Section 27 05 00

SECTION 28 31 00 FIRE DETECTION & ALARM SYSTEM

PART 1 GENERAL

1.01 APPLICABLE PROVISIONS

A. The General, Supplementary and other Conditions of the Contract, modifications to the General Conditions, the Drawings, and the applicable provisions of the other Divisions are hereby made a part of this Division and all its sections.

1.02 SUMMARY

A. The requirements of this Section and the other Division 26, 27 & 28 Sections apply to all the fire detection and alarm system work.

B. Coordinate fire detection & alarm and security system work with related work shown and specified elsewhere.

C. Provide equipment, devices and all necessary accessories for a modification and expansion of the existing Simplex TrueAlarm fire detection and alarm system. Provide all materials necessary for the proper execution and completion of the Work. Required items not specifically mentioned in the specifications or indicated on the drawings shall be provided as necessary to produce the intended results without increase in contract sum.

D. Remove existing fire detection & alarm system devices, raceway, cables, panels, etc. as indicated. Reconnect existing circuits as required to ensure proper operation of the system.

E. Provide all necessary programming/re-programming of the existing fire alarm control panel to facilitate the demolition, construction and addition of devices as required.

F. In the event that any item is not available exactly as specified, the Contractor shall so notify the Owner in writing as early as possible to allow ample time for an alternate item to be selected without delay to the project.

1.03 SPECIAL AREAS

A. Ceiling spaces throughout the entire facility are an air handling plenum. All cables, devices, connections, etc. shall be plenum rated where installed above the ceiling.

1.04 PLAN REVIEW AND PERMITS

A. The Contractor shall submit complete sets of fire alarm system submittals as required to the Bellingham Fire Department for approval and pay the plan review fees.

B. The Contractor shall arrange for inspections and pay for all required licenses, permits, inspections, plan review fees and any other fees.

C. All necessary permits and approvals shall be obtained prior to the start of construction.

1.05 APPROVED EQUIPMENT SUPPLIER

A. Fire detection and alarm systems and all components shall be Simplex TrueAlarm series (with TrueAlarm Series devices, detectors, modules, etc.). System and all components shall match the existing system in the building. No substitutions.

B. The Engineered System Distributor shall be an authorized factory representative of the specified equipment to ensure proper specification adherence for system programming, operation, final connection, test, turnover, warranty compliance, and after-market service.

1.06 QUALITY ASSURANCE

A. Fire alarm system shall be installed by, or under the direct supervision of, a qualified representative of the manufacturer. Contractor and Contractor's personnel shall be experienced, thoroughly trained and completely familiar with fire alarm systems and the required methods of installation.

B. Programming/re-programming, testing, etc. shall be by a qualified representative of the manufacturer.

C. System shall comply with all requirements of NFPA #72 (National Fire Alarm Code), International Fire Code, International Building Code and ADA.

D. Fire alarm system shall be in accordance with all applicable codes and standards and all requirements of the State of Washington, Whatcom County and the City of Bellingham.

E. System shall comply with the City of Bellingham Fire Protection Development Standards.

1.07 SUBMITTALS

A. Submit complete documentation for the fire alarm system equipment, devices, materials, etc. showing the model number, type, rating, size, style, manufacturer's names, and manufacturer's catalog data sheets for all items. Include data on features, rating, and performance.

B. If requested by the Owner, provide samples of materials for evaluation.

1.08 RECORD DOCUMENTS

A. Submit "as-built" record drawings and operation and maintenance manuals at completion of the project in accordance with the specific submittal requirements listed elsewhere in these Specifications.

B. Provide as-built documentation consistent with the contract documents as required, in AutoCAD Version 2017 .dwg files with as-built notations for all sheets. (Consultant/Engineer will provide construction drawings AutoCAD files to contractor.)

C. As-built drawings shall include the identification numbers for each device on the plans.

PART 2 PRODUCTS

2.01 GENERAL

A. Coordinate the features of materials and equipment so they match the existing system seamlessly.

B. Contractor shall make certain that all materials selected by him, his subcontractors or by his suppliers, conform exactly to requirements of the drawings and specifications. Transmittal of such specifications and drawing information to subcontractors, person manufacturing and/or supplying materials to the project, and rigid adherence thereto, is the Contractor's responsibility.

C. All equipment, devices, fixtures, materials, etc. shall be UL (Underwriter's Laboratories, Inc.) listed, labeled and approved for the service intended.

D. All equipment, devices, fixtures, materials, etc. shall be new and installed only if in first class condition, unless specifically designated as existing.

2.02 SYSTEM DESCRIPTION

A. The existing system is an automatic, microprocessor based, addressable technology, fully supervised, Class B system; complete with all necessary hardware, software and memory specifically tailored for this installation.

2.03 PROGRAMMING/RE-PROGRAMMING

A. Existing alarm operations programmed into the existing Fire Alarm Panel shall remain unchanged.

B. Alarm operations and user operations shall be programmed into the Fire Alarm Panel based on applicable codes and Owner requirements.

2.04 GRAPHIC MAP

A. Two unique fire alarm floor plan graphic maps shall be updated with the new floor plan modifications.

2.05 ADDRESSABLE LOOPS AND CIRCUITS

A. Each device shall have a unique address. The Supplier shall program each address to a system input zone and correlate to output operation, match existing.

2.06 DEVICES & DETECTORS

A. Remote devices and detectors shall have a microprocessor with non-volatile memory to support its functionality and serviceability. Each shall store as required the device serial number, device address, device type, number of alarms and troubles, time and date of last alarm, amount of environmental compensation left/used, last maintenance date, current detector sensitivity values, diagnostic information (trouble codes) and algorithms required to process censor data and perform communications with the loop controller.

B. Devices, modules and detectors shall be Simplex TrueAlarm Series, no substitutions.

C. Each device shall be capable of electronic addressing, either automatically or application programmed assigned, to support physical/electrical mapping and supervision by location. Setting a device's address by physical means (e.g. DIP and rotary switches) will not be acceptable.

D. Devices and detectors shall be capable of full digital communication. Maximum total response time for devices and detectors changing state shall be 0.5 seconds.

E. Smoke Detectors

1. Smoke detectors shall be intelligent type, photoelectric, utilizing light scattering to sense changes in air samples from its surroundings with an integral factory assembled microprocessor. The microprocessor shall dynamically examine values from the sensor and initiate an alarm based on the analysis of data. The percent smoke obscuration alarm set point shall be field selectable.

2. Smoke detectors shall be capable of transmitting pre-alarm and alarm signals in addition to the normal, trouble and need cleaning information. It shall be possible to program control panel activity to each level. The detectors shall continually monitor any changes in sensitivity due to the environmental affects of dirt, smoke, temperature, aging and humidity with an environmental compensation algorithm which identifies and sets ambient "Environmental Thresholds" approximately six times an hour. The process shall employ digital compensation to adapt the detector to both 24 hour long term and 4 hour short term environmental changes. The microprocessor shall monitor the environmental compensation value and alert the system operator when the detector approaches 80%

and 100% of the allowable environmental compensation value. Differential sensing algorithms shall maintain a constant differential between selected detector sensitivity and the “learned” base line sensitivity. The base line sensitivity information shall be updated and permanently stored at the detector approximately once every hour. The information shall be stored in the microprocessor and be transferred to the analog loop controller for retrieval using a portable program analyzer.

3. Detectors shall be 2 piece, consisting of a base and separate plug-in head.

2.07 SIGNALING DEVICES

A. Fire alarm horns shall be 24 volt DC, multi-tap and set as required to provide the minimum acceptable or code required sound level.

B. Fire alarm strobes shall be 24 volt DC, minimum as indicated (except as required by ADA or the authority having jurisdiction to provide the minimum required intensity level throughout the space) with clear polycarbonate lens and FIRE lettering. Strobes throughout a space shall be synchronized.

C. Fire alarm horn/strobes shall be as above; except, combined into a single assembly.

D. Sprinkler system alarm bell shall be vibrating type, 120 volt, semi-flush mounted, weatherproof, of sufficient loudness, and shall have a distinctly different sound than the fire alarm system alarms. Provide red finish on bells, mounting plates, and surface mounted boxes.

E. Provide red finish on mounting plates, and surface mounted boxes where required.

F. Devices shall be Simplex QuickAlert series, no substitutions, to match existing.

2.08 WIRE AND CABLE

A. All wire shall be color coded to match existing. Verify the existing color coding scheme and match the existing. Color coding shall be consistent throughout the building.

B. Detection circuits cable:

1. Detection circuit cable run in raceways shall be single conductor solid copper with 600 volt type TFFN insulation.
2. The minimum conductor size shall be #16 AWG.

C. Alarm circuits cable:

1. Alarm circuit cable run in raceways shall be single conductor stranded copper with 600 volt type THHN/THWN insulation.
2. The minimum conductor size shall be #14 AWG.

2.09 BOXES

A. Device, junction, etc. boxes for fire alarm systems other than the surface raceway type shall be substantially red in color, both inside and outside.

2.10 CONNECTIONS AND TERMINATIONS

A. Wiring shall be installed from device to device without splices or taps in fire alarm circuit cable. “T” taps will not be allowed.

B. Pull wiring through junction, pull, etc. boxes and conduit fittings to devices where possible. Multiple splices,

connections, etc. from a single location shall be done in terminal boxes with suitable terminal blocks. Multiple splices, connections, etc. at a single location will not be allowed with “wire nuts”.

C. Cable ties shall be utilized in panels, etc. to group and support conductors. All cable shall be fanned-out to terminals and identified by labels.

PART 3 EXECUTION

3.01 DEMOLITION

A. Fire detection & alarm system devices indicated as to be removed and associated cables shall be removed entirely, from their point of origin to destination.

B. Fire detection & alarm system devices indicated as to be removed and re-installed or relocated, shall be pulled back and coiled in a neat and safe manner, by qualified personnel, prior to any demolition work. Care shall be taken to prohibit damage to the cables during construction. . Demolition of fire detection & alarm cables shall not be performed by demolition contractor or general contractor personnel.

C. Where demolition work effects the building tenants and operations, coordinate work with the owner, tenants and respective service providers.

3.02 INSTALLATION

A. Installation of the fire alarm system and its components shall be done by, or under the direct supervision of, a factory trained authorized representative of the manufacturer.

B. Install, connect and test smoke detector bases and initiating circuits prior to installation of smoke detector heads. Unless required by the authority having jurisdiction for protection during construction, do not install smoke detector heads until after construction clean-up by all trades has been completed. Detectors that have been installed prior to final clean-up shall be cleaned and/or replaced as required after final clean-up.

3.03 LOCATIONS

A. Locations and mounting heights of equipment, devices, etc. shall be consistent, and in accordance with the requirements of NFPA, ADA and the authority having jurisdiction.

B. Locate fire alarm devices (horns, strobes, etc.) 80 inches to centerline above finished floor or 6 inches below ceiling, whichever is lower, 6 inches from door casings, corners, etc.; except, on center in spaces narrower than 12 inches.

C. Unless noted or indicated otherwise, smoke and heat detectors shall be ceiling mounted. In sloped ceiling areas, detectors shall be located within 3 feet of the peak,measured horizontally.

D. Locate addressable smoke detectors a minimum of 36” from electronic fluorescent ballasts.

E. Locate addressable smoke detectors a minimum of 36” from air supply grills.

F. Wall mounted smoke and heat detectors shall be located between 4 inches and 12 inches down from the ceiling to the top of the detector.

G. Prior to rough-in, the Contractor shall mark or otherwise show the location of all equipment and devices, and the proposed routing of raceways. Obtain specific approval for the location of each from the Owner, Architect and Engineer before rough-in.

3.04 INTERRUPTIONS

A. Fire alarm systems interruptions, whether to individual equipment or to the entire system, shall not be done without prior approval and scheduling with the Owner 48 hours in advance.

B. Fire alarm systems interruptions that affect operation of the existing facility (unless building is unoccupied and permission is obtained from the Owner) shall not be done during normal working hours. Some working of non-standard hours will be required, without increase in Contract Sum.

C. Fire alarm systems may be interrupted during the construction process provided that the facility is not occupied and services are returned prior to return of the building occupants. Contractor shall provide a fire watch as required when the fire alarm system is interrupted, without increase in Contract Sum.

D. Reconnection of individual items shall be done 1 at a time.

E. As much as possible, cables and equipment shall be pre-assembled, systems prefabricated and cable pre-installed to minimize the change-over down time.

3.05 WIRES AND CABLES

A. Inspect cable prior to installation to verify that it is identified properly on the reel or box identification label and that it is of proper gauge, containing correct number of pairs, etc. Note any buckling of the jacket which would indicate possible problems. Damaged cable or any other components failing to meet specification shall not be used in the installation.

B. All exposed cable shall be run in the raceway system, except where specifically approved otherwise. “Open” wiring will not be allowed.

C. Cable shall be installed or drawn into the raceway system only after all work of any nature that might cause injury to the cable is completed. The raceway systems shall be complete (including the installation of bushings, grommets, etc.), snaked and cleaned, and approval of the installation is obtained from the Owner and Engineer, before pulling any cable.

D. Cable pulling lubricants shall be used to minimize pulling stresses on cable pulled into raceways.

3.06 TESTING

A. Testing of the fire detection and alarm system shall be done by a qualified representative of the manufacturer; who, after completion, shall submit a letter that he has tested the system and found it acceptable in all respects.

B. Testing of the systems and all components shall be in accordance with the requirements of NFPA 72 and/or the authority having jurisdiction.

C. Contractor shall notify Owner at least 48 hours in advance of readiness to conduct any tests. The actual time and date of tests shall be acceptable to the Owner and the Contractor.

D. For all tests not meeting criteria as determined by the Owner and Engineer, Contractor shall determine problem(s) and make corrections as required (including replacement of the cable and/or other components if necessary) at Contractor’s expense without increase in Contract Sum. After correction(s), Contractor shall repeat tests.

End of Section 28 31 00