

CITY OF BETHEL

City Council Meeting Agenda, July 9, 2024 – 6:30 PM

Website: <https://www.cityofbethel.org/council>

Location: Council Chambers, City Hall, 300 Chief Eddie Hoffman Highway, Bethel

Council Members: Mayor Mark Springer, Vice-Mayor Sophie Swope, Rose Henderson, Beth Hessler, Patrick Snow, Teresa Keller, Mikayla Miller

Zoom Meeting Link: <https://us06web.zoom.us/j/4888456188?pwd=bkN1dGI4MHpGZ1kwOUVYWU5kd0xhZz09>

Zoom Meeting ID: 488 845 6188

Zoom Meeting Passcode: 13871

Zoom Meeting Conference Line Numbers: 833 548 0276 US Toll-free

833 548 0282 US Toll-free

877 853 5257 US Toll-free

888 475 4499 US Toll-free



1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

4. PEOPLE TO BE HEARD – FIVE MINUTES PER PERSON

- 4.1. *Written Public Comments can be submitted by opening your phone camera and hovering over this URL code. The link to the submission form will appear. You may also go to www.cityofbethel.org.*



5. APPROVAL OF CONSENT AGENDA AND REGULAR AGENDA

6. APPROVAL OF MEETING MINUTES

- 6.1. *June 11, 2024 Regular City Council Meeting

7. REPORTS OF STANDING COMMITTEES

- 7.1. Committee/Commission Agendas And Draft Meeting Minutes

8. SPECIAL ORDER OF BUSINESS

- 8.1. Legislative Update From Representative CJ McCormick (Mayor Springer)

9. UNFINISHED BUSINESS

10. NEW BUSINESS

- 10.1. *Introduction Of Budget Modification 24-04 (a), Amending The Fiscal Year 2025 Operating Budget (Acting City Manager Strickler)
- 10.2. *Introduction Of Budget Ordinance 24-05 (a), Amending The City's Capital Budget Allocation For Fiscal Year 2025 (Acting City Manager Strickler)
- 10.3. *Introduction Of Ordinance 24-06: Amending Bethel Municipal Code 2.60 Committees, Commissions, And AD HOC Committees To Reduce Voting Members Under Special Circumstances

Posted July 3, 2024 at AC Co., Swanson's, City Hall, and the Post Office.

Kevin Morgan, Deputy City Clerk

City Clerk's Office Contact Information: Email cityclerk@cityofbethel.net Phone 907-543-1384

Items noted with an asterisk (*) are consent agenda items, unless removed from the consent agenda they are approved upon the approval of the agenda. Ordinances introduced at this meeting may be set for public hearing at the next regular meeting.

The Council may by unanimous consent, after 12:00 AM Fix the Time to Which To Adjourn until the following day at 6:30 PM

(Council Member Snow)

10.4. *AM 24-18 Negotiate And Execute A Contract Amendment With Alaska Communications For Additional Remote IT Services (Acting City Manager Strickler)

10.5. AM 24-19 Authorizing the Administration To Sign Statement Of Non Objection For KNIK Dock, Seawall Expansion (Port Commission)

11. REPORTS

11.1. Mayor's Report

11.2. City Manager's Report

11.3. Clerk's Report

12. COUNCIL MEMBER COMMENTS

13. EXECUTIVE SESSION

13.1. In Accordance With AS 44.62.310.(C)(1) Matters, The Immediate Knowledge Of Which Would Clearly Have An Adverse Effect Upon The Finances Of The Public Entity; And (3) Matters Which By Law, Municipal Charter, Or Ordinance Are Required To Be Confidential Christopher Engebretsen, ET AL. vs City of Bethel (Acting City Manager Strickler)

14. ADJOURNMENT

Posted July 3, 2024 at AC Co., Swanson's, City Hall, and the Post Office.

Kevin Morgan, Deputy City Clerk

City Clerk's Office Contact Information: Email cityclerk@cityofbethel.net Phone 907-543-1384

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The Council may by unanimous consent, after 12:00 AM Fix the Time to Which To Adjourn until the following day at 6:30 PM

1. CALL TO ORDER

A Regular Meeting of the Bethel City Council was held on June 11, 2024 at 6:30 p.m., in the Council Chambers, Bethel, Alaska.

Mayor Springer called the meeting to order at 6:30 p.m.

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

Comprising a quorum of the Council, the following members were present:
Mayor Mark Springer City Council Member Rose Henderson City Council Member Mikayla Miller City Council Member Teresa Keller Vice-Mayor Sophie Swope City Council Member Patrick Snow
Members Absent:
City Council Member Beth Hessler
Also in attendance were the following:
Acting City Manager Arnold, City Clerk Lori Strickler, City Attorney Libby Bakalar (telephonically)

4. PEOPLE TO BE HEARD – Five minutes per person

Tiffany Tony, Bethel Resident- Presented concerns about the increased traffic into Tundra Ridge from the new state road connecting the airport area to Tundra Ridge. Suggested the City consider adding stop signs to slow the traffic through Tundra Ridge.

Item 4.1. - *Written Public Comments can be submitted by opening your phone camera and hovering over this URL code. The link to the submission form will appear. You may also go to www.cityofbethel.org.*



No Written Comments Submitted.

5. APPROVAL OF CONSENT AGENDA AND REGULAR AGENDA

Motion to approve the agenda.

Moved by:	Rose Henderson
Seconded by:	Mikayla Miller
In favor:	Mark Springer, Rose Henderson, Patrick Snow, Sophie Swope, Teresa Keller, Mikayla Miller
Opposed:	None
Results:	Motion Carries

6. APPROVAL OF MEETING MINUTES

Item 6.1. - *5-28-2024 Regular City Council Meeting
Passed on the consent agenda.

7. REPORTS OF STANDING COMMITTEES

Item 7.1. - Committee/Commission Agendas And Draft Meeting Minutes
Port Commission, Council Member Henderson- A meeting has not been held.

Planning Commission- No one present to report.

Community Action Grant Committee, Council Member Keller- Meetings are still on hold.

Community Parks and Recreation Committee, Vice-Mayor Swope- Discussed the expansion of the pool and creation of a Parks and Recreation Department. Selected finalist for the Kid's vote Program for the Harbor Park Sign.

Finance Committee, Council Member Snow- A meeting has not been held since the last city council meeting.

Public Works Committee, Mayor Springer- No meeting since last meeting.

Public Safety and Transportation Commission, Council Member Miller- Discussed: temporarily removing the requirement for cabs to renew their permits due to lack of personnel to process them; and Community outreach programs such as Craft with a cop, shop with a hero, and a national night out.

8. SPECIAL ORDER OF BUSINESS

9. UNFINISHED BUSINESS

Item 9.1. - Public Hearing Of Ordinance 24-04: Adoption Of The Annual Operating Budget For Fiscal Year 2025, July 1, 2024-June 30, 2025, And Appropriating Funds to Carry Out Said Budget (Acting City Manager Arnold)

No one provided public comments on the ordinance.

Motion to adopt Ordinance 24-04.

Moved by:	Rose Henderson
Seconded by:	Mikayla Miller
In favor:	Mark Springer, Rose Henderson, Patrick Snow, Sophie Swope, Teresa Keller, Mikayla Miller
Opposed:	None
Results:	Motion Carries

Motion to amend to strike \$60,000 under 100-53-6311 Finance Department Auditing Expenses and insert \$205,500.

Moved by:	Sophie Swope
Seconded by:	Teresa Keller
In favor:	Mark Springer, Rose Henderson, Patrick Snow, Sophie Swope, Teresa Keller, Mikayla Miller
Opposed:	None
Results:	Motion Carries

Item 9.2. - Public Hearing Of Ordinance 24-05: Adoption Of The Capital Improvement Budget For Fiscal Year 2025, July 1, 2024-June 30, 2025 And Appropriating Funds To Carry Out Said Budget (Acting City Manager Arnold)

Mayor Springer opened the Public Hearing.

No one present to be heard.

Mayor Springer closed the Public Hearing.

Motion to adopt Ordinance 24-05.

Moved by:	Rose Henderson
Seconded by:	Mikayla Miller
In favor:	Mark Springer, Rose Henderson, Patrick Snow, Sophie Swope, Teresa Keller, Mikayla Miller
Opposed:	None
Results:	Motion Carries

Motion to amend Capital Budget FY25 to include \$190,000 to expenditures for Lift Station Project match to Senator Lisa Mukowski's office.

Motion to amend Capital Budget FY25 to include \$213,392 to expenditures for Transit Grant.

Motion to amend Capital Budget FY25 to include \$89,335 to expenditures for Port Wall Tasks 3-5 from Municipal Dock Combined Cash Accounts.

Motion to amend Capital Budget FY25 to include \$109,901.50 to expenditures for Police Department Information Technology from Police Department Capital Expenditures to Alaska Communications.

Moved by:	Rose Henderson
Seconded by:	Mikayla Miller
In favor:	Mark Springer, Rose Henderson, Patrick Snow, Sophie Swope, Teresa Keller, Mikayla Miller
Opposed:	None
Results:	Motion Carries

10. NEW BUSINESS

Item 10.1. - *AM 24-13: Appointment Of Committee And Commission Members For A Term Of Three Years (Mayor Springer)

Passed on the consent agenda.

Item 10.2. - AM 24-14: Authorizing The Sole Source Procurement In Accordance With BMC 4.20.250, Purchase Of EK35 Emulsifier To Bind Road Material From Polar Supply, The Only Authorized Distributor In Alaska (Acting City Manager Arnold)

Motion to approve AM 24-14.

Moved by:	Rose Henderson
Seconded by:	Sophie Swope
In favor:	Mark Springer, Rose Henderson, Patrick Snow, Sophie Swope, Teresa Keller, Mikayla Miller
Opposed:	None
Results:	Motion Carries

Item 10.3. - *AM 24-15: Acting City Manager To Renew Contract With Carmen Jackson CPA, LLC For Accounting Services With New Professional Fee Schedule To Exclude Project Management Services Per BMC 4.20.410 (G) (Acting City Manager Arnold)

Passed on the consent agenda.

11. REPORTS

Item 11.1. - Mayor's Report

Item 11.2. - City Manager's Report

Item 11.3. - Clerk's Report

12. COUNCIL MEMBER COMMENTS

Mayor Springer- Wished everyone a Happy Pride Month. Provided condolences to the Aloysius family.

Vice-Mayor Sophie Swope- Encouraged people driving recreational/ATV vehicles to be conscientious of children playing outside.

Council Member Henderson- Encouraged people to get out and enjoy the weather. Reminded the drivers of four-wheelers that they still need to follow the law. Good luck to all the subsistence fishers

Council Member Snow- No comment.

Council Member Keller- No comment.

Council Member Miller- Congratulations to Dorothy White for being appointed to the Public Safety and Transportation Commission as Ex Officio.

13. EXECUTIVE SESSION

14. ADJOURNMENT

Main Motion: Adjournment.

Moved by:	Sophie Swope
Seconded by:	Mikayla Miller
In favor:	Mark Springer, Rose Henderson, Patrick Snow, Sophie Swope, Teresa Keller, Mikayla Miller
Opposed:	None
Results:	Motion Carries

Meeting ended at 7:25 p.m.

Mark Springer, Mayor

ATTEST:

Lori Strickler, City Clerk



CITY OF BETHEL
PUBLIC WORKS COMMITTEE
WEDNESDAY, JULY 17, 2024, 5:30 PM

LOCATION: 300 CHIEF EDDIE HOFFMAN HIGHWAY, BETHEL, ALASKA

JOIN ZOOM MEETING: <https://us06web.zoom.us/j/82789796061?pwd=eFpYa3hBcU1vZkpQME1Fd1p2UXc0dz09>

MEETING ID: 827 8979 6061

PASSCODE: 044846

888 475 4499 US TOLL-FREE 833 548 0276 US TOLL-FREE

833 548 0282 US TOLL-FREE 877 853 5257 US TOLL-FREE

MEMBERS

Ryan Butte, Juan Delgado, Mark Springer- Council Rep. John Llyod

STAFF

Ex-Officio Members: Bill Arnold, Public Works Director

pwadmin@cityofbethel.net

907-543-3110

I. CALL TO ORDER

II. ROLL CALL

III. PEOPLE TO BE HEARD – FIVE MINUTES PER PERSON

- A. Please submit written public comments to pwadmin@cityofbethel.net by 4:00 p.m. the day of the meeting.

IV. APPROVAL OF AGENDA

V. APPROVAL OF MEETING MINUTES

VI. UNFINISHED BUSINESS

- A. Evaluation Of Committees 2024 Goals, Tasks And Priorities
- B. Review of Committee Duties and Responsibilities and Determination of Committee Topics of Interest for 2024

VII. NEW BUSINESS

- A. Commission Consideration Of Draft Ordinance to Reduce The Frequency Of Meetings For Committees and Commissions (Administration)
- B. Commission Consideration of Draft Ordinance Modifying Membership Requirements From Seven To Five Temporarily When Less Than Five Members Are Appointed (Administration)

VIII. EX OFFICIO REPORT

IX. MEMBER COMMENTS

X. ADJOURNMENT

Posted <<DATE>> at City Hall, AC Co., Swanson's, and the Post Office.

Ex-Officio Staff



CITY OF BETHEL

COMMUNITY PARKS AND RECREATION COMMITTEE

MONDAY, JULY 8, 2024, 6:00 PM

LOCATION: 300 CHIEF EDDIE HOFFMAN HIGHWAY, BETHEL, ALASKA

JOIN ZOOM MEETING:

[HTTPS://US06WEB.ZOOM.US/J/89727002271?PWD=BVJWYWFWNWUZEGFSAU80UVZCYWVXQT09](https://us06web.zoom.us/j/89727002271?pwd=BVJWYWFWNWUZEGFSAU80UVZCYWVXQT09)

MEETING ID: 897 2700 2271

PASSCODE: 924366

PHONE NUMBERS: 888 475 4499 US TOLL-FREE

833 548 0276 US TOLL-FREE

833 548 0282 US TOLL-FREE

877 853 5257 US TOLL-FREE

MEMBERS

Brian Lefferts, Chair
Sophie Swope, Council Rep.
Brian Jackson
Michelle DeWitt
Alternate 2-Vacant

Beverly Hoffman, Vice-Chair
Kathy Hanson
Jessica Pew
Sean Glasheen, Alternate 1

STAFF

Ex-Officos: Jason Spann, Facility Maint. Foreman
Email: pwadmin@cityofbethel.net Phone: 907-543-3110

I. CALL TO ORDER

II. ROLL CALL

III. PEOPLE TO BE HEARD – FIVE MINUTES PER PERSON

- A. Please submit written public comments to pwadmin@cityofbethel.net by 4:00 p.m. the day of the meeting.

IV. APPROVAL OF AGENDA

V. APPROVAL OF MEETING MINUTES

VI. UNFINISHED BUSINESS

- A. Lifeguard Shortage
B. LKSD Swim Team Pool Rental Fees
C. Community Center Construction Project ** NO UPDATES-Just a Placeholder*
D. Cordova Pool energy Audit Report

VII. NEW BUSINESS

- A. Boardwalk Maintenance Plan (City Administration)
B. Consideration of Draft Ordinance Modifying Membership Requirements Under Special Circumstances (City Administration)
C. Consideration of Draft Ordinance Modifying The Monthly Meeting Requirements for Committees And Commissions (City Administration)

VIII. EX OFFICIO REPORT

- A. Department Head Reports June 2024

Posted <<DATE>> at City Hall, AC Co., Swanson's, and the Post Office.

Ex-Officio Staff

IX. MEMBER COMMENTS

X. ADJOURNMENT

Posted <<DATE>> at City Hall, AC Co., Swanson's, and the Post Office.

Ex-Officio Staff

Introduced by: Acting City Manager Strickler
Introduction Date: July 9, 2024
Public Hearing: July 23, 2024
Action:
Vote:

CITY OF BETHEL, ALASKA

ORDINANCE #24-04 (a)

AN ORDINANCE BY THE BETHEL CITY COUNCIL AMENDING THE ADOPTION ANNUAL OPERATING BUDGET FOR FISCAL YEAR 2025, JULY 1, 2024-JUNE 30, 2025

BE IT ORDAINED by the City Council of Bethel, Alaska, as follows:

SECTION 1. Classification. This is a noncodified ordinance amending the City of Bethel Annual Operating Budget for Fiscal Year 2025.

SECTION 2. Amendment. The adopted Fiscal Year 2025 Annual Operating Budget is amended as follows:

Whereas, the City has modified the operations of the Information Technology Department after the resignation of both the IT Director, and IT Technician to rely more heavily on remote service;

Whereas, coupled with the ongoing remote support, the City finds it necessary to provide onsite support to the staff and contractors, the monthly charges for the onsite services is \$9,976, with an annual expected cost of \$119,712, with an additional, \$13,000 for lodging expenses;

A-1 Information Technology Department				
Line Item	Description	Approved Appropriations	Proposed Amendment	Proposed Total Appropriations
100-55	IT Services Director	\$115,500	0	0
100-55	IT Technician	\$70,140	0	0
100-55	Benefits/Overtime	\$116,420	0	0
100-55-6320	Other Pro Fees	\$85,000	\$119,712	\$204,712
General Fund Change Summary:	Reduction in personnel expenses totaling \$302,060. Increase to operational expenses totaling \$133,512. Gain to the undesignated fund balance is \$168,548.			

Whereas, Administration was informed on June 26, 2024, that the radio equipment used for our police and fire emergency response, located on the KYUK tower, will be temporarily relocated to a temporary tower while the new KYUK tower is constructed;

Whereas, considering this transition has significant reliance on seamless connectivity to ensure the shortest possible break in frequency for our first responders, Administration seeks to have our radio contractor ProComm on site during the relocation of the equipment;

Whereas, additionally ProComm has recommended a few alterations to the equipment make-up and necessary supplies to support the relocation;

Whereas, the amendment covers expected expenses for the initial transfer to the temporary site, and the relocation from the temporary site, to the permanent site;

Whereas, the City is quickly progressing to owning our own tower, which we anticipate being completed in the fall, once complete, the equipment currently located at the KYUK location, will then be moved to the long term, city owned site.

A-2 Community Services				
Line Item	Description	Approved Appropriations	Proposed Amendment	Proposed Total Appropriations
100-61-6335	Other Purchased Services	\$85,000	\$14,000	\$99,000
General Fund Change Summary:	Increase to operational expenses totaling \$14,000 Gain to the undesignated fund balance is \$182,348.			

SECTION 4. Effective Date. This ordinance shall become effective upon the passage by the Bethel City Council.

NOW THEREFORE BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF BETHEL, ALASKA, that the Fiscal Year 2025 operating budget is adopted for a period of one year, from July 1, 2024, through June 30, 2025.

ENACTED THIS 11 DAY OF JUNE 2024, BY A VOTE OF 7 IN FAVOR AND 0 OPPOSED.

Mark Springer, Mayor

ATTEST:

Lori Strickler, City Clerk

ProComm Alaska LLC

2100 E. 63rd Ave
Anchorage AK 99507

**Quote: 7048****Date:** 6/28/2024**Prepared by:** PCA Account**Phone:****Email:****Prepared for:**

Bethel Police Department
PO Box 809
Bethel, AK 99559

Contact:

Chris Winger

cwinger@cityofbethel.net

ShipTo:

Bethel Police Dept, State Hwy
220 State Hwy
Bethel AK 99559

Equipment

Item Id	Description	Qty	Each	Total
ANT150F2	Antenna, fixed, 148-174MHz, 2.5dB, omni, N-Female jumper, N-Male terminated, fiberglass	2	\$0.00	\$0.00
s-200	Stand-Off Bracket, 2-foot, includes mounting hardware for up to 3.5in OD tower leg (Tessco#477944)	2	\$0.00	\$0.00
LDF4-50A	Cable, heliax, 50ohm, 1/2" foam (between 2 runs)	160	\$0.00	\$0.00
L4TNM-PSA	Connector, N-Male, positive stop, captivated, 1/2" foam	4	\$0.00	\$0.00
L4TNF-PSA	Connector, N-Female, positive stop, captivated, 1/2" foam	2	\$0.00	\$0.00
20573	Surge protection, flange arrestor, N-Female	2	\$0.00	\$0.00
313411	SureGround Grounding Kit, (1/2")	2	\$0.00	\$0.00
LMR400-500	Cable, LMR400, 50ohm, low loss, 3/8"	40	\$0.00	\$0.00
EZ-400-NMH-X	Connector, N-Male, captivated pin, for LMR400	3	\$0.00	\$0.00
EZ400-NMH-RA	Connector, N-Male, ezfit, right angle, for LMR400	3	\$0.00	\$0.00
AUF-6-GRN	Wire, #6 , polar flex, green	10	\$0.00	\$0.00
54105	Lug, #6 cable, 1-hole, 1/4" bolt, short barrel	6	\$0.00	\$0.00
SR122	Cushion insert, 4", 2-hole, 1/2" coax, for use with B400 boot	1	\$0.00	\$0.00
SR124	Cushion insert, 4", 4-hole, 1/2" coax, for use with B400 boot	1	\$0.00	\$0.00
Shop Supplies	Misc. Shop Supplies: 1/4" hardware, TY wraps, etc	1	\$0.00	\$0.00
Delivery	Charge for Delivery (shipping to Bethel)	1	\$0.00	\$0.00
Travel:Alaska Airlines	Alaska Airlines Flight: tickets: RT 1 tech Anch - Bethel	1	\$0.00	\$0.00
Fixed Price Billing	Total for all Parts, shipping, logistics and lodging.	1	\$7,556.43	\$7,556.43
Subtotal Totals				\$7,556.43

Labor

Item Id	Description	Qty	Each	Total
Labor-Engineering	Engineering Services	1	\$250.00	\$250.00
Labor-Basic-RT	Labor -Basic Service (staging and Shipping)	2	\$165.00	\$330.00
Labor-Basic-TT	Labor-Travel Time	3	\$165.00	\$495.00
Labor-Basic-RT	Labor -Basic Service	5	\$165.00	\$825.00
Labor-Basic-OT	Labor- Basic Overtime	3	\$247.50	\$742.50
Labor-Basic-TT-OT	Travel Time Over time-Basic Service Level	2.5	\$247.50	\$618.75
Subtotal Totals				\$3,261.25

Discount : \$0.00
Total Net Sell : \$10,817.68

This quote is estimated and will be considered time and Materials, actual charges to be applied.
Charges may increase or decrease depending on shipping time, and the amount of hours to be worked.

This quote covers one PCA technician to travel to Bethel, and install antennas at the temporary tower being provided by KYUK! South Central communications, who is doing the work for KYUK, will be responsible for mounting antennas to the temporary tower, and their labor is NOT included on this quote.

All parts are instock at Procomm's Vendor locations, and will need to be ordered ASAP for PCA to meet the deadline of July 11th.

Bethel PD to provide transportation for PCA technician.

Due to worldwide supply chain interruptions, all Vendors are changing quote norms. As a result, PCA cannot guarantee pricing and availability. Please be advised price and lead times are ESTIMATE ONLY. Actual price at the time of order may vary.

Date: 6/28/2024

Accepted by:

**CITY OF BETHEL AND ALASKA COMMUNICATIONS
PROFESSIONAL SERVICES AGREEMENT
FOR
REMOTE TECHNICAL SUPPORT SERVICES**



THIS AGREEMENT made and entered into this 1st day of July 2020, by and between the CITY OF BETHEL (a municipal corporation) and ALASKA COMMUNICATIONS (a technical support provider).

Section 01 Definition

In this Agreement:

- A. The term "City" means the City of Bethel.
- B. The term "Provider" means Alaska Communications.

Section 02 Employment of Remote Technical Support Provider

The City hereby agrees to engage the Provider and the Provider hereby agrees to perform the services hereafter set forth.

Section 03 Scope of Services

The services to be furnished by the Provider are described in the following attachments:

- Attachment A – Service Description – ConstantlyOn IT
- Attachment B – ConstantlyOn IT Minimum Security Requirements and Client Agreement

Section 04 Term

This Agreement shall be deemed in force as of July 1, 2020 and shall remain in effect until December 31, 2025, unless terminated as hereinafter provided and subject to funds properly appropriated by the Bethel City Council during its annual City budget for IT services. A termination for lack of appropriate funds must comply with Section 8 below.

Section 05 Compensation

A. Subject to the provisions of this Agreement, the City shall pay the Provider a fixed fee each month of \$72 per covered user. ConstantlyOn IT services are provided for a total of 80 end users. User count and monthly recurring charge may be adjusted to a final user count as identified during the Onboarding process. Additionally, there will be a one-time fee of \$5,714.00 for Onboarding services at initiation of services.



B. Except as otherwise provided in this Agreement, the City shall not provide any additional compensation, payment, service or other thing of value to the Provider in connection with performance of Agreement duties. The parties understand and agree that, except as otherwise provided in this section, administrative overhead and other indirect or direct costs the Provider may incur in the performance of its obligations under this Agreement have already been included in computation of the Provider's fee and will not be charged to the City.

C. Total compensation shall not exceed seventy-five thousand dollars (\$75,000) for the first year ending June 30, 2021 and seventy thousand dollars (\$70,000) in Years 2-5 and thirty five thousand dollars (\$35,000) for the six-month period ending December 31, 2025 without the express written authorization of the City.

Section 06 Method and Time of Payment

A. Provider shall invoice the City monthly. City payments are due within thirty (30) days of each invoice date. Such payments shall constitute the full and complete compensation for the Provider professional services.

B. All invoices must be submitted in duplicate and addressed as follows:
City of Bethel
Attn: Accounts Payable
PO Box 1388
Bethel AK 99559-1388
accountspayable@cityofbethel.net

Section 07 Termination of Agreement for Cause

If, through any cause, the Provider shall fail to fulfill in a timely and proper manner the obligations under this Agreement or if the Provider shall violate any of the covenants, agreements, or stipulations of this Agreement, the City shall thereupon have the right to terminate this Agreement by giving written notice to the Provider of such violation and at least thirty (30) to cure. If Provider fails to cure (or commence diligent efforts to cure, in the case of violations that cannot be cured in 30 days) then the City will be entitled to terminate this Agreement. The Provider shall be entitled to receive compensation in accordance with the payment provisions of this Agreement only for work completed to the City's satisfaction in accordance with Section 3 of this Agreement and the other terms of this Agreement.

Section 08 Termination for Non-Availability of Government Funds

If the City Council fails to appropriate sufficient funds or to authorize the expenditure of sufficient funds to continue service under this Agreement, City may submit a written notice to



Provider terminating this Agreement. Such notice shall be in writing and shall be not less than thirty (30) days prior to the date of termination. The notice shall include a written statement documenting the reason for termination and an official document certifying the non-availability of funds (e.g., Bethel City Council action; official budget or other official government document). City shall be liable to Provider for all charges and costs for products and/or services incurred up to the effective date of the termination. The City's appropriation process will not be used as a reason to terminate this Agreement and select an alternative means to deliver these services if the Provider is otherwise in compliance with this Agreement. The City represents that the funding for the year ending June 30, 2021, for this Agreement have been properly appropriated and that it will provide 90 day's notice in the event that it is unable to fund IT services in a future year of the Agreement.

Section 09 Modifications

The parties may mutually agree to modify the terms of the Agreement. Modifications to the Agreement shall be incorporated into the Agreement by written amendments.

Section 10 Equal Employment Opportunity

The Provider and its subcontractors will not discriminate against any employee on the basis of race, national origin, color, age, creed, religion, sex, sexual orientation, gender identity, political affiliation, marital status, ancestry, disability, status as a disabled veteran or any other protected reason.

Section 11 Assignability

A. The Provider shall not assign any interest in this Agreement and shall not transfer any interest in the same (whether by assignment or novation) without the prior written consent of the City, thereto; provided, however that claims for money due or to become due to the Provider from the City under this Agreement may be assigned by court order or to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the City, or the Provider shall be responsible to the City for any moneys due the assignee of this Agreement which are paid directly to the Provider.

B. Provider shall remain responsible for any subcontract work or services under this Agreement to the same extent as if the work had been done directly by Provider.

Section 12 Permits, Laws and Taxes

The Provider shall acquire and maintain in good standing all permits, licenses and other entitlements necessary to the performance under this Agreement. All actions taken by the Provider under this Agreement shall comply with all applicable statutes, ordinances, rules and



regulations. The Provider shall pay all taxes pertaining to its performance under this Agreement.

Section 13 Relationship of the Parties

In the performance of services under this Agreement, the Provider shall be, and acknowledges that Provider is, in fact and law, an independent contractor and not an agent or employee of the City. Provider has and retains the right to exercise full supervision and control of the manner and methods of providing services to City under this Agreement. The City may administer this Agreement and monitor the Provider compliance with this Agreement but shall not supervise or otherwise direct the Provider.

Section 14 Liability

Without limiting the obligation of City to pay for the Services under this Agreement, in no event will the aggregate liability of either Party, regardless of theory of liability, exceed an amount equal to the monthly recurring charges under this Agreement during the 12 months prior to the event giving rise to the first cause of action. This section does not apply to City's failure to pay all amounts owing to Provider under this Agreement or for early termination. NEITHER PARTY WILL BE LIABLE TO THE OTHER PARTY FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, SPECIAL, RELIANCE OR PUNITIVE DAMAGES (INCLUDING BUT NOT LIMITED TO DAMAGES FOR LOST PROFITS, LOST REVENUES, LOSS OF ANTICIPATED SAVINGS, OR LOSS OF REVENUES OF ANY KIND OR INCREASED COST OF OPERATIONS), WHETHER OR NOT SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. PROVIDER WILL NOT BE LIABLE FOR ANY DAMAGES ARISING OUT OF OR RELATING TO (i) SERVICE INTERRUPTIONS OR LOST OR ALTERED MESSAGES OR TRANSMISSIONS; (ii) UNAUTHORIZED ACCESS TO OR THEFT, ALTERATION, LOSS OR DESTRUCTION OF CITY'S, USERS' OR THIRD PARTIES' APPLICATIONS, CONTENT, DATA, PROGRAMS, INFORMATION, NETWORK OR SYSTEMS; (iii) INTEROPERABILITY, INTERACTION OR INTERCONNECTION PROBLEMS WITH APPLICATIONS, EQUIPMENT, SERVICES OR NETWORKS PROVIDED BY CITY, USERS OR OTHER THIRD PARTIES. PROVIDER MAKES NO WARRANTIES, EXPRESS OR IMPLIED AND SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NONINFRINGEMENT OR ANY WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OF PERFORMANCE. PROVIDER DOES NOT WARRANT THAT THE SERVICES WILL BE UNINTERRUPTED OR ERROR-FREE OR THAT THE SERVICES WILL PREVENT UNAUTHORIZED ACCESS BY THIRD PARTIES. PROVIDER DOES NOT AUTHORIZE ANYONE TO MAKE A WARRANTY OF ANY KIND ON ITS BEHALF AND CITY SHOULD NOT RELY ON ANYONE MAKING SUCH STATEMENTS.

Section 15 Interpretation and Enforcement

This Agreement is being executed by the parties following negotiations between them. It shall be construed according to the fair intent of the language as a whole, not for or against any



party. The titles of sections in this Agreement are not to be construed as limitations or definitions but are for identification purposes only.

Section 16 Provider Insurance

It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of the Agreement to create in the public or any member thereof a third party benefit hereunder, or to authorize anyone not a party to this Agreement to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Agreement.

It is highly recommended that Provider confer with their respective insurance companies or brokers to determine if their insurance program complies with the City's Insurance requirements.

Section 17 Severability

If any section or clause of this Agreement is held invalid by a court of competent jurisdiction, or is otherwise invalid under the law, the remainder of this Agreement shall remain in full force and effect.

IT service provider must complete the following tasks upon contract termination:

- Destroy all documented City of Bethel confidential and proprietary information (including network credentials) that reside with the provider (either digital or physical) within 30 days of contract termination.
- If the service provider is using software to provide any of the services requested, the provider shall work with the City of Bethel IT director to schedule the removal of the software from all devices it has been installed on within 30 days of contract termination
- Advise the City of Bethel on what vulnerabilities it might face once their software or service has been terminated (e.g., ransomware protection will no longer exist without the provider's software) within 60 days of contract termination.
- Adhere to any nondisclosure agreements that were agreed upon at the beginning of the contract. City of Bethel confidential and proprietary information will never be shared with any other entity before, during, and after contract termination.
- Work with City of Bethel IT director to determine the logistics of returning onsite hardware that belongs to the provider that may be residing at one of the service locations in Bethel within 90 days of contract termination
- Work with City of Bethel IT director to determine the logistics of returning any hardware that belongs to the City of Bethel that may be residing with the provider within 90 days of contract termination.

Section 18 Understanding



The Provider acknowledges that the Provider has read and understands the terms of this Agreement, has had the opportunity to review the same with counsel of their choice, and is executing this Agreement of their own free will.

Section 18 Notices

Any notice required pertaining to the subject matter of the Agreement shall be personally delivered or mailed by prepaid first-class, registered or certified mail to the following address:

City of Bethel
Attn: IT Director
PO Box 1388
Bethel AK 99559
bfoley@cityofbethel.net

Section 19 Provider's Violations of Tax Obligations

The Provider shall purchase from and maintain in a company or companies lawfully authorized to do business in the State of Alaska as admitted insurers or surplus lines insurers approved by Bethel, such insurance as will protect the Provider from claims set forth below and others, which may arise out of or as a result from the Provider's operations under this contract, whether such operations are by the Provider or by a sub-Provider or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Restrictions, conditions or exclusions contained in the insurance policies shall not reduce the obligations of the Provider under this contract.

- (a) Claims under worker's compensation, employer's liability, disability benefits, and other similar employee benefit acts, which are applicable to the work to be performed under this contract.

Claims for damages because of bodily injury, mental anguish, sickness, disease or death of any person other than the Provider's employees.

Claims for damages insured by usual personal injury liability insurance coverage which are sustained (1) by a person as a result of an offense directly or indirectly related to the employment of such person by the Provider, or (2) by any other person or entity.

Claims for damages, other than to the product supplied, or to the services performed, itself because of damage to or destruction of tangible property, including loss of use resulting therefrom.



Claims for damages because of bodily injury, including death of a person, or damage to property arising out of the ownership, maintenance or use of any motor vehicle.

Liability insurance shall include at a minimum, all major divisions of coverage and be on a commercial general liability form including:

- Premises/Operations Liability
- Products/Completed Operations Liability
- Personal/Advertising Injury Liability
- Fire Damage Liability
- Medical Payments
- Professional (Errors & Omissions) Liability (this may be a separate policy)

(b) The insurance required in II including subsection (a), shall be written for not less than the limits listed in (c) below or those limits required by law, whichever limit is higher. Insurance, whether written on an occurrence, or a claims-made basis, shall be maintained without interruption from the date of commencement of the work to the date of final payment, or termination of any insurance required to be maintained after final payment.

(c) The insurance required in II including subsection (a). shall be written for not less than the following limits:

1. Worker's Compensation Insurance:
Statutory Requirements of the State of Alaska, and
Employer Liability Insurance limits of:
\$500,000.00 each accident.
\$500,000.00 disease each employee.
\$500,000.00 disease policy limit.
2. Commercial General Liability Insurance: Form CG0001 04/13 or equivalent.
\$2,000,000.00 Combined Single Limit of Liability per Occurrence
\$2,000,000.00 Personal/Advertising Injury Limit of Liability per Occurrence
\$2,000,000.00 Annual General Aggregate Limit of Liability
\$2,000,000.00 Annual Products/Completed Operations Aggregate Limit of Liability
\$100,000.00 Fire Damage Limit of Liability Any One Fire
\$5,000.00 Medical Payment Limit Any One Person
3. Commercial Automobile Liability Insurance: Form CA0001 03/10 or equivalent.
\$1,000,000.00 Combined Single Limit of Liability per Accident
For all Owned, Hired, and Non-Owned Vehicles.



4. Professional (Errors & Omissions) Liability Insurance:

\$1,000,000.00 Limit of Liability per Claim.

\$2,000,000.00 Limit of Liability Annual Aggregate for all Claims.

Effective date: Prior to effective date of contract, and for at least 24 months after completion of contract.

- (d) Worker's compensation insurance and employers liability insurance shall be in compliance with the statutory requirements of the State of Alaska, and any other statutory obligation, whether federal or state pertaining to compensation of injured employees.
- (e) The commercial general liability insurance shall name Bethel as an additional insured as respects this contract, but only to the extent of Provider's fault and subject to the limitations of liability contained in this agreement.
- (f) Provider's required insurance is subject to review and adjustment by Bethel.
- (g) Certificates of insurance acceptable to Bethel shall be filed with Bethel prior to the commencement of the beginning of any services by the Provider. These certificates and the insurance policies shall contain a provision that the policy shall not be canceled until prior written notice has been sent to the insured (Provider).

If any of the insurance policies required above are canceled for any reason, the Provider shall provide immediate notice to Bethel of the cancellation and either provide: evidence of replacement or notice of reinstatement. Immediately in this section means within five (5) business days of receipt of cancellation by the Provider.

Failure to maintain these insurance provisions required of the Provider or failure to immediately notify Bethel of cancellation shall be considered a material breach of this contract by the Provider, subject to termination provisions of this contract.

Notice described above shall be by confirmed delivered to the following location:

City of Bethel
Attention: Contracting
PO Box 1388
300 State Highway
Bethel, AK 99559
(907) 545-4847

- A. Any Provider in arrears on a City obligation, including, but not limited to tax, assessment, lease, sale, or rental payments, whether as an individual, or as a



representative of a business, organization, firm, corporation, or partnership, shall not be awarded the Agreement if the delinquency is not cured within ten calendar days of receipt of written notice sent by the City of the delinquency.

- B. This Agreement can be terminated for cause, pursuant to Section 8, if it is determined that a Provider whether the amounts owed are in the name of the Provider as an individual or as a representative of a firm, business, corporation, or partnership, is in arrears of any taxation, lease or rental agreement that is due to the City that is not remedied within 10 calendar days of notification by regular mail.
- C. The City reserves any right it may have to offset amounts owed by an individual, firm, corporation or business for delinquent City taxes, moneys owed on sales, assessments, leases and rental agreements, against any amount owing to the same under an agreement between the City and the same.

CITY OF BETHEL

Alaska Communications



By: Vincenzo S. Corazza

Title: City Manager

Dated: 5-28-2020



By: Bill Bishop

Title: President

Dated: May 27, 2020



Attachments:

- Attachment A – Service Description – ConstantlyOn IT
- Attachment B – ConstantlyOn IT Minimum Security Requirements and Client Agreement



**Service Description
ConstantlyOn IT**

Attachment to Alaska Communications Services Agreement

1. ConstantlyOn IT Service

A. The Services

The Services include Network Monitoring, Vendor Management, Remote Help Desk support, and Proactive Support as described below. Regular business hours are 7:00 AM through 6:00 PM Alaska Time, Monday through Friday, excluding Alaska and federal holidays observed by Alaska Communications. Services are provided for the locations and number of covered users specified in the City of Bethel, Professional Services Agreement for Remote Technical Support Services (agreement). If Customer's network structure or equipment use is beyond that normally encountered for the number of users covered, Alaska Communications reserves the right to upwardly adjust the Monthly Recurring Charge (MRC).

(a) Network Monitoring. Alaska Communications will monitor the customers local area network(s) identified in the agreement. Only those devices that can be monitored via WMI/SNMP will be included. Should that monitoring expose any problems, Alaska Communications will endeavor to promptly address them remotely within regular business hours.

(b) Vendor Management. On behalf of Customer, Alaska Communications will serve as point of contact for Information Technology vendors, that customer has ongoing contracts with, for covered systems under the agreement. Alaska Communications will track vendor work order requests and regularly update the Customer on progress. Customer understands the resolution time needed for issues requiring vendor assistance cannot be controlled by Alaska Communications, Alaska Communications serves only as the local assistance for the vendor. Any effort with vendor outside of regular business hours are in addition to the MRC agreed upon in the agreement. Additionally, extended troubleshooting activities with vendor and work not directly related to problem resolution such as assisting vendor in configuring and using remote access capability or the acquisition, installation and configuration costs of any tools, software or hardware, may be in addition to the MRC agreed upon in the agreement.

(c) Remote Help Desk. Alaska Communications will provide Information Technology support for hardware, systems, and Microsoft operating systems covered by the agreement. Alaska Communications will provide help desk services for end user support questions, and where possible, troubleshoot hardware & software, through remote means.

(d) Proactive Support. Alaska Communications will provide proactive support, such as monitoring backup jobs for completion status, monitoring anti-virus software for issues, and proactive maintenance on covered system such as deploying required feature packs, hot fixes, firmware updates, anti-virus software database updates, etc. Software upgrades are not considered proactive.

(e) Incident and Service Requests. Any need for assistance will be initiated by a covered user by creation of a "Trouble Ticket" to be delivered to Alaska Communications as follows: (i) sent by email to the Remote Help Desk; or (ii) communicated by telephone. Customer may also choose to have a single representative in Customer's organization forward all covered end-user assistance requests to Alaska Communications by the methods listed above. Tickets will be assigned tracking numbers and Alaska Communications will respond to Service Requests in the order received, or if an Incident, based on the



Service Description

ConstantlyOn IT

severity of the incident. See Annex A "Response Times" table for reference on the service's expected

response times based on ticket type and severity.

(f) Onsite Service Call. On occasion, a customer may request an onsite visit for a service call that cannot be easily resolved remotely. Customer and Alaska Communications will determine together if the onsite visit is necessary, and if so, a clear statement of work in the form of a service ticket will be created. Once onsite, the Alaska Communications technician assigned to the service ticket will perform the tasks in the service ticket only. Onsite visits are restricted to the customer business locations that are included in the agreement. Alaska Communications reserves the right to dispatch technicians to solve any trouble ticket or service request.

(g) Onsite Service Call – No Trouble Found. In the event that Alaska Communications furnishes a technician onsite, in response to Customer's service request, and Customer is not able to identify or reproduce the problem at issue, the Customer agrees to pay Alaska Communications for its services at Alaska Communications' standard labor rates at the time of the service.

(h) Hardware, Systems, and Microsoft Operating System Software Support. Throughout the entire term of the agreement, all software supported must be genuine, fully and properly licensed, and vendor supported. Any hardware, system, or software failing to meet the above conditions will not be supported under Services described in this document and, if Alaska Communications determines that the failure substantially impairs its ability to provide services hereunder, Alaska Communications may terminate the agreement immediately. Alaska Communications acknowledges that in certain rare cases hardware, systems and operating systems not under warranty or support must remain in use based on vendor and/or business requirements. In those cases, any support provided by Alaska Communications will not be subject to the Response and Resolution Times targets in Annex A. Any additional costs associated with this support may be in addition to the MRC agreed to in the agreement.

(i) Breach, Viruses and Infection Remediation Efforts. Although it is impossible to prevent all security incidents, good security practices can reduce the likelihood of an incident and its severity. Alaska Communications may suggest security steps a customer may take to reduce this likelihood. It is strongly recommended to consider these suggestions as Alaska Communications provides no included breach or virus infection remediation with this service, rather the focus is on prevention. In the event of a breach or virus infection, Alaska Communications may, at its discretion, provide some modest recovery efforts up to 1 times MRC for ConstantlyOn IT services covered by the agreement, such as restoring lost files from a known good back up, but in no case will in-depth recovery and/or forensics be included in the monthly recurring charge.

B. Conditions to Provision of ConstantlyOn IT Services

Customer will ensure that its network, systems and hardware meet the conditions outlined in Section 1 A (h) above and additionally comply with each of the following requirements:

(a) Customer-provided anti-virus products (used in lieu of the standard Alaska Communications included product in this Service) must be a currently licensed, updated and vendor-supported server-based antivirus solution protecting all servers, desktops, notebooks/laptops, and email.



(b) Customer's environment must have a currently licensed, vendor-supported server-based, cloud based, or dedicated appliance- based backup solution that can be monitored and sends notifications regarding job failures and successes. The selection of data to be backed up, retention requirements and recovery time objectives will be determined by a Customer-defined selection list created with the assistance of Alaska Communications.

(c) Customer's environment must have a licensed, vendor-supported, enterprise class hardware firewall between the internal network and the internet. As each business may have its own unique inbound/outbound security requirements, Alaska Communications expects the customer to participate in the definition of the firewall security policies applied. Alaska Communications' role is to advise only, to assist in applying the defined policies to the firewall, and to assist in revising those policies as customer needs require.

(d) Customer should have a static IP address assigned to the Internet facing interface on the firewall to permit or allow Virtual Private Network (VPN) access for required remote support capability; This is recommended for each client location. Without this static IP address, Alaska Communications ability to perform remote support is severely impacted and Alaska Communications would not expect to be able to achieve the resolution times detailed in Annex A.

(e) The physical environment where Customer's servers and/or networking hardware are installed should be compatible with the manufacturer's recommendations for proper ventilation, cooling and power. In addition, proper earthquake and flood damage mitigation mechanisms should be in place. The environment must also provide ConstantlyOn IT staff the ability to work uninhibited by space restrictions.

(f) Customer must provide administrative access to all systems requiring support covered by the agreement, whether it is an on-premise system, or in the cloud. In cases where this administrative access requires an account that may require costs to acquire, customer is responsible for those costs.

(g) Customer will notify Alaska Communications of all instances and locations containing Personal Healthcare Information ("PHI"), electronic Personal Healthcare Information ("ePHI"), Payment Card Industry Data Security Standard information ("PCI-DSS"), Personally-Identifiable Information ("PII") and any other protected information. This information is used by Alaska Communications solely to determine where data may be subject to increased security scrutiny and protection.

It is recommended that customer maintain at least one spare PC, either desktop or laptop or both. If a covered employee has a complete PC failure, without a spare, the time to return that person to full working order will be dictated by the speed at which a replacement can be acquired, a length of time Alaska Communications has no control over.

C. Exclusions from ConstantlyOn IT Services

The Services provided by Alaska Communications to Customer do not include:

(a) After the start of the service, any equipment, hardware, parts and software not disclosed to Alaska Communications during the onboarding process;



(b) The costs to acquire, configure and install new or replacement equipment, hardware or parts, licensing or software and any associated delivery or shipping charges of any kind;

(c) The costs to acquire technology vendor support contracts or warranties to support customer equipment and software;

(d) Equipment, hardware, parts and software not covered by any vendor or manufacturer warranties or support agreement;

(e) Wiping, re-imaging, and rebuilding of existing PC's for redistribution. This is considered a new or replacement PC under the terms of the agreement and costs to complete will be in addition to the MRC agreed to in the agreement.

(f) Any hardware, software, or systems whose intended purpose is for in home use.

(g) Any hardware, software, or systems whose failure or defect was caused by improper use;

(h) All service and repairs made necessary by the alteration or modification of equipment, other than that authorized by Alaska Communications, including alterations, software installations or modifications of equipment made by Customer's employees or anyone other than Alaska Communications;

(i) All maintenance of applications software packages, whether acquired from Alaska Communications or any other source;

(j) All programming (modification of software code) and program (software) maintenance, unless already covered;

(k) Training of any kind;

(l) If customer is asked to perform an audit or self-audit on regulation compliance, Alaska Communications will assist where possible solely by providing information on covered systems under the agreement as it relates to Information Technology. Alaska Communications will not provide data on compliance in other areas such as but not limited to, policies or employee training. Additionally, the cost associated with Alaska Communications assisting in this effort will be in addition to the MRC;

D. Additional Covered Users and/or Business Locations

If Customer wishes to add additional covered users and/or physical business locations to those currently covered under the current agreement, Alaska Communications must be notified of the additions and obtain Alaska Communications' prior written consent. Any addition of covered users and/or business locations not originally included in the current agreement may require an adjustment to Customer's MRC for ConstantlyOn IT services. Once per year, Alaska Communications and customer will perform a true up to determine if any users or locations currently supported, or needing support, are not currently identified as covered by the current agreement. Any additions may result in an adjustment to Customer's MRC for ConstantlyOn IT services covered by the agreement. Any changes will be captured in an Addendum document to the agreement currently in force.



Support Tiers and Response/Resolution Times

Alaska Communications Support Tier levels are as follows:

Support Tier	Description
Tier 1 Support	All support incidents begin in Tier 1, where the initial trouble ticket is created, the issue is identified, and clearly documented, and basic hardware/software troubleshooting is initiated.
Tier 2 Support	All support incidents that cannot be resolved with Tier 1 Support are escalated to Tier 2, where more complex support on hardware/software issues can be provided by more experienced Engineers.
Tier 3 Support	Support Incidents that cannot be resolved by Tier 2 Support are escalated to Tier 3, where support is provided by the most qualified and experienced Engineers who have the ability to collaborate with 3 rd Party (Vendor) Support Engineers to resolve the most complex issues.

Alaska Communications' target response and resolution times, during regular business hours, for each priority level are as follows:

Trouble	Priority	Response time	Resolution time*
Service not available (All users affected, functions, and systems unavailable causing significant business impact).	1	Within 1 Hour	Reasonable Efforts to resolve within 2 hours
Significant degradation of service (large number of users or business critical functions affected, able to work with exceptions).	2	Within 2 Hours	Reasonable Efforts to resolve within 4 hours
Small service degradation (Business process can continue with effort, one or a few users affected).	3	Within 4 Hours	Reasonable Efforts to resolve within 16 hours
Service Requests (typical service requests include asks from a user for information, advice, a standard change, or access to a service).	4	Within 8 Hours	Resolution times vary as they are based on the nature of the request and amount of effort to resolve.

*Resolution times do not include time waiting for assistance from vendors on affected systems and/or responses for additional information or problem testing by customer that may be required by Alaska Communications.



Annex B

Service Rates

Labor	Rate	*All times noted are Alaska Standard Time and exclude the observance of the following holidays: New Year's Day Memorial Day Independence Day Labor Day Thanksgiving Friday after Thanksgiving Christmas **One hour minimum, thereafter, Service is billed in 30-minute increments.
Remote Management/Help Desk 7am-6pm M-F*	INCLUDED	
Ongoing Network Alerting (active response is limited to 7am-6pm M-F*)	INCLUDED	
Onsite ConstantlyOn IT Labor (Only for hardware and software issues affecting properly supported and warranted systems. 8am-5pm M-F*)	INCLUDED	
No Trouble Found Fee**	\$150/hr.	
Afterhours Support**	\$225/hr.	
Non ConstantlyOn IT Service and Project Labor	\$150/hr	
Travel Labor (Any potential required travel labor will be determined based on location of service)	\$75/hr.	



Annex C

Deployment Schedule

This exhibit is intended to be a brief overview of a typical deployment schedule for implementation of the services defined within this contract and is to be further defined and negotiated by both parties AFTER contract execution.

Task	Responsible Party
Alaska Communications receives Contract	Alaska Communications and Customer
Customer can utilize Alaska Communications IT services until the on-boarding process is finalized at our standard rates. Services provided before onboarding is complete could be limited in our abilities to provide support as defined in this document, as all service requirements are not in place.	Customer
Information Technology Assessment Starts	Alaska Communications Engineer
Information Technology Assessment Completion	Alaska Communications Engineer
Internal (peer-peer) Alaska Communications meeting to review Information Technology Assessment	Alaska Communications Engineer and Staff
Alaska Communications Meeting with Customer to introduce Technical Account manager and review of Information Technology Assessment to include identification of items of a critical nature and remediation recommendations.	Alaska Communications Staff and Customer
Alaska Communications finalizes On-Boarding activities	Alaska Communications Engineer
Customer signs LOA's for Vendor Management provides authorized employees list for billable service requestor and provides employee directory & priority employee listing.	Customer
Full ConstantlyOn IT support starts	Alaska Communications and Customer

*



Annex D

Covered Features

This exhibit is intended to be a reference of included and excluded support features of ConstantlyOn IT. This list is for reference only and is not to be considered an absolute representation of all covered or excluded features.

Feature		Included	Excluded
Remote Support		X	
Technical Account Manager		X	
Compute Support			
	Desktops	X	
	Laptops	X	
	PC Peripherals	X	
	Printers/Scanners	X	
	Physical Servers	X	
	Virtualized Servers	X	
	Storage Arrays	X	
Proactive Maintenance			
	Service/Feature Packs	X	
	Hot Fixes/Patching	X	
	Firmware Updates	X	
Networking			
	Wired/Wireless Routers/Access Points	X	
	Hotspots/Guest Wireless		X
	Network Printing	X	
	Switches	X	
	Firewalls	X	
	Managed Routers	X	
Anti-Virus/Malware Mitigation			
	Anti-Virus Software Provided	X	
	Proactive AV Software Updating	X	
	Modest Reactive Virus/Malware removal – See Section 1 A (i) for details	X	
	Large Scale Incident Recovery/Forensics		X



Service Description
ConstantlyOn IT

Data Backup Systems Support			
	Monitoring Backup Process	X	
	Perform Simple File Restore Operations*	X	
	Disaster Recovery Assistance		X
Miscellaneous Equipment			
	Tablets and Mobile Devices		X
	Business Audio-Visual Equipment		X
	Point of Sales Equipment/Systems		X
	Telephone Equipment/Systems		X
Email Client Support			
	Current Vendor Supported Clients	X	
Email Server Support			
	Microsoft Exchange	X	
	Microsoft 365	X	
Internet Tools			
	Social Media Applications		X
	Web Browsers	X	
Operating System Support*			
	Windows Desktop Operating Systems	X	
	Microsoft Server Operating Systems	X	
	*Support typically is restricted to Operating Systems supported by Microsoft		
Microsoft 365 Tenant/Administration Support**		X	
Microsoft Azure Tenant/Administration Support**		X	
Non-Microsoft Cloud based Applications Administration Support**		X	
Server Based Application Support (e.g. SQL, IIS)		X	
Other Apps e.g. Adobe			X

* Simple File restores are define as file/folder data that can easily be restored via the in-place backup system using the data in the backup selection list. Complete disaster recovery or the need to recover an entire system just to recover a simple file/folder are excluded.

**Administration of cloud-based services include routine tasks such as adding new users, helping with passwords, assigning application licenses etc. Advanced administration such as configuring and maintaining SharePoint are excluded.



ConstantlyOn IT Minimum Security Requirements

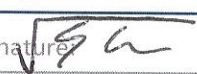
Impacts from cyberattacks are both far reaching and costly with damages that can include; data extortion/ransomware, business reputation, and trust, as well as customer loyalty. Alaska Communications is committed to working with our ConstantlyOn IT clients to create an IT environment with layers of security to provide protection for your business resources and data. This approach combines multiple mitigating security controls such as:

- an anti-virus application
- a firewall
- an anti-spam application
- email encryption
- web filtering
- back-up solution with offsite replication
- local area network monitoring and alerting
- guest wireless network segregated from production network
- authorized personnel activity accounting (network administrative accounts)
- end-user awareness training
- end-user general policy management of password requirements, account lockouts and not using shared accounts
- upgrade, replacement or retirement of non-supported legacy systems
- physical environment security

This list is not all inclusive, and your organization may have additional security controls based on regulatory compliance requirements specific to your business. Your organization may utilize some or all these security tools and policies. (See back)

It is impossible to prevent all security incidents. Good security practices can reduce the likelihood of an incident and its severity. Alaska Communications' Managed IT services includes an extra annual allotment of one time your monthly ConstantlyOn IT charge to assist with remediating security incidents' regardless of the root cause of the incident. If at the time of an incident, you are in full compliance with the security recommendations provided by Alaska Communications on page two then this allotment will be increased to up to two times your ConstantlyOn IT monthly charges. Compliance with these requirements may involve a change to your network or network access policies, which will be coordinated in advance.

Customer

Signature: Print Name: VINCENZO S. CORAZZABusiness Name: CITY OF BETHELDate: 5-28-2020

Alaska Communications

Signature: _____

Print Name: _____

Business Name: Alaska Communications

Date: _____



ConstantlyOn IT Minimum Security Requirements and Client Agreement

Please review the table below and indicate your acknowledgment with initials.

#	Minimum Requirement	What this means to you	Risk of non-compliance	COIT
1	Passwords must be a minimum of 8 characters; contain standard complexity, and changed every 90 days.	User must maintain complex passwords which are changed when prompted	Attackers can use dictionary and brute force attacks to guess your password	✓
2	Accounts locked out for 24 hours after 5 invalid logon attempts to systems and Microsoft 365	User must call COIT helpdesk to unlock account	Attackers can use dictionary and brute force attacks to guess your password	✓
3	Firewall/UTM policy to block all unsecured inbound connections	Transparent to user	Reduces attack surface of system(s) exposed to potential attackers	✓
4	Wireless networks to be configured with WPA2 or stronger encryption; guest WLAN access must be segregated from production network	Wireless networks must use transport encryption stronger than WEP and WPA to prevent unauthorized use	Minimizes attacker ability to use brute-force techniques to gain unauthorized wireless access	✓
5	Each user must use his/her account; no sharing or group accounts permitted.	Each user has his or her own account	Allows COIT technicians to investigate security incidents	✓
6	Non-supported legacy systems must be upgraded, migrated, unsupported, or retired.	Any computers running, for example, Windows 7, must be decommissioned, upgraded to Windows 10, or migrated to newer hardware	Protects customer by ensuring that attackers cannot exploit old software that cannot be patched	✓

Please select one of the following:

☐ I agree to meet the above minimum security requirements to the best of my ability with the understanding that I can request assistance in any of these areas from the COIT helpdesk at any time.

Initial: _____

☒ I do not agree to the following minimum-security requirements (list by number):

Initial: VSC Number: 5

Initial: _____ Number: _____

Initial: _____ Number: _____

Initial: _____ Number: _____

Initial: _____ Number: _____

Initial: _____ Number: _____



Signature: Bill Bishop
Bill Bishop (May 21, 2020 16:21 AKDT)

Email: william.bishop@acsalaska.com

Title: President

Company: Alaska Communications

We have prepared a quote for you

City of Bethel - Amendment to COIT Agreement to Include "On-Site Staff Augmentation"

Quote # 033014 Version 1



Prepared for:
City of Bethel
Bill Arnold
warnold@cityofbethel.com

Prepared by:
Stacey Simpson
Stacey.Simpson@acsalaska.com

Presented by:
David Murphy
David.Murphy@acsalaska.com

 Statement of Work

This quote is being provided to the City of Bethel to amend the city's Managed IT Services agreement with Alaska Communications.

This amendment is being provided to facilitate the addition of Outsourced On-Site Staff Augmentation for Information Technology Services. Alaska Communications will provide a System Administrator Professional to work onsite in the City of Bethel one week a month for 12 months. Alaska Communications will attempt to utilize the same technician each month but reserves the right to change if necessary.

This provided resource will facilitate on-site support services to the City of Bethel for the below departments:

- Police Department
- City Sub Water Plant
- Fire Department
- YK Fitness Center
- Bethel Heights Water Plant
- Court House
- Transit Office
- Public Works
- Utility Maintenance
- Landfill
- Boat Harbor
- Post Office
- City Hall

Alaska Communications and the City of Bethel will schedule the technician site visit at least one month in advance of the visit. The scheduling will need to account for holidays and technician time off to best serve the City's needs and unnecessary OT charges being accrued due to holidays, etc. If the OT hours for any site visit are going to exceed the 10 hours included in this agreement, the City of Bethel will be notified prior to any extra hours being worked so the City of Bethel may provide written approval to perform the work. All OT hours will be billed at \$240.00 / hour.

The provided System Administrator will work in conjunction with the Alaska Communications Constantly OnIT Remote Help Desk to facilitate IT Services for the City of Bethel.

The provided System Administrator while onsite will provide the following services:

- Creation of Information Technology Tickets for the Constantly On IT Help Desk
 - Issue documentation and resolution steps

- Responding to inquiries from COB End Users
 - Conducting End User Support and Desktop/ End User Device Service Requests
- Assisting with end point (Desktop) application software installations and configurations
- Identifying and escalating unresolved issues to higher support tiers
- Work Station Life Cycle Management (Workstation Provisioning and Decommissioning)
- Providing onsite smart hand support for Information Technology Projects.
- Facilitating inspection of On premises Information Technology Infrastructure.
- Other IT needs as applicable to the City's needs and within the technician's ability complete.

This service will be provided to City of Bethel as a supplemental service to enhance Information Technology Managed IT Services provided to the city under their Constantly OnIT Agreement with Alaska Communications. The provided Support Professional will work in conjunction with the current help desk and will be leveraged accordingly.

The City of Bethel will make all pertinent systems available to the technician as required to perform required work.

City of Bethel will provide lodging and a vehicle.

- **Lodging:**
 - Studio apartment with a private bathroom/shower & kitchenette (small fridge, microwave, coffee maker & induction cooktop).
 - if kitchen necessities are missing the City will provide/replace.
 - Small table with two chairs and a dresser.
 - There are 9 units in the building with laundry room downstairs.
 - The building and apartment are both secured with a key code.
- **Tenant Expectations:**
 - Technician will take out the garbage prior to departure.
 - Clean up & at a minimum strip the bedding so the City can have the unit cleaned.

Storage:

- Technician will be able to store personal supplies (i.e. toiletries, etc) in the IT office when not in Bethel so easily retrievable.

Travel: Technician to be onsite 1 week per month for 12 months. Travel Sunday night / return Friday night. Please note that travel expenses can increase with weather or flight delays.

Agreement

Description	Qty	Recurring
Professional Outsource Agreement (Regular Hours - Fixed)	40	\$170.00
Professional Outsource Agreement (After Hours Estimated - Bill Actuals)	10	\$240.00
Travel Costs - Airfare (Round-Trip)	1	\$290.00
Travel Costs - Tech Per Diem (Meals x 6 days)	6	\$81.00
Monthly - 12 Subtotal:		\$9,976.00

City of Bethel - Amendment to COIT Agreement to Include "On-Site Staff Augmentation"

Prepared by:

**Alaska Communications Services,
Inc.**

Stacey Simpson
 9075647809
 Fax (907) 375-1188
 Stacey.Simpson@acsalaska.com

Prepared for:

City of Bethel

300 State Highway
 Bethel, AK 99559
 Bill Arnold
 (907) 543-2047
 warnold@cityofbethel.com

Quote Information:

Quote #: 033014

Version: 1
 Delivery Date: 06/18/2024
 Expiration Date: 07/31/2024

Monthly - 12 Expenses Summary

Description	Amount
Agreement	\$9,976.00
Monthly - 12 Total:	\$9,976.00

Alaska Communications generates billing and/or recognizes revenue for work performed on a monthly basis. This may consist of material delivered and accepted by the customer for storage at the customers location or if agreed upon at an Alaska Communications facility, non-tangible software licenses or subscriptions, and professional services performed to date. Purchase orders under this quote are subject to Alaska Communications' Terms and Conditions at www.alaskacommunications.com/businesstermsandconditions . This quote expressly limits acceptance to the terms herein

Introduced by: Acting City Manager Strickler
Introduction Date: July 9, 2024
Public Hearing: July 23, 2024
Action:
Vote:

CITY OF BETHEL, ALASKA

ORDINANCE #24-05 (a)

AN ORDINANCE BY THE BETHEL CITY COUNCIL AMENDING THE CAPITAL IMPROVEMENT BUDGET FOR FISCAL YEAR 2025, JULY 1, 2024-JUNE 30, 2025

WHEREAS, the animal control center request for proposal resulted in the lowest bid coming in at \$2,338,604;

WHEREAS, in Fiscal Year 2023 the City allocated for the project construction, which was increased by first \$400,000, then another \$300,000 in Fiscal Year 2024;

WHEREAS, in order for the City to proceed with the current design, the City Council would need to allocate an additional \$1,000,000 to the project;

WHEREAS, a city excavator is in need of a replacement undercarriage for its continued operation, the undercarriage was quoted to be \$47,414.38, and the shipping costs are \$8,186.35;

WHEREAS, the City would like to make steady improvements to the community's street lights beginning with the cul-de-sac courts in the housing subdivision;

WHEREAS, the City estimates being able to purchase and install 36 LED 120 streetlights in the neighborhood;

WHEREAS, through the adoption of Resolution 24-02, the Bethel City Council authorized the City's utilization of the Last Frontier Housing Initiative Funds for a Professional Housing Development;

WHEREAS, the City may be awarded up to 3,000,000 for the construction of six housing units, with the award, the City is obligated to provide a 15% funding match that can be in the form of land, ground work, personnel services ect;

WHEREAS, the proposal for this Request for Proposal are due July 11, 2024, the Council will be presented with an AM authorizing the contract with the highest scoring contractor in August;

BE IT ORDAINED by the City Council of Bethel, Alaska, as follows:

SECTION 1. Classification. This is a noncodified ordinance establishing the City of Bethel Capital Improvement Budget for Fiscal Year 2025

SECTION 2. Appropriations. That money shall be appropriated from the following associated City Funds for capital expenditures, new language is underlined and in red:

General Fund – Capital Expenditures		
Police Department		
2024 Ford Expedition *2	\$154,068	
Body Camera's	\$104,000	
Information Technology Upgrades	\$109,901	
<u>Animal Control Center</u>	<u>\$1,000,000</u>	
Police Department Sub-Total	\$367,969	<u>1,367,969</u>
Steets & Roads Department		
2024 F-250 *2	\$131,790	
Dust Control	\$500,000	
<u>Replacement of Excavator Undercarriage</u>	<u>\$55,600</u>	
<u>Streetlight Installation ASHA Courts</u>	<u>\$110,000</u>	
Streets & Roads Sub-Total	\$631,790	<u>797,390</u>
Property Maintenance		
Boardwalk Lighting	\$250,000	
Property Maintenance Sub-Total	\$250,000	
Alaska Housing Finance Corporation Professional Housing Grant Match		
<u>City's required 15% for the Professional Housing</u>	<u>\$450,000</u>	
General Fund Beginning Balance		
General Fund Total Expenditures	\$1,249,759	<u>2,615,359</u>
General Fund Remaining Balance	\$11,079,333	<u>9,713,733</u>

Leased Properties – Capital Expenditures	
Nora Guinn Court Complex	
Upgrade Hydronic System	\$150,000
Nora Guinn Court Complex Sub Total	\$150,000
Enterprise Fund Beginning Balance	\$2,691,072
Enterprise Fund Total Expenditures	\$150,000
Enterprise Fund Remaining Balance	\$2,541,072

City Sub Water Treatment Proposed Capital Expenditures	
Chemical Storage Building	\$265,000
City Sub Water Treatment Sub-Total	\$265,000
W/S Fund Beginning Balance	\$2,291,735
W/S Fund Total Expenditures	\$265,000
W/S Fund Remaining Balance	\$2026,735

Lift Station Project Capital Expenditures	
Chemical Storage Building	\$265,000
Lift Station Project	\$190,000
City Sub Water Treatment Sub-Total	\$455,000
W/S Fund Beginning Balance	\$2,291,735
W/S Fund Total Expenditures	\$455,000
W/S Fund Remaining Balance	\$1,571,735

Municipal Dock Capital Expenditures	
Port Wall Emergency Repairs	\$89,335
City Sub Water Treatment Sub-Total	\$89,335
Fund Beginning Balance	\$6,597,967
Fund Total Expenditures	\$89,335
Fund Remaining Balance	\$6,508,632

Transit System Capital Expenditures	
Two Transit Buses and Upgrade to Building Heating Units	\$213,392
Transit System Sub-Total	\$213,392
Fund Beginning Balance	\$2,026,735
Fund Total Expenditures	\$213,392
Fund Remaining Balance	\$1,813,343

SECTION 3. Effective Date. This ordinance shall become effective upon the passage by the Bethel City Council.

NOW THEREFORE BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF BETHEL, ALASKA, that the Fiscal Year 2025 Capital Improvement Budget is amended.

ENACTED THIS 23rd DAY OF JULY 2024, BY A VOTE OF _ IN FAVOR AND _ OPPOSED.

Mark Springer, Mayor

ATTEST:

Lori Strickler, City Clerk



Alaska Marine Lines, Inc.
5615 W. Marginal Way S.W.
Seattle, WA 98124
www.lynden.com/aml

Rate Quote **AML240701072**
Quote Date **01 Jul 2024**

Requested by:

Bruce Sledge
NC Machinery
Phone: (907) 786-7564
Email: bsledge@ncmachinery.com

Prepared by:

August Linneman
Phone: (800) 326-8346
Email: CSWAKHL@lynden.com

Description: machine parts

Origin			ORG	DST	Destination	Routing	Mode					
Tukwila, WA			SEATTLE	BETHEL	Bethel, AK	Door - Dock	Water - Barge					
Qty	Commodity	Pkg Type	Description	Dimensions (LxWxH)		Weight	Total Wt	Min Qty	Rate	Basis	Rated As	Charge
1	1520-000	EACH	20' Container High Cube SLC - machine parts	20'0" x 8'0" x 9'6"		11,470	11,470	24,000	29.67	CWT	24,000.00	\$7,120.80
			Trucking: Tukwila, WA (Placement)						323.00	EACH	1.00	\$323.00
			Inland Fuel Surcharge; subject to the rate in effect at the time of shipment.						42.50%	PCT		\$137.28
			Fuel Surcharge (WW); subject to the rate in effect at the time of shipment.						8.50%	PCT		\$605.27
Subtotal				160.0 sq ft / 1,520.0 cu ft		11,470 lbs						\$8,186.35

Rates are for consignee: City of Bethel only.

MACHINERY and OTHER ARTICLES, Not Self-Propelled (See Notes 1 through 3)

1520-000

1. Square foot rates are not subject to over dimension charges in Rule 568 (over-dimension).
2. Single pieces of machinery exceeding 50,000 pounds will be considered on a case-by-case basis.
3. Deck stow machinery destined for village locations will be considered on a case-by-case basis.
4. Articulated units, which have permanent or semi-permanent pivot joints, must ship with a locking pin securely fastened in the pivot joint.

Estimated Total

160 sq ft / 1,520 cu ft

11,470 lbs

\$8,186.35

General Quote Notes

Next Steps:

1. **Make a booking:** If you are ready to schedule your shipment, please complete a shipping request on our website.
[Book a Shipment | Alaska Marine Lines \(lynden.com\)](http://www.lynden.com/aml)
2. **Deliver your cargo in Seattle:**
Alaska Marine Lines - Terminal 115 (Y4)
6110 W. Marginal Way SW
Seattle, WA 98106

Dropoff Instructions:

www.lynden.com/aml/about/locations/

For shipments requiring pre-payment, please remit check payments to:

AML
P.O. Box 34026
Seattle, WA 98124-1026

Online payments can be made at <http://www.lynden.com/pay/>

Fuel Surcharge: Rates are subject to Carrier's applicable fuel surcharge in effect at the time of shipment.

ESTIMATE: Rates and charges stated herein are estimates only based on the shipment specifications provided, including, but not limited to, cargo description, dimensions, and weight, as well as requested origin and destination points, and shall not be construed as a tariff. Freight charges shall be assessed based on the actual weight, dimensions and services provided as verified and rates in effect when cargo is received.

Carrier's liability shall be limited as outlined in Alaska Marine Lines' STB AKMR RULES TARIFF 100 (available online at www.lynden.com); cargo valued at \$75,000 or greater will be assessed an additional charge of 2% of the total value as declared on the bill of lading.

CREDIT: Until you have been approved for credit with Alaska Marine Lines, you will be required to pre-pay your freight charges in full.

For the hub ports of Dutch Harbor, Naknek, Dillingham, Bethel, Nome, and Kotzebue, Alaska Marine Lines' equipment must be made available at the dock by 30 calendar days (including weekends and holidays) following initial delivery or prior to our next barge arrival. Alaska Marine Lines equipment destined for Western Alaska villages must be made available at the traditional barge landing by 45 days (including weekends and holidays) following initial delivery. If the equipment is not available, the Bill-to Party will be responsible for demurrage charges of \$9.00 per day for 20' equipment and \$12.00 per day for 40' equipment which will accrue until the equipment is picked up by the Carrier on the next subsequent arrival.



Alaska Marine Lines, Inc.
5615 W. Marginal Way S.W.
Seattle, WA 98124
www.lynden.com/aml

Rate Quote **AML240701072**
Quote Date **01 Jul 2024**

Rates herein are valid for 30 days from the date shown above.

Machinery items deemed by Carrier to be deck stow cargo shall be shipping on a space available basis only.

Diesel powered vehicles or machinery transported during the cold weather months will need to be winterized for shipment. Carrier has no liability for this cargo if the customer fails to properly winterize their vehicle or machinery.

Cargo is transported on open deck barge. Shipper is responsible to sufficiently pack or prepare goods to withstand the normal rigors of barge transportation. Please visit our website for packaging instructions, available at <http://www.lynden.com/aml/tools/tariffs-and-forms.html>.

FOR SHIPMENTS FROM ANCHORAGE TO WESTERN ALASKA: Please deliver cargo to 660 Western Drive, Anchorage, AK 99501. Toll-Free: 1-800-426-3113

All services are subject to the standard terms and conditions of Alaska Marine Lines' tariff and/or bill of lading (available at <http://www.lynden.com/terms-conditions.html>). Any bill of lading or other shipping document issued shall not be effective to the extent it conflicts with our terms and conditions. By shipping with Alaska Marine Lines you are acknowledging acceptance of our terms and conditions. When rates are offered that differ from our common carrier tariffs, those rates are offered as contract rates. By shipping with Alaska Marine Lines you are contractually accepting such terms and conditions and the rates offered, and pursuant to 49 U.S.C. §14101(b) you expressly waive any other rates and terms of service (including rights and remedies) which may be to the contrary.

FOR ALL SHIPMENTS TO or FROM KODIAK: Carrier does not have scheduled service to Kodiak at this time. Please contact our Customer Service group at CSWAKHI@Lynden.com for our latest schedule prior to booking cargo.

Consolidation charges are applied as a flat charge per 20' container (\$373.00) or 20' platform (\$532.00), which includes consolidation and physical transfer of the cargo from Shipper's vehicle, plus an additional per bill of lading charge of \$35.00; charges are not subject to fuel surcharge.

WHARFAGE (VILLAGE PROVISION). Rates do not include wharfage and handling nor any costs associated therewith at the destination village. Rates do not include any charges assessed against the cargo by third parties claiming control of village landing site and/or the surrounding staging area. Shipper shall be responsible for the payment of such charges, if any, including but not limited to charges identified as wharfage, storage or access fees. Any such charges assessed against and paid by Carrier shall be reimbursed by Shipper. **EXCEPTION:** Carrier will not be responsible for charges imposed at Emmonak dock/landing facilities, including but not limited to wharfage and storage; Shipper is responsible to check with local authorities regarding rates and requirements for freight at the dock/landing facilities.



CITY OF BETHEL ACCOUNTS PAYABLE
P O PURCHASES ONLY PO BOX 1388
BETHEL 99559-1388

CUSTOMER NO.	CONTACT	PHONE NO.	FAX NO.	Work Order No.
2641800	CLYDE ERICKSON	907-543-2047		
QUOTE NO.	P.O. NO.	DATE	Email	
206117		2024-07-01		
MAKE	MODEL	SERIAL NO.	UNIT NO.	
AA	324E	OPNW00650		
NOTES				

SEGMENT: 01 SUPPLY PARTS UNDERCARRIAGE ()
NOTES:
IN ORDER FOR DISCOUNT TO BE VALID ALL PARTS MUST
BE STOCK ORDERED.
##3062##

Parts

Part Number	Description	Qty	Unit Price	Ext Price
115-6337	IDLER G	2	1,566.64	3,133.28
567-6435	ROLLER GP-SF	16	477.64	7,642.24
8E-5600	ROLLER GP-CARR	4	318.47	1,273.88
447-1731	BOLT-HEX HEA	64	9.92	634.88
447-1725	BOLT-HEX HEA	4	11.46	45.84
576-4691	LINK AS-TRAC	2	5,363.56	10,727.12
527-8992	SHOE-TRACK	102	123.75	12,622.50
6Y-0846	BOLT	408	3.27	1,334.16
9W-3361	NUT TRACK	408	1.63	665.04
8E-9805	SPROCKET	2	630.86	1,261.72
219-7569	BOLT	32	4.32	138.24
239-4373	RECOIL GP-AD	2	3,967.74	7,935.48
Total Parts:				47,414.38
Segment 01 Total:				47,414.38
Total Segments:				47,414.38
SUB TOTAL (BEFORE TAXES)				47,414.38

- This estimate will expire 30 days from the estimate date.
- Price excludes Freight Charges, Operating Supplies/EPA Fees and Overtime.
- Terms: Net 10th Prox.
- Sales Taxes where applicable are not included with the above prices.

ESTIMATED REPAIR TIME:_____ **from start date**
"The Signature is an authorization to proceed with the required repair work as described within the quote".

Issued PO#_____, **Authorized Name**_____ **Please Print.**

Date_____/_____/_____. _____

Signature

Any Questions? Please Call Bruce Sledge at 907-980-8290.



February 27, 2024

City of Bethel

P.O. Box 1388

Bethel, AK. 99559

Email; jthompson@cityofbethel.net

Cell; 907-545-2884

Subject; Purchase and install 36 – LED 120 street light fixtures on 8' mast arms and install 3 – 40' poles in ASHA courts, please reference work order 1210447 when making payment.

Mr. Thompson,

Alaska Village Electric Cooperative Inc., has completed the material list and estimated cost to complete the install of 36 – LED 120 street light fixtures and 3 new 40' poles. This work includes the purchase and install of 36 fixtures on existing a 3 new poles, a total of \$109,689.78 with a subtotal of \$103,480.93 with \$6,208.86 City of Bethel sales tax.

This work will be scheduled upon payment of \$109,689.78, unless tax exempt then a payment of \$103,480.93, please provide proof of tax exempt status when making payment. Please reference work order 1210447 when making payment. Payment can be made with EFT or credit card by visiting www.avec.org and clicking on "Make Special Payment", you may also call Member Services at 1-800-478-1818 or send check to AVEC at 4831 Eagle Street, Anchorage Ak. 99503, please reference work order 1210447 when making payment. ***Note when using credit card type payments, credit card companies add a transaction fee above AVEC estimated cost.**

Please note that any changes to scope of work caused by customer will be billed to customer.

Please have your electrician contact me at 907-543-2949 to schedule work after payment has been made.

Sincerely,

Lenny O. Welch

Operations Manager

Date: 2/27/2024 Work Order #: 1210447
Pole #: Estimate for 1210447 City of Bethel install 36 LED 120 Street Lights and 3 poles in ASHA courts
New Pole #:

Foreman: Lenny Welch
Changed Pole #:

AVEC	Description	\$ each	QTY	total
5930568	POLE, UTILITY, 40 FT, CLASS 3	\$ 1,128.30	3	3,384.90
5930621	POLE, UTILITY, 45 FT, CLASS 3	\$ 1,205.33		
5930589	POLE, UTILITY, 50 FT, CLASS 3	\$ 1,392.18		
5930587	CROSSARM, 3-3/4" X 4-3/4" X 8'	\$ 52.61		
5930590	BRACE, CROSSARM, 28", WOOD, JAS526	\$ 11.45		
5930591	PIN, CROSSARM, J203Z	\$ 7.25		
5930633	PIN, POLE TOP, JVN J744Z	\$ 18.82		
5930592	INSULATOR, PIN, VICTOR CAT #5R	\$ 5.75		
5930120	BOLT, MACHINE, 3/4" X 14"	\$ 7.19		
5930048	BOLT, MACHINE, 5/8" X 16"	\$ 1.60		
5930124	BOLT, MACHINE, 5/8" X 20"	\$ 4.95		
5930088	BOLT, MACHINE, 5/8" X 8"	\$ 2.73		
5930045	BOLT, MACHINE, 5/8" X 10"	\$ 0.58		
5930046	BOLT, MACHINE, 5/8" X 12"	\$ 2.01		
5930042	BOLT, CARRIAGE, 3/8" X 4-1/2"	\$ 2.58	12	30.96
5930091	BOLT, DA, 5/8" X 18"	\$ 1.12		
5930092	BOLT, DA, 5/8" X 20"	\$ 3.30		
5930125	BOLT, DA, 5/8" X 22"	\$ 6.13		
5930049	BOLT, DA, 5/8" X 24"	\$ 7.85		
5930594	WASHER, FLAT SQ, 2-1/4"X2-1/4"X3/16"	\$ 3.63		
5930122	BOLT, EYE, OVAL, 5/8" X 12"	\$ 0.69	84	57.96
5930021	BOLT, EYE, OVAL, 5/8" X 14"	\$ 6.22	6	37.32
5930050	NUT, OVAL-EYE, 5/8"	\$ 4.53		
5930622	SCREW, LAG, 1/2" X 4-1/2"	\$ 3.00		
5930030	ANCHOR, CROSS PLATE	\$ 0.83	72	59.76
5930595	ANCHOR, 8" X 10", C1100385	\$ 69.71		
5930596	EXTENSION, ANCHOR, 37"L, C1100388	\$ 194.22		
5930597	ADAPTER, TWINEYE GUY, C1020024	\$ 103.85		
5930469	ROD, TRIPLEYE ANCHOR, 3/4" X 8"	\$ 47.28		
5930598	GUY GRIP, 3/8", PREFORMED GDE-2107	\$ 32.00		
5930599	STRANDVISE, 3/8", RELIABLE 5102	\$ 4.73		
5930135	WIRE, GUY (11500#BRK, STK) 3/8"	\$ 19.40		
5930601	INSULATOR, STRAIN, MACLEAN L504	\$ 0.55		
5930509	CABLE, 1/0 - 6/1 ACSR, RAVEN	\$ 7.51		
5930642	CABLE, PRIMARY CONDUCTOR, 2/0 ACSR	\$ 0.32		
5930600	CABLE, PRIMARY CONDUCTOR, 4/0 ACSR	\$ 0.36		
5930508	ROD, ARMOR, #2 ACSR, 56", DBL SUP	\$ 0.52		
5930524	ROD, ARMOR, 1/0 ACSR, SET	\$ 6.55		
5930334	TIE, WRAPLOCK, F-NECK, 15 KV	\$ 5.63		
5930141	EPOXILATOR, 15KV, D-E	\$ 11.25		
5930470	EPOXILATOR, 25KV, POLYMER	\$ 15.87		
5930612	SHOE, DEADEND, ASOD6841N	\$ 13.72		
5930613	CUTOUT, FUSED, 100 AMP C710112PB	\$ 11.46		
5930611	CUTOUT, FUSED (200 AMP)	\$ 113.37		
5930644	CLAMP, HOTLINE	\$ 131.77		
5930624	BRACKET, XFRMR, TRIPLE, 75-333 KVA	\$ 18.95		
5930337	CABLE, #6 DUPLEX, SHEPHERD	\$ 189.95		
5930225	CABLE, #2 TRIPLE, CONCH500'	\$ 0.50	400	200.00
5930604	CABLE, #2 ACSR, SPARROW	\$ 2.35		
5930653	CABLE, TRIPLE, RUNCINA, 2/0, BET	\$ 0.23		
5930626	CABLE, 2/0 QUADRUPEX, SVC COND	\$ 2.77		
5940339	CABLE, 4/0 QUAD, APPALOOSA, XLP	\$ 1.71		
		\$ 5.28		

AVEC	Description	\$ each	QTY	total
5930602	#6 XHHW 600 volt copper	\$ 1.03	1000	1,030.00
5930603	#4 Copper 2400 V	\$ 2.72		
5940084	WIRE, #6, BARE CU/SOLID, SD, 315 ROLL	\$ 0.62	1620	1,004.40
5930605	GUY ATTACHMENT, P135AXW	\$ 3.74		
5930645	GUARD, GUY, JVN J5518 E	\$ 4.06		
5930646	CLAMP, GROUND ROD	\$ 2.54	36	91.44
5930606	CONNECTOR, FARGO, GA9020GLSS	\$ 6.75	36	243.00
5930631	CONNECTOR, FARGO, GA9040GLSS	\$ 20.59		
5930632	CONNECTOR, FARGO, GA9400GLSS	\$ 36.13		
5930616	SPLICE, SVC ENT, #6, RED-RED, INSUL	\$ 0.75		
5930617	SPLICE, SVC ENT, #6, BLUE-BLUE, INSUL	\$ 0.42		
5930609	TERMINAL BLOCK, PED4-350	\$ 8.30		
5930607	TERMINAL BLOCK, PED 8-500	\$ 11.55		
5930610	COVER, TERMINAL BLOCK, PED4-350 CEE	\$ 3.18		
5930608	COVER, TERMINAL BLOCK, PED8-500 SNN	\$ 18.46		
5930619	CLAMP, WEDGE, FLEX BAL, W20, 1/0 ASCR	\$ 4.06	6	24.36
5930620	CLAMP, WEDGE, FLEX BAL, W40, 4/0-2-0	\$ 4.44		
5930650	CONNECTOR, B TAP, 1/0 - #10	\$ 25.47	36	916.92
5930102	BRACKET, XFRMR, TRIPLE, 3-50KVA	\$ 43.00		
5940359	ROD, ARMOR	\$ 295.71		
	8' Mast Arm	\$ 14.50	36	522.00
	LED 120 Street Light Fixture	\$ 230.00	36	8,280.00
	H.P.S. Lamp Watt	\$ 1,815.00	36	65,340.00
	Photo Electric Eye	\$ 47.75	36	1,719.00
	KVA Transformer #			
	fixture, mast, photo eye, #6 XHHW, and #6 solid	\$ 77.373.40	1	77,373.40

Labor	\$ / hr	hrs	total
Labor Hours	\$ 33.40	185	6,179.00
Overhead	190%		11,740.10

Equipment	\$ / hr	hrs	total
Pickup Truck	\$ 14.00	10	140.00
Digger Truck	\$ 67.83	7.5	508.73
Bucket Truck	\$ 52.16	60	3,129.60
Flatbed Truck	\$ 25.46	40	1,018.40
Frontend Loader	\$ 38.10		
Pole Trailer	\$ 10.25		
Wire Reel Trailer	\$ 1.70	4	6.80
17 Ton Crane	\$ 55.30		

ESTIMATED SUBTOTAL 103,480.93
6% City of Bethel Sales Tax 6,208.86
TOTAL ESTIMATED COST 109,689.78

NOTES: Estimate is for the purchase of 36 - LED 120 street light fixtures and install of 36 street light fixtures along with 3 new poles and 3 spans of #6 duplex.
Note: mast arms, LED fixtures, photo eye, #6 XHHW, and #6 solid didn't add to total so was added to in bottom row of parts to add to total

CITY OF BETHEL, ALASKA

Resolution #24-02

**A RESOLUTION BY THE BETHEL CITY COUNCIL
AUTHORIZING ADMINISTRATION TO EVALUATE THE CITY'S CAPACITY FOR
THE ALASKA HOUSING FINANCE CORPORATION'S LAST FRONTIER HOUSING
INITIATIVE GRANT PROGRAM FOR RURAL PROFESSIONAL HOUSING, AND
TO SOLICIT INTEREST FROM OTHER AGENCIES FOR THEIR PASSTHROUGH
ACCEPTANCE OF THE AFFORDABLE HOUSING UNIT FUNDING**

WHEREAS, the City qualifies for \$5 million in grant funding from the Alaska Housing Finance Corporation (AHFC) to construct at least nine new housing units;

WHEREAS, the \$5 million comes from two funding sources with separate objectives:

- \$3 million of the funding is for rural professional housing, requiring six new housing units;
- \$2 million is for affordable housing needs, requiring three new housing units;

WHEREAS, a 15 percent community match (\$750,000 if fully funded) is required, but the match may be in the form of land development or transfer/lease, direct financial contribution, and/or in-kind contributions;

WHEREAS, the City may pass the funding to another appropriate agency for construction and/or maintenance of the buildings and lease programs;

WHEREAS, the Rural Professional Housing Grant Program requires the funds be used to develop teacher, health professional, and public safety housing;

WHEREAS, the operational criteria for the affordable housing units could mirror any federal grant program, however the most common is the Low Income Tax Credit Program, the criteria for which is:

- At least 20 percent of the project's units are occupied by tenants with an income of 50 percent or less of area median income adjusted for family size (AMI).
- At least 40 percent of the units are occupied by tenants with an income of 60 percent or less of AMI.
- At least 40 percent of the units are occupied by tenants with income averaging no more than 60 percent of AMI, and no units are occupied by tenants with income greater than 80 percent of AMI;

Introduced by: Mayor Springer
Date: February 13, 2024
Action: Passed
Vote: 6-0

WHEREAS, September 1, 2025, is the deadline to use the expenditures; and

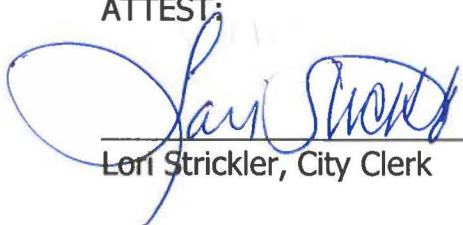
WHEREAS, following Council's authorization to pursue this funding, the city will:

- Identify available city land for professional housing;
- Release requests for bids to identify interest in operating/maintaining the affordable housing grant;
- Release a request for proposal to design and build the five s star energy rated units for the Rural Professional Housing Grant Program;
- Review bid submissions for the affordable housing grant operators.

NOW THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BETHEL that the Bethel City Council authorizes administration to evaluate the City's capacity to accept from AHFC \$3 million dollars to develop six professional housing units; and solicit interest from outside agencies to use the \$2 million available for the affordable housing development.

ENACTED THIS 13th DAY OF FEBRUARY 2024 BY A VOTE OF 6 IN FAVOR AND 0 OPPOSED.

ATTEST:


Lori Strickler, City Clerk


Mark Springer, Mayor



FROM:
Robbie Lynn
 General Manager

6700 Arctic Spur
 Anchorage, Alaska 99518
 Robbie.Lynn@UICCS.com

Phone (907) 762-0104
 Fax (907) 762-0131
 Cell (907) 978-0176

Bethel Dog Pound – Value Engineering Options

May 17, 2024

To: City of Bethel
 Attn.: Carmen Murat, Purchasing Agent
 Phone (907) 348-4218
 Email purchasingagent@cityofbethel.net
 Page Total 2 pages

Reference Value Engineering Options – Bethel Dog Pound

Dear Ms. Murat,

Thank you for providing us the opportunity to provide value engineering options for the above referenced project. Below we have included the alternate pricing and scope clarifications for the work referenced for your review.

Value Engineering Option:

Options	Description	Total Cost
Base Bid	No Design Changes	\$ 2,338,604.00
ALT 01	Change Epoxy Flooring to Heavy Duty Resilient Sheet Flooring	\$ (8,987.00)
ALT 02	Eliminate Ramp and Stairs	\$ (79,788.00)
ALT 03	Eliminate Bollards	\$ (11,788.00)
ALT 04	Reduce Pile Torque to 8000 ft #	\$ (82,365.00)
ALT 05	Eliminate After Hour Drop Off Room	\$ (1,150.00)
ALT 06	Reduce Wall and Soffit IMP Panels from 5" to 4"	\$ (4,178.00)
ALT 07	Replace Aluminum Sliding Doors with Wood Barn Doors	\$ (30,465.00)
ALT 08	Replace Fiberglass Windows with Triple Pane Vinyl Casement Windows	\$ (11,556.00)
ALT 09	Eliminate Playground Fence	\$ (10,120.00)
ALT 10	Replace Kennel Room and Lobby Room Caseworks with Plastic Laminate	\$ (24,800.00)
ALT 11	Eliminate Caseworks at Lobby Area	\$ (3,500.00)
ALT 12	Eliminate all Caseworks except Procedure Room	\$ (16,482.00)
ALT 13	Eliminate Metal Caseworks at Procedure Room	\$ (42,000.00)
Total	Total cost with all value engineering options selected	\$ 2,011,425.00

Notes and Clarifications:

1. UICC assumes award of project prior to June 15, 2024, to meet the last barge. If project is not awarded prior to this date, there may be cost impacts due to increase in schedule and added costs to air freight.
2. Add Alt 10 and Alt 11 to Alt 12 to eliminate all caseworks except for Procedure Room caseworks.

UICC is thrilled and excited about the opportunity to collaborate and contribute with City of Bethel on success of this project. Please don't hesitate to reach out if you have any questions regarding this proposal.

Sincerely,

**Robbie
Lynn**

Digitally signed by
Robbie Lynn
Date: 2024.05.17
14:37:24 -08'00'

Robbie Lynn | General Manager



UIC Construction, LLC
6700 Arctic Spur Rd | Anchorage, AK 99518
direct: (907) 762-0104 | mobile: (907) 978-0176
Main: (907) 762-0100 | www.uicalaska.com
A Member of the Ukpeagvik Iñupiat Corporation Family of Companies

**CITY OF BETHEL
BETHEL, ALASKA**



REQUEST FOR BIDS

Dog Pound Facility

Deadline for Questions/ Protests: Wednesday, April 16, 2024, at 12:00 pm

Opening/ Due Date: Friday, April 26, 2024, at 12:00 pm

Opening Time: 12:00 pm

Opening Place: City of Bethel – City Hall
300 Chief Eddie Hoffman Highway
Bethel, Alaska 99559

BID DOCUMENTS TABLE OF CONTENTS

DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

00 11 13	Advertisement For Bids
00 21 13	Instruction to Bidders
00 41 13	Bid Form
00 43 13	Bid Bond (EJCDC C-430, 2013 edition)
00 52 13	Agreement Between Owner and Contractor for Construction Contract (EJCDC C-520, 2013 edition)
00 61 13.13	Performance Bond (EJCDC C-610, 2013 edition)
00 61 13.16	Payment Bond (EJCDC C-615, 2013 edition)
00 72 13	Standard General Conditions of the Construction Contract (EJCDC C-700, 2013 edition)
00 80 00	Supplementary Conditions (EC-800)

DIVISION 01 GENERAL REQUIREMENTS

01 00 00	General Requirements
01 00 01	Method of Measurement and Basis of Payment

DIVISION 05 METALS

05 40 00	Cold-Formed Metal Framing
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DIVISION 06 WOOD, PLASTICS, AND COMPOSITES

06 10 00	Rough Carpentry
06 10 53	Miscellaneous Rough Carpentry
06 17 53	Shop-Fabricated Wood Trusses and Joists
06 18 00	Glue-Laminated Construction
06 20 00	Finish Carpentry
06 74 00	Composite Gratings
06 83 16	Fiberglass Reinforced Paneling

DIVISION 07 THERMAL AND MOISTURE PROTECTION

07 21 19	Foamed-In-Place Insulation
07 26 00	Vapor Retarders
07 41 13	Metal Roof Panels
07 42 13	Insulated Metal Wall Panels
07 92 00	Joint Sealants

DIVISION 08 OPENINGS

08 11 13	Hollow Metal Doors and Frames
08 30 06	Interior Sliding Doors
08 54 13	Fiberglass Windows
08 80 00	Glazing

DIVISION 09 FINISHES

09 21 16	Gypsum Board Assemblies
09 51 00	Acoustical Ceilings
09 67 00	Fluid-Applied Flooring
09 91 13	Exterior Painting
09 91 23	Interior Painting

DIVISION 10 SPECIALTIES

10 28 00	Toilet, Bath, and Laundry Accessories
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DIVISION 12 FURNISHINGS

12 31 00	Manufactured Metal Casework
12 32 00	Manufactured Wood Casework
12 36 00	Countertops

DIVISION 22 PLUMBING

22 05 00	Common Work Results for Plumbing
22 05 29	Hangers and Supports for Plumbing Piping and Equipment
22 11 00	Facility Water Distribution
22 13 00	Facility Sanitary Sewerage
22 30 00	Plumbing Equipment
22 40 00	Plumbing Fixtures

DIVISION 23 HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

23 05 00	Common Work Results for Mechanical
23 05 29	Hangers and Supports for HVAC Piping and Equipment
23 05 93	Testing, Adjusting, and Balancing for HVAC
23 10 00	Fuel-oil System
23 20 00	HVAC Piping and Pumps
23 31 00	HVAC Ducts and Casings
23 33 00	Air Duct Accessories
23 37 00	Air Outlets and Inlets
23 52 23	Cast Iron Boilers & Accessories
23 73 00	Indoor Central-Station Air-Handling Units

DIVISION 26 ELECTRICAL

26 00 00	Electrical Work, General
26 05 19	Wire and Cables
26 05 26	Grounding
26 05 33	Electrical Raceway Systems
26 24 16	Panelboards
26 27 26	Wiring Devices
26 28 16	Switches and Circuit Breakers
26 36 05	Heavy-Duty Safety Switches
26 50 00	Lighting

DIVISION 31 EARTH WORK

31 20 00 Earth Moving
31 62 16 Helical Anchors

DIVISION 32 EXTERIOR IMPROVEMENTS

32 31 13 Chain Link Fences and Gates

DIVISION 33 UTILITIES

33 07 00 HDPE Insulated Pipe and Fittings

SIGNATURE AND VERIFICATION OF ANTI-COLLUSION

ENGINEERING DOCUMENTS

Dog Pound Facility Drawings

SUPPLEMENTAL INFORMATION

Project Contract Forms

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ADVERTISEMENT FOR BIDS

CITY OF BETHEL
BETHEL, ALASKA

DOG POUND FACILITY

The City of Bethel (Owner) is seeking separate sealed Bids for construction of a new Dog Pound Facility (Project). Bids will be received by the Purchasing Agent at City Hall, located at 300 Chief Eddie Hoffman Highway (or PO Box 1388), Bethel, Alaska 99559, until 12:00 PM local time on Friday, April 26, 2024 at which time the Bids received will be publicly opened and read.

The Project includes construction of a wood framed, elevated structure for kennel and veterinary services.

Bids will be received for a single prime Contract. Bids shall be developed on a lump sum basis with a schedule of values following bidding as indicated in the Bid Form and Method of Measurement and Basis of Payment.

The Issuing Office for the Bidding Documents is:

City of Bethel
C/O Purchasing Agent
Bethel, Alaska 99559
Email: purchasingagent@cityofbethel.net

Prospective Bidders may examine the Bidding Documents at the Issuing Office on Monday through Friday between the hours of 8:00 AM and 5:00 PM and may obtain copies of the Bidding Documents from the Issuing Office.

The Issuing Office has established a Bidding Documents Website:

<https://www.cityofbethel.org/rfps>

Bidding Documents may be downloaded from the designated website. The designated website, and only the designated website, will be updated when necessary with addenda, lists of registered plan holders, and other information relevant to submitting a Bid for the Project.

Bidding Documents may also be examined at The Plans Room LLC (4831 Old Seward Highway, Suite 202, Anchorage, Alaska), The Association of General Contractors (8005 Schoon Street, Anchorage, Alaska), and AGC/The Plans Room (3750 Bonita Street, Fairbanks, Alaska) on Monday through Friday between the hours of 9:00 AM and 4:00 PM; and the office of the Engineer, DOWL (5015 Business Park Boulevard, Suite 4000, Anchorage, Alaska), on Monday through Friday between the hours of 8:00 AM and 5:00 PM.

Each bid must be submitted and sealed in an envelope addressed to City of Bethel C/O Purchasing Agent, Bethel, Alaska 99559 and plainly marked on the outside of the envelope as "Bid for City of Bethel, Dog Pound Facility" and the date and hour of the bid opening. In person bids will be accepted from 11:30 AM to 12:00 PM at the entrance to City Hall (at 300 Chief Eddie Hoffman Highway). Bids may also be mailed to PO Box 1388, Bethel, Alaska 99559, or emailed to the Purchasing Agent.

The prevailing wage rates of the State of Alaska Department of Labor and Safety for Laborers' & Mechanics Minimum Rates of Pay (Pamphlet 600) apply to this project and are hereby incorporated by reference as if fully set forth herein. The successful Bid shall comply with each provision thereof.

Each Bid will be reviewed by the Owner and Engineer for compliance and completeness. Bidders must be in good standing with the City of Bethel. The winning bid will be selected based on the lowest, responsive, qualified bid. Local Bids will receive a five percent (5%) preference in determining the lowest responsible and responsive bid.

The City of Bethel will not be liable for any costs incurred by any Bidder in response to this advertisement. The City of Bethel reserves the right to reject any or all bids without cause.

All questions should be submitted in writing to the Purchasing Agent at purchasingagent@cityofbethel.net

END OF ADVERTISEMENT FOR BIDS

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS
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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office* – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

City of Bethel
C/O Purchasing Agent
Bethel, Alaska 99559
purchasingagent@cityofbethel.net

B. *Local Bidder* – A local bidder means a business that submits a bid with fixed offices or distribution points located within the boundaries of the City of Bethel and who has a current City of Bethel business license and who is at the time bidding in compliance with all requirements of the City of Bethel sales tax ordinance. A Bethel post office box number or residential address may not be used solely to establish status as a local bidder. The Owner reserves the final right to determine local bidder status.

ARTICLE 2 – BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant.

2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents or make them available for examination. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.

2.05 Electronic Documents

- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.
 - 1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version 2017 or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.
- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:
 - A. Evidence of Bidder's authority to do business in the state or jurisdiction of where the Project is located,
 - B. Alaska Contractor's License No.,
 - C. List of proposed Subcontractor(s),
 - D. List of proposed Supplier(s),
 - E. Required Bid security in the form of a Bid Bond (EJCDC No. C-430, 2013),
 - F. List of similar projects over the past five years in the Yukon-Kuskokwim Delta Region including location, size, owner contact name, and telephone, and
 - G. If Bidder is a Local Bidder, a signed letter stating status as a Local Bidder must be provided and the Bidder must show compliance with the definition of a local bidder as found in Article 1 of this section.
- 3.02 Bidders must be in good standing with the Owner. Good standing includes but is not limited to:
 - A. No outstanding debts, fees, payments, or taxes owed to the Owner.

- B. No outstanding claims between the Owner and Bidder, and
 - C. No previous history of default of duty, contract, or obligation to the Owner.
- 3.03 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.04 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.05 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by the Contractor.
 - 1. The existing dog pound structure will be demolished in full by Owner prior to the start of the Project.

4.02 *Existing Site Conditions*

- A. Subsurface, Physical, and Hazardous Environmental Conditions
 - 1. The Supplementary Conditions identify:
 - a. No reports of explorations and tests of subsurface conditions at or adjacent to the Site are being included in the Bid Documents.
 - b. No contaminated sites or Hazardous Environmental Conditions have been identified at or adjacent to the Site.
 - 2. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
 - 3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- B. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in

the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct a voluntary Site visit during normal working hours and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. Examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

- B. Visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. Become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. Consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. Agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. Agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

- 6.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.

- 6.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to the Purchasing Agent in writing. Contact information and submittal procedures for such questions are as follows:

City of Bethel

C/O Purchasing Agent

Email: purchasingagent@cityofbethel.net

- 6.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 6.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 7 – BID SECURITY

- 7.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 7.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 7.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 7.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 8 – CONTRACT TIMES

- 8.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 9 – LIQUIDATED DAMAGES

- 9.01 Provisions for liquidated damages, if any, for failure to timely attain Substantial Completion or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 10.01 The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids in case of a proposed substitute and 5 days prior in the case of a proposed “or equal”. Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. Substitutes and “or-equal” materials and equipment may be proposed by Contractor in accordance with Paragraph 7.04 and 7.05 of the General Conditions after the Effective Date of the Contract.
- 10.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the Work.
- If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 11.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.
- 11.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

- 11.04 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.

ARTICLE 12 – PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
 - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”
- 12.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 12.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be provided on the Bid Form.
- 12.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 12.05 A Bid by an individual shall show the Bidder’s name and official address.
- 12.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 12.07 All names shall be printed in ink below the signatures.
- 12.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 12.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 12.10 The Bid shall contain evidence of Bidder’s authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder’s state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 13 – BASIS OF BID

13.01 *Lump Sum*

- A. Bidders shall submit a Bid on a lump sum basis for each item of Work listed in the bid price section of the Bid Form.

- B. The “Bid Price” (sometimes referred to as the extended price) for each lump sum Bid item will be the “Bid Lump Sum Price” offered by the Bidder. The total of all lump sum Bid items will be the sum of these “Bid Prices”; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
 - C. Discrepancies between the multiplication of units of Work and lump sum prices will be resolved in favor of the lump sum prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 13.02 Per the City of Bethel Municipal Code Chapter 4.20 Purchasing, local Bidders submitting a bid shall receive a five percent (5%) preference in determining the lowest responsible and responsive bid.

ARTICLE 14 – SUBMITTAL OF BID

- 14.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 14.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the Advertisement for Bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.” When using the mail or other delivery system, the Bidder is totally responsible for the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Advertisement for Bid. A mailed Bid shall be addressed to City of BethelC/O: Purchasing Agent, PO BOX 1388, Bethel, Alaska 99559.
- 14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted.

ARTICLE 15 – MODIFICATION AND WITHDRAWAL OF BID

- 15.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that

there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned.

ARTICLE 16 – OPENING OF BIDS

- 16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 18.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 18.03 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 18.04 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
 - B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
- 18.05 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.06 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed

Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

ARTICLE 19 – BONDS AND INSURANCE

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 20 – SIGNING OF AGREEMENT

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 21 – CANCELLATION OF BID PROCESS

- 22.01 The City retains the right to cancel the bid process at any point.

ARTICLE 22 – WAGE RATE REQUIREMENTS

- 22.01 The prevailing wage rates of the State of Alaska apply to this contract as do any requirements of the State of Alaska associated with the use of these State prevailing wages.

ARTICLE 23 – BID PROTESTS

- 23.01 A Bidder may protest a bid result in writing to the Owner within (7) seven calendar days of the Bid opening. Any protests received after seven days will not be accepted. Oral protest will not be accepted.
- 23.02 In order for a protest to be granted, a Bidder must prove by preponderance of the evidence that their Bid was the lowest responsive, responsible Bid.

END OF INSTRUCTION TO BIDDERS

**SECTION 00 41 13
BID FORM****TABLE OF CONTENTS**

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

City of Bethel
 C/O: Purchasing Agent
 Bethel, Alaska 99559
 Email: purchasingagent@cityofbethel.net

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all the terms and conditions of the Advertisement and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all federal, state and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. Bidder will submit written evidence of its authority to do business in the State or other jurisdiction where the Project is located not later than the date of its execution of the 00 52 13 Agreement.
- K. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.
- E. Bidder has not been contacted by any City employee or City Council member for purposes of influencing the City’s bid decision.
 - F. If selected, Bidder will not engage in discriminating against any person because of race, national origin, color, age, creed, religion, sex, sexual orientation, gender identity, political affiliation, marital status, ancestry, disability, or status as a disabled veteran.
 - G. Bidder’s failure to certify to the statements in this section shall result in automatic rejection of the bid.
 - H. If Bidder is found to have been in violation of any of the statements in this section, City shall automatically reject the bid.
 - I. City may cancel a contract if, during the course of such contract, the City finds Bidder to be in violation of any of the sworn statements required by this section.

ARTICLE 5 – BASIS OF BID

- 5.01 Bidder will complete the Work in accordance with the Contract Documents as itemized in the following Bid Schedule:

Item No.	Description	Unit	Bid Amount
101	Mobilization and Demobilization	Lump Sum	\$
102	Construction Survey and Record Drawings	Lump Sum	\$
103	Installation of Dog Pound Facility	Lump Sum	\$
104	Startup/Commissioning of Mechanical Systems and O&M Manuals	Lump Sum	\$
TOTAL			\$

- 5.02 Bidder acknowledges that:

- A. Each Bid Lump Sum Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item.

- B. Bidder will comply with State of Alaska Wage Rates.
- C. If Bidder wishes to submit manufacturer's data for a product for preliminary approval, the bidder must submit the manufacturer's data no later than when questions are due. Preliminary approvals will be granted on a case-by-case basis and are not guaranteed. Preliminary approvals are not to take the place of the submittal review and approval process with the successful bidder.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Required Bid Security.
 - B. List of Proposed Subcontractors.
 - C. List of Proposed Suppliers.
 - D. List of Project References.
 - E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids.
 - F. Contractor's License No.: _____.
 - G. Required Bidder Qualification Statement with supporting data.
 - H. If a local Bidder signed letter stating status as a local Bidder, then show that the Bidder complies with the definition of a local bidder as found in Article 1, Instruction to Bidders.
 - I. Signed and completed Bid Schedule or submittal.
 - J. Signed and dated verification of anti-collusion.

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTALBIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature] _____*[Printed name]* _____*(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest:

[Signature] _____*[Printed name]* _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____

(where applicable)

END OF BID FORM

SECTION 00 43 13 BID BOND (PENAL SUM FORM)

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

City of Bethel
PO Box 1388
Bethel, Alaska 99559

BID

Bid Due Date: Friday, April 26, 2024

Description (*Project Name— Include Location*): Dog Pound Facility, Bethel, Alaska

BOND

Bond Number:

Date:

Penal sum _____ \$

(Words)

(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal

(Seal)

Surety's Name and Corporate Seal

(Seal)

By:

Signature

By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Signature

Attest:

Signature

Title

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

SECTION 00 52 13

AGREEMENT

FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between City of Bethel, P.O. Box 1388, Bethel, AK 99559 ("Owner") and
("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

ARTICLE 2 – THE PROJECT

2.01 *The Project, of which the Work under the Contract Documents is a part, is generally described as follows: All materials, equipment, labor, and related services to construct **a wood framed, elevated structure for kennel and veterinary services.***

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by **DOWL, 5015 Business Park Blvd, Suite 4000, Anchorage, Alaska, 99503.**

3.02 The Owner has retained **DOWL** ("Engineer") to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Contract Times: Dates

A. The Work will be substantially completed on or before **November 30, 2024**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **December 31, 2024**.

4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$ 250 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$ 500 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
4. ~~Milestones: Contractor shall pay Owner \$ _____ for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved.~~

~~B. Bonus: Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor \$ _____ for each day prior to the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus shall be limited to \$ _____.~~

1.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the **1st (first)** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. **Ninety (90)** percent of Work completed (with the balance being retainage), and
 - b. **Ninety (90)** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
 - B. Upon Substantial Completion of the entire Work to be provided under the Contract Documents, Owner shall pay an amount sufficient to increase total payments to Contractor to **Ninety-eight (98)** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **Two Hundred (200)** percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.
- 6.03 *Final Payment*
- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

- 7.01 All amounts not paid when due shall bear interest at the rate of **Eight (8)** percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods,

techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement (EJCDC C-520 pages 1 to 7, inclusive).
 - 2. Performance bond (EJCDC C-610 pages 1 to 3, inclusive).
 - 3. Payment bond (EJCDC C-615 pages 1 to 3, inclusive).
 - 4. General Conditions (EJCDC C-700 pages 1 to 69, inclusive).
 - 5. Supplementary Conditions (EJCDC C-800 pages 1 to 4, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings (not attached but incorporated by reference) consisting of 45 sheets with each sheet bearing the following general title: Dog Pound Facility
 - 8. Addenda (numbers ___ to ___, inclusive).
 - 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages ___ to ___, inclusive).
 - 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.

- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

AGREEMENT
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4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

City of Bethel _____

By: _____

Title: _____

Attest: _____

Title: _____

Address for giving notices:

CONTRACTOR:

By: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attaches evidence of authority to sign.)

Attest: _____

Title: _____

Address for giving notices:

License or
Registration
No.:

(where applicable)

**SECTION 00 61 13.13
PERFORMANCE BOND**

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

City of Bethel
P.O. Box 1388
Bethel, Alaska 99559

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):* Dog Pound Facility, Bethel, Alaska

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

(seal)

Contractor's Name and Corporate Seal

By: _____
Signature

Print Name

Title

Attest: _____
Signature

Title

SURETY

(seal)

Surety's Name and Corporate Seal

By: _____
Signature *(attach power of attorney)*

Print Name

Title

Attest: _____
Signature

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:
 - 3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
14. Definitions
 - 14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
16. Modifications to this Bond are as follows:

SECTION 00 61 13.16
PAYMENT BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

City of Bethel
P.O. Box 1388
Bethel, Alaska 99559

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):* Dog Pound Facility, Bethel, Alaska

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
 - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 7. The total amount of previous payments received by the Claimant; and
 8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
 - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
 - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural

requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such

construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work. **A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.**

1.02 *Terminology*

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.
- D. **Contractor shall use forms EJCDC No. C-610 and C-615 (2013 ed.) for the Labor and Material Payment Bond and Performance Bond. Each bond shall be in the amount of 100 percent of the contract amount. City of Bethel shall be named as co-obligee or a separate Warranty Bond shall be provided to them upon completion of the work.**

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor **four (4)** printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and
 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.
 4. **Contractor shall submit a preliminary list of construction equipment with hourly rates, owned or rented by the Contractor and all Subcontractors that will be used in the performance of the Work. The equipment list will include information necessary to confirm the hourly rates per Paragraph 13.01.B.5.c of these General Conditions including: make, model, and year of manufacture as well as horse power, capacity or weight and accessories.**

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.
- C. **A preconstruction conference will be held in Bethel and will be coordinated with the Contractor after bid opening.**

2.05 *Initial Acceptance of Schedules*

- ~~A. Prior to the first application for payment all schedules and documents identified in paragraph 2.03 shall be finalized and acceptable to Owner and Engineer. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer and Owner as provided below. Acceptance of these schedules and documents by either Engineer or Owner will neither impose on Engineer or Owner responsibility for sequencing, scheduling or progress of the Work and will not interfere with or relieve Contractor from Contractor's full responsibility therefore. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and~~

~~adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.~~

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
4. **Contractor's Schedule of Equipment will be acceptable to Engineer as to form and substance if it provides the necessary information to reference the equipment and establish the hourly rates in accordance with paragraph 13.01.B.5.c.**

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment

of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. abnormal weather conditions;
 - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. **If it is necessary or desirable that the Contractor use land outside of the Owner's site, easement or right-of-way, the Contractor shall obtain consent from the property owner and tenant of the land. The Contractor shall not enter for material delivery, storage or occupy for any other purpose with men, tools, equipment, construction material, or with materials excavated from the site, any private property outside the designated limits of the construction site, easement boundaries, or right-of-way without written permission from the property owner and tenant.**

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste

materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

- C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.
 - 4. **Contractor is required to visit the site and become familiar with and satisfied as to the general, local, and site conditions that may affect cost, progress, performance, and furnishing of the Work. This is to involve an alert, heads-up, eyes open, reasonable examination of the area and the conditions under which the Work is to be performed (See 5.04 D.2b)**

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition **within 15 calendar days of discovery**. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

No Change Proposal or Claim for an adjustment in Contract Price or Contract Time (including Milestones) will be valid for differing subsurface or physical conditions if notice provisions of the Paragraph 5.04 are not followed.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

- b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
- 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
- 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 - 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 - 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

- d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
 - e. **Before beginning any excavation, the Contractor shall contact the appropriate "one call" underground utility locate service and/or notify all owners of underground facilities (as applicable) and coordinate the Work with the owners of such underground facilities. The information shown or indicated in the Contract Documents with respect to existing underground facilities is based on information and data obtained from the owners of the facilities without field exploration and as such Owner and Engineer are not responsible for the accuracy or completeness of such information or data.**
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site **is unusual and payment per the applicable unit price item Bid for encountering existing Underground Facilities isn't applicable** was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
1. Contractor shall **be paid at the unit price Bid for encountering Underground Facilities and will not** be entitled to **additional** equitable adjustment in the Contract Price or Contract Times, or both, **unless the Engineer's review determines that the existing facility is unusual and shouldn't be covered by the unit price and the** ~~to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related~~ ~~causes~~ causing an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 Hazardous Environmental Conditions at Site

A. Reports and Drawings: The Supplementary Conditions identify:

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
2. Technical Data contained in such reports and drawings.

B. Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for

whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such

notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 Contractor's Insurance

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance:* If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself,

then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
 1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. allow for the waiver of the insurer's subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during daytime hours (7:00 AM to 7:00 PM), Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
- b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract

Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. **The Contractor shall not award work valued at more than fifty percent (50%) of the Contract Price to Subcontractor(s), without prior written approval of the Owner.**
- B. ~~**Deleted.** Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.~~
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. ~~Owner also may require Contractor to retain specific replacements; provided, however, that~~ Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 Patent Fees and Royalties

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents

is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer. **The Engineer will transfer the Contractor's record information to the original drawings, and submit prints to the Contractor for review. Contractor shall provide writing confirmation that the record drawings are complete and accurate before final payment is approved by the Engineer.**

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.
- H. **It is expressly understood by the parties to this Agreement that the Contractor is solely responsible for initiation, maintenance, and supervision of safety precautions and programs in connection with the Work. The right of the Owner and Engineer to observe or otherwise review the Work and operations shall not relieve the Contractor from any of his covenants and obligations hereunder.**
- I. **The Contractor shall be responsible for and shall take necessary precautions and provide all material and equipment to protect, shore, brace and maintain all underground pipes, conduits, drains, sewers, water mains, gas mains, cables, and other underground construction uncovered in the proximity or otherwise affected by the Work. All pavement surfacing, driveways, curbs, walks, buildings, grass areas, trees, utility poles or guy wires damaged by the Contractor in performance of the Work shall be repaired and/or replaced to the satisfaction of the Owner, Engineer and effected property owner at the Contractor's expense. The Contractor shall also be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges or other public or private property or facility, regardless of location or character, which may be caused by moving, hauling, or otherwise transporting equipment, materials, or men to and from the Work whether by Contractor or Subcontractors. The Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over the damaged property or facility concerning its repair, replacement or payment of costs incurred in connection with said damage.**
- J. **The Contractor shall conduct its work so as to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct or close roads, driveways, and walks, whether public or private, the Contractor shall obtain approval from the**

governing party and shall at its own expense provide and maintain suitable and safe bridges, detours and other temporary expedients for the accommodation of public and private drives before interfering with them. The provision for temporary expedients will not be required if the Contractor has obtained permission from the owner and tenant of the private property, or from the authority having jurisdiction over public property involved, to obstruct traffic at the designated point.

- K. **Safety provisions must be entirely adequate and meet with city, state or Federal regulations to protect the public on the sidewalks, streets and roads.**

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

- A. *Shop Drawing and Sample Submittal Requirements:*
1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
 2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.

- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
1. **Contractor specifically and expressly waives any immunity that may be granted it under workers' compensation acts, disability benefit acts, or other employee benefit acts in**

regard to 17.1.B above; provided Contractor's waiver of immunity by the provisions of this paragraph extends only to claims against Contractor by Indemnitees, and does not include, or extend to, any claims by Contractor's employees directly against Contractor.

- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was

provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

10.01 *Owner’s Representative*

- A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. A Project Representative will also represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer’s consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer’s authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer’s authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer’s authority as to Change Orders is set forth in Article 11.

D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
 - 3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change

Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually

performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

- d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 - 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time

thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*:
1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take

action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to

Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. ~~Rentals of~~ **The cost for the use of** all construction equipment and machinery, and the parts thereof, **whether owned by the Contractor or** rented from Contractor or others **shall be calculated as follows and include the** ~~in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof~~ **for equipment involved only in the changed portion of the work covered under the Cost of the Work method. Transportation, loading and assembly costs will not be included for equipment already on the site which is being used for other portions of the Work. Hourly equipment and machinery rates shall be calculated from the Rental Rate Blue Book for Construction Equipment, and the equipment list submitted according to Paragraph 2.03 and 2.05 and as follows. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.**
 - 1) **For working equipment, the hourly rate shall be the monthly rental rate divided by 176 hours per month plus the hourly operating cost.**
 - 2) **For equipment on standby, the hourly rate shall be 50% of the monthly rental rate divided by 176 hours per month and the hourly operating cost shall not be applied.**
 - 3) **For specialized equipment rented for a short duration used for change order work or additional work not part of the scope of the Work bid, the equipment rental rate will be in accordance with the terms of a third party rental agreement or shall be negotiated prior to the work being performed.**

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by

a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

- E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.

- E. **The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions** ~~Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:~~
1. **if the extended price of a particular item of Unit Price Work amounts to five percent (5%) or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than twenty-five percent (25%) from the estimated quantity of such item indicated in the Agreement; and**
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the

benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the

materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner. **Payment for materials in storage shall be based on the actual cost of the materials and equipment to Contactor and shall not include any overhead or profit. Documentation warranting Owner has received the materials and equipment free and clear of all Liens will be waived for the material in storage included in the first progress payment. However, proof of payment and clear title must be submitted with Application No. 2 for all material included in Application No. 1. Without such documentation amounts paid per Application No. 1 for materials in storage will be deducted from Application No 2. Beginning with the second application, all payment for materials in storage will require documentation warranting that Owner is receiving the materials free and clear of all liens.**

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement. **Retainage may be used by Owner to offset costs for any of the losses enumerated in Paragraphs 15.01.C.6.a through 15.01.C.6.e inclusive, 15.01.E.1.a through 15.01.E.1.i inclusive or 16.02.E. In additions retainage may be used by the Owner to protect against loss from failure of the Contractor to complete necessary work and to offset any liquidated damages due Owner.**

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest retainage for the benefit of the Contractor.

4. **Each Application for Payment shall be accompanied by Contractor's updated progress schedule, shop drawing schedule, procurement schedule, and other data specified herein. Owner reserves the right to required submission of certified payroll records by the Contractor.**

C. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work

- under Paragraph 13.03, and any other qualifications stated in the recommendation); and
- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

1. **The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency (if applicable) for consideration. If both Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provision of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.** ~~Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.~~

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written

notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer or Owner does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor. **Contractor shall immediately correct the deficiencies and re-notify the Engineer in writing that the Work is substantially complete.**
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's

risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer **and Owner**, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work, **and**
 - f. **record documents.**
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final

payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which

Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days

to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a

Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00 80 00

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

To the greatest extent possible the modifications to the Standard General Conditions of the Construction Contract (EJCDC 700) have been made electronically in the text of the General Conditions. The modifications are shown in the General Conditions as strikeout for deletions and bold/underline for additions. These Supplementary Conditions contain additional “project specific” changes, additions or modifications.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

SC-5.03.A. Replace subparagraph 5.03.A. with:

- A. ***Reports and Drawings:*** The Supplementary conditions include no reports of explorations or tests of subsurface conditions at or adjacent to the Site.

SC-5.06 Hazardous Environmental Conditions at Site

SC-5.06.A. Replace subparagraph 5.06.A. with:

- A. ***Reports and Drawings:*** The Supplementary conditions do not identify reports or drawings of Hazardous Environmental Conditions or adjacent to the Site.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.03 Contractor's Liability Insurance

Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Employer's Liability:	
Bodily injury, each accident	<u>\$1,000,000</u>
Bodily injury by disease, each employee	<u>\$1,000,000</u>
Bodily injury/disease aggregate	<u>\$1,000,000</u>

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	<u>\$2,000,000</u>
Products - Completed Operations Aggregate	<u>\$1,000,000</u>
Personal and Advertising Injury	<u>\$1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	<u>\$1,000,000</u>

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Combined Single Limit \$1,000,000

4. Excess or Umbrella Liability:

Per Occurrence	<u>\$4,000,000</u>
General Aggregate	<u>\$4,000,000</u>

5. Contractor's Pollution Liability:

Each Occurrence	<u>NA</u>
General Aggregate	<u>NA</u>

☒ If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following:

a.

7. Contractor's Professional Liability:

Each Claim	<u>NA</u>
Annual Aggregate	<u>NA</u>

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.12 Safety and Protection

- A. The Contractor is to prepare and maintain a project specific health and safety plan. Health and Safety plan will be subject to review and approval by Engineer and Owner.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

SC-17.02 Arbitration

- A. All matters subject to final resolution under this Article will be decided by arbitration in accordance with the Construction Industry Rules of the American Arbitration Association subject to the conditions and limitations of this paragraph. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract. The demand for arbitration will be made within the specific time required in this Article, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations. The demand for arbitration should include specific reference to Paragraph SC-17.02.D below.
- C. No arbitration arising out of or relating to the Contract shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and
 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.
- D. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties, in writing, and include a concise breakdown of the award, and a written explanation of the award specifically citing the Contract provisions deemed applicable and relied on in making the award.

- E. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.**
- F. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor.**

SECTION 01 00 00 GENERAL REQUIREMENTS

PART 1 - SCOPE OF WORK

1.01 General

The Project consists of the construction of a wood framed, elevated structure for kennel and veterinary services as described in the project drawings.

PART 2 - PRE-CONSTRUCTION REQUIREMENTS

2.01 NONE

PART 3 - EXTRA OR DISPUTED WORK REPORTS

- 3.01 If payment for work performed is to be based on time and materials, or if a claim is contemplated in which time and material reports would assist in settling the claim, the Contractor shall maintain adequate records on the Daily Report forms available from the Engineer. The reported work shall have the Engineer's signature to indicate his concurrence prior to being submitted to the Engineer or Contract Administrator within 48 hours of the time the work was performed. Concurrence by the Engineer does not indicate agreement to or authorization of "extra work" or "extra payment" but rather indicates agreement that the work effort recorded during that time period was in fact done.

PART 4 - MATERIAL TESTING AND INSPECTION

4.01 Contractor's Obligation

- A. The Contractor shall obtain and pay for all testing that may be necessary to qualify Contractor-furnished materials for use in the work. This shall include material quality tests, mix designs, equipment and plant calibration, and other similar tests required to qualify Contractor-furnished materials for compliance with the specifications. The Contractor shall submit test results to the Engineer sufficiently in advance of the work so that approval to proceed is received by the Contractor prior to using that material in the work.
- B. Samples of material required for testing shall be furnished by the Contractor.
- C. The Contractor is responsible for coordinating with the Engineer and requesting all testing, including field testing paid for by the Owner.
- D. The Contractor shall pay for all failing field tests performed to monitor construction control of the materials used in the work.
- E. Payment for failing field tests will be deducted from any amounts due or to become due to the Contractor.

4.02 Owner's Obligation

- A. The Owner will be paying for the Engineer to be onsite part-time during the construction.

PART 5 - WEATHER LIMITATIONS

- 5.01 The Contractor shall protect each increment of completed work against detrimental effects due to weather, by approved methods. Any increment of completed work that is damaged by freezing or rain, shall be reconditioned, reshaped, re-compacted, or replaced by the Contractor in conformance with the requirements of this specification without additional cost to the Owner.

PART 6 - NOTICE TO BE GIVEN

- 6.01 Contractor shall notify the Engineer at least 72 hours prior to the following:
- A. On-site testing, and
 - B. Temporary blockage or rerouting of traffic.

PART 7 - LABOR STANDARDS, REPORTING, AND PREVAILING WAGE RATES DETERMINATIONS

- 7.01 The prevailing wage rates of the State of Alaska apply to this contract as do any requirements of the State of Alaska associated with the use of these State prevailing wages.

PART 8 - EXECUTION OF WORK

- 8.01 Survey Control
- Benchmarks, monuments, and baselines shown on the Drawings, shall be used for horizontal and vertical control by the Contractor. Caution shall be used when working near these and other survey monuments so as not to disturb them.
- 8.02 Disturbing Existing Monuments and Property Corners
- Should the Contractor's normal prosecution of work require that he disturb any property corners or survey monuments, he shall re-establish them after completion of the project and at no additional cost to the Owner. All referencing and re-establishment of property corners and survey monuments shall be performed by a Land Surveyor registered in the State of Alaska.
- 8.03 Construction Survey
- All construction survey stakes will be placed by the Contractor, based on the reference points indicated in the Drawings.
- 8.04 Traffic Control
- Contractor shall not block or inhibit movement of City of Bethel vehicles entering or leaving the Public Works facility. Emergency operations could require access to the facility 24 hours per day.

PART 9 - AS-BUILTS**9.01 General**

The Contractor shall provide the Owner as-built information on all construction. This information will include copies of the Contractor's field survey notes and a set of the Drawings red-lined with as-built information. Items to be as-built by the Contractor, include, but not are limited to, the water main alignments, culverts length and location, service line placement, service boxes, etc.

A. Control

Basis for horizontal control for as-built information shall be the system of stationing shown on the Drawings. All elevations shall be based on the datum used for design.

B. Survey Notes

All field survey notes shall include date, name of surveyor or foreman, and adequate description of TBM's when used. Sketches shall have north arrow and show relationship or ties to stationing control. All notes shall be reduced to show actual elevation at design datum.

END OF GENERAL REQUIREMENTS

SECTION 01 00 01

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

PART 1 - GENERAL

1.01 Scope

The method of measurement and basis of payment is described in this section.

1.02 General

- A. The total bid price for each item of the Contract shall cover all work shown on the Construction Drawings and required by the Specifications and other Contract Documents. All costs in connection with the Work, including furnishing all materials, equipment, supplies and appurtenances; providing all construction, equipment, and tools, performing all necessary labor and supervision to fully complete the Work and associated start-up and Commissioning, shall be included in the unit and lump sum bid prices. No item required by the Contract Documents for the proper and successful completion of the Work will be paid for outside of or in addition to the prices submitted in the bid. All work not specifically set forth as a pay item in the Bid Form included but not limited to reclamation, sodding, topsoil, seed, reinstalling existing signs and fences, replacing construction caused damaged signs and driveways, shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the bid prices. Bid prices will also apply to additional similar work that is not shown on the plans that the Engineer may require to be installed during the project.
- B. All work completed under the Contract will be measured by the Engineer according to the United States Standard Measure. A station when used as a definition or term of measurement shall be 100 linear feet measured horizontally, unless otherwise specified.
- C. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the Contract will be those methods generally recognized as conforming to standard engineering practice.
- D. Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual items having an area of nine square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Drawings or ordered in writing by the Engineer.
- E. All items which are measured by the linear foot, such as pipe culverts, sewers or water lines, will be measured parallel to the base or foundations upon which structures are placed, unless otherwise shown on the Drawings.

1.03 ESTIMATED QUANTITIES

- A. The basis of payment for work and materials will be by lump sum as indicated. The Contractor shall supply a schedule of values for each lump sum item to be reviewed and approved by the Engineer.
- B. The Contractor agrees to make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts herein.

- C. If the Contractor desires to receive payment for materials in storage for any bid item, the Contractor shall provide a breakout of all materials and their actual costs for that bid item. The Contractor shall furnish the Engineer copies of the supplier's invoices relating to the breakout to verify all materials being requested for payment under that bid item. The Contractor shall furnish copies of the required invoices no later than 5 business days before the cut-off-date of each progress payment. Invoices received later than 5 business days before the cutoff date will not be included in that progress payment. Materials in storage will only be paid for major bid items and will not be paid for associated items such as nuts, bolts, glue, gaskets, tools, etc. Materials in storage are Contractor responsibility and Contractor must provide insurance to cover any loss, theft, damage, etc. Quantities to be utilized on the monthly pay request will be based on signed daily quantities.
- D. The following applies to materials in storage; materials in storage will only be allowed on the first three pay requests received from the Contractor unless otherwise agreed to by the Engineer. Materials in storage must be tied to an actual bid item, and quantities in storage must be removed from the storage quantity as work progresses. All materials in storage will be removed from the pay estimate no later than the sixth pay estimate, for each construction season. Any materials ordered and stored over the winter shall be secured and properly covered in accordance with the material manufactures recommendations and per the Engineer's directions.
- E. Contractor shall develop a form on which to record the percent complete for all lump sum bid items and submit the form at the preconstruction meeting, to the Engineer for approval. At the end of each pay period the Engineer and Contractor must agree on bid schedule values and the percent completion actually installed. A copy signed by the Contractor must be distributed to the Resident Project Representative on a monthly basis 5 days before the monthly pay period ends. Payment for lump sum items shall be made in accordance with the agreed upon percent complete each progress payment.

1.04 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

A. BID SCHEDULE

101 – Mobilization and Demobilization (Lump Sum)

Payment will be made on a lump sum basis for all Contractor Mobilization and Demobilization efforts. Disposal of unsalvageable materials at local landfill shall be incidental to Mobilization and Demobilization. Bonding and Insurance requirements shall be incidental to this Pay Item.

102 – Construction Survey and Record Drawings (Lump Sum)

Payment will be made on a lump sum basis for all work associated with conducting a construction survey, maintaining on-site construction record drawings, and submitting final record drawings. Preparation of all detailed record drawings in accordance with the specifications will also be paid under this item. Forty percent (40%) of this line item will be withheld until the Engineer approves record drawings.

103 – Installation of Dog Pound Facility (Lump Sum)

Payment will be made on a lump sum basis for all Work required to complete the Dog Pound Facility shown on the Drawings and specified herein, including the site development and utilities. This Pay Item shall include all Work not specified in other pay items and all Work necessary to provide a final finished project capable of the performance specified for all

components and systems of the project.

104 – Commission Mechanical Systems and Provide O&M Manuals (Lump Sum)

Payment will be made on a lump sum basis for Contractor to provide the equipment, personnel, and logistical support to perform all system Startup, Testing, and Commissioning Work specified including preparation and submittal of Facility Operation and Maintenance manuals, and City training.

END OF METHOD OF MEASUREMENT AND BASIS OF PAYMENT

SECTION 05 40 00 COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Exterior non-load-bearing wall framing.

B. Related Requirements:

1. Section 05 50 00 "Metal Fabrications" for miscellaneous steel shapes, masonry shelf angles, and connections used with cold-formed metal framing.
2. Section 09 22 16 "Non-Structural Metal Framing" for standard, interior non-load-bearing, metal-stud framing, with height limitations and ceiling-suspension assemblies.

1.02 ACTION SUBMITTALS

A. Product Data: For the following:

1. Cold-formed steel framing materials.
2. Load Bearing wall framing
3. Interior non-load-bearing wall framing.
4. Vertical deflection clips.
5. Post-installed anchors.
6. Power-actuated anchors.

B. Shop Drawings:

1. Include layout, spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

C. Delegated Design Submittal: For cold-formed steel framing.

1.03 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Welding certificates.

C. Product Certificates: For each type of code-compliance certification for studs and tracks.

D. Product Test Reports: For each listed product, for tests performed by [manufacturer and witnessed by a qualified testing agency] [a qualified testing agency].

1. Steel sheet.

2. Expansion anchors.
3. Power-actuated anchors.
4. Mechanical fasteners.
5. Miscellaneous structural clips and accessories.

1.04 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM E329 for testing indicated.
- B. Product Tests: Mill certificates or data from a qualified independent testing agency, or in-house testing with calibrated test equipment, indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- C. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association the Steel Framing Industry Association the Steel Stud Manufacturers Association or the Supreme Steel Framing System Association.
- D. Welding Qualifications: Qualify procedures and personnel according to the following:
 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
- E. Comply with AISI S230 "Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings."

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect and store cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling as required in AISI S202.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 1. CEMCO; California Expanded Metal Products Co.
 2. MRI Steel Framing, LLC.
 3. Mill Steel Framing; Mill Steel Company.
 4. SCAFCO Steel Stud Company; Stone Group of Companies.

2.02 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design cold-formed steel framing.
- B. Structural Performance: Provide cold-formed steel framing capable of withstanding design loads within limits and under conditions indicated.
 - 1. Design Loads: As indicated on Drawings.
 - 2. Deflection Limits: Design framing systems to withstand service-level (ASD) loads without deflections greater than the following:
 - a. Exterior Load-Bearing Framing: Horizontal deflection of $L/180$ of the wall height.
 - b. Interior Non-Load-Bearing Framing: Horizontal deflection of $L/180$ of the wall height. Under a horizontal load of 5 lbf/sq. ft.
 - 3. Design framing systems to provide for movement of framing members located outside the insulated building envelope without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
 - 4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:
 - a. Upward and downward movement of $L/240$ (based on span of structural member).
- C. Cold-Formed Steel Framing Standards: Unless more stringent requirements are indicated, framing complies with AISI S100 and AISI S240.

2.03 COLD-FORMED STEEL FRAMING MATERIALS

- A. Framing Members, General: Comply with AISI S240 for conditions indicated.
- B. Steel Sheet: ASTM A1003/A1003M, Structural Grade, Type H, metallic coated, of grade and coating designation as follows:
 - 1. Grade: As required by structural performance.
 - 2. Coating: G90 or equivalent.
- C. Steel Sheet for Vertical Deflection Clips: ASTM A653/A653M, structural steel, zinc coated, of grade and coating as follows:
 - 1. Grade: As required by structural performance.
 - 2. Coating: G90.

2.04 LOAD-BEARING WALL FRAMING

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: 0.0329 inch.
 2. Flange Width: 1-3/8 inches minimum..
- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: 0.0329 inch minimum, Matching steel studs.
 2. Flange Width: 1-1/4 inches.
- C. Steel Box or Back-to-Back Headers: Manufacturer's standard C-shapes used to form header beams, of web depths indicated, unpunched, with stiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: 0.0329 inch.
 2. Flange Width: 1-3/8 inches minimum..

2.05 INTERIOR NON-LOAD-BEARING WALL FRAMING

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: 0.0329 inch.
 2. Flange Width: 1-3/8 inches minimum..
- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: 0.0329 inch minimum, Matching steel studs.
 2. Flange Width: 1-1/4 inches.
- C. Vertical Deflection Clips, Exterior: Manufacturer's standard bypass clips, capable of accommodating upward and downward vertical displacement of primary structure through positive mechanical attachment to stud web.
- D. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal loads and transfer them to the primary structure, and as follows:
1. Minimum Base-Metal Thickness: 0.0428 inch minimum, Matching steel studs.
 2. Flange Width: 1-1/4 inches.

2.06 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories from ASTM A1003/A1003M, Structural Grade, Type H, metallic coated steel sheet, of same grade and coating designation used for framing members.
- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
1. Supplementary framing.

2. Bracing, bridging, and solid blocking.
3. Web stiffeners.
4. Anchor clips.
5. End clips.
6. Foundation clips.
7. Hole-reinforcing plates.
8. Backer plates.

2.07 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A36/A36M, zinc coated by hot-dip process according to ASTM A123/A123M.
- B. Post-Installed Anchors: Fastener systems with bolts of same basic metal as fastened metal, if visible, unless otherwise indicated; with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 ICC-ES AC193 ICC-ES AC58 or ICC-ES AC308 as appropriate for the substrate.
 1. Uses: Securing cold-formed steel framing to structure.
- C. Power-Actuated Anchors: Fastener systems with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Mechanical Fasteners: ASTM C1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.
 1. Head Type: Low-profile head beneath sheathing; manufacturer's standard elsewhere.
- E. Welding Electrodes: Comply with AWS standards.

2.08 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: ASTM A780/A780M MIL-P-21035B or SSPC-Paint 20.

2.09 FABRICATION

- A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
 1. Fabricate framing assemblies using jigs or templates.
 2. Cut framing members by sawing or shearing; do not torch cut.
 3. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

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Cold-Formed Metal Framing

- b. Locate mechanical fasteners and install according to Shop Drawings, with screws penetrating joined members by no fewer than three exposed screw threads.
- 4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies by means that prevent damage or permanent distortion.
- C. Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable variation of 1/8 inch in 10 feet and as follows:
 - 1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error are not to exceed minimum fastening requirements of sheathing or other finishing materials.
 - 2. Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, conditions, and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

- A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed steel framing according to AISI S200, AISI S202, and manufacturer's written instructions unless more stringent requirements are indicated.
- C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
 - 1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.
- D. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
 - 1. Cut framing members by sawing or shearing; do not torch cut.
 - 2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

- b. Locate mechanical fasteners, install according to Shop Drawings, and comply with requirements for spacing, edge distances, and screw penetration.
- E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- F. Install temporary bracing and supports to secure framing and support loads equal to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Fasten hole-reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.

3.03 INSTALLATION OF LOAD-BEARING WALL FRAMING

- A. Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends, and at spacings as follows:
 - 1. Anchor Spacing: As indicated on Drawings.
- B. Squarely seat studs against top and bottom tracks, with gap not exceeding 1/8 inch between the end of wall-framing member and the web of track.
- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar configurations.
- D. Align studs vertically where floor framing interrupts wall-framing continuity. Where studs cannot be aligned, continuously reinforce track to transfer load.
- E. Align floor and roof framing over studs according to AISI S200, Section C1. Where framing cannot be aligned, continuously reinforce track to transfer loads.
- F. Anchor studs abutting structural columns or walls, including masonry walls, to supporting structure.
- G. Install headers over wall openings wider than stud spacing. Locate headers above openings. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web stiffeners, or gusset plates.
 - 1. Frame wall openings with not less than a double stud at each jamb of frame. Fasten jamb members together to uniformly distribute loads.
 - 2. Install tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.
- H. Install supplementary framing, blocking, and bracing in stud framing indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing.

1. Install supplementary framing, blocking, and bracing in stud framing indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing.
- I. Install horizontal bridging in stud system, spaced vertically 48 inches. Fasten at each stud intersection.
 1. Channel Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs with a minimum of two screws into each flange of the clip angle for framing members up to 6 inches deep.
 2. Strap Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
 3. Bar Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.
- J. Install miscellaneous framing and connections, including supplementary framing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.04 INSTALLATION OF INTERIOR NON-LOAD BEARING WALL FRAMING

- A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure.
- B. Fasten both flanges of studs to top and bottom track unless otherwise indicated. Space studs as follows:
 1. Stud Spacing: As indicated on Drawings.
- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.
- D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.
 1. Connect vertical deflection clips to bypassing studs and anchor to building structure.
- E. Install horizontal bridging in wall studs, spaced vertically in rows indicated on Shop Drawings but not more than 48 inches apart. Fasten at each stud intersection.
 1. Channel Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
 2. Strap Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
 3. Bar Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.

- F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.
- G. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.05 INSTALLATION TOLERANCES

- A. Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 - 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error are not to exceed minimum fastening requirements of sheathing or other finishing materials.

3.06 REPAIR

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A780/A780M and manufacturer's written instructions.

3.07 FIELD QUALITY CONTROL

- A. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Field and shop welds will be subject to testing and inspecting.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Cold-formed steel framing will be considered defective if it does not pass tests and inspections.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.08 PROTECTION

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF COLD-FORMED METAL FRAMING

SECTION 06 10 00 ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Wood products.
 - 2. Wood-preservative-treated lumber.
 - 3. Dimension lumber framing.
 - 4. Miscellaneous lumber.
 - 5. Plywood backing panels.

1.02 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. Lumber grading agencies, and abbreviations used to reference them, include the following:
 - 1. NLGA: National Lumber Grades Authority.
 - 2. WCLIB: West Coast Lumber Inspection Bureau.
 - 3. WWPA: Western Wood Products Association.

1.03 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.04 INFORMATIONAL SUBMITTALS

- A. Material Certificates:

1. For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.01 WOOD PRODUCTS

- A. Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
 3. Dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content:
 1. Dimension Lumber: 19 percent.

2.02 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWP A U1, Use categories as follows:
 1. UC3B: Uncoated products including sawn products in exterior construction not in contact with ground, exposed to all weather cycles including prolonged wetting.
 2. UC4B: Timbers in contact with ground, including but not limited to ramp and stair stringer foundations.
 3. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
 4. For exposed items indicated to receive a stained or natural finish, chemical formulations are not to require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
 5. After treatment, redry dimension lumber to 19 percent maximum moisture content. Do not use material that is warped or that does not comply with requirements for untreated material.

B. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

1. For exposed lumber indicated to receive a stained or natural finish, omit marking and provide certificates of treatment compliance issued by inspection agency.

C. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, and similar concealed members in contact with concrete.
3. Wood floor plates that are installed over concrete slabs-on-grade.

2.03 DIMENSION LUMBER FRAMING

A. Joists, Rafters, and Other Framing by Grade: No. 2 grade.

1. Species:

- a. As indicated on Drawings; WCLIB or WWPA.

B. Exposed Framing: Hand-select material indicated to receive a stained or natural finish for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

1. Species and Grade:

- a. Douglas fir-larch; No. 1 grade; WCLIB or WWPA.

2.04 MISCELLANEOUS LUMBER

A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Cants.
4. Furring.
5. Grounds.

B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:

1. Hem-fir; WCLIB or WWPA.
2. Douglas fir-larch; WCLIB or WWPA.

2.05 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.06 FASTENERS

- A. General: Fasteners are to be of size and type indicated and comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153 or ASTM F2329.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193 ICC-ES AC308 as appropriate for the substrate.
- E. Wood Screws and Lag Screws: ASME B18.2.1, ASME B18.6.1, or ICC-ES AC233.
- F. Carbon Steel Bolts: ASTM A307 with ASTM A563 hex nuts and, where indicated, flat washers all hot-dip zinc coated.

2.07 METAL FRAMING ANCHORS

- A. Metal framing anchors shall be Simpson Strong-Tie or equal.
- B. Allowable design loads, as published by manufacturer, are to comply with or exceed those of products of manufacturer indicated. Manufacturer's published values are to be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- C. Materials: Unless otherwise indicated, fabricate from the following materials:
 - 1. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653, G90 coating designation.
 - a. Use for interior locations unless otherwise indicated.
 - 2. Heavy-Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653; structural steel (SS); G185 coating designation; and not less than 0.036 inch thick.
 - a. Use for wood-preservative-treated lumber and where indicated.

2.08 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets:

1. Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
- D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- E. Install sill sealer gasket to form continuous seal between sill plates and foundation.
- F. Do not splice structural members between supports unless otherwise indicated.
- G. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- H. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
 1. Fire block concealed spaces of wood-framed walls and partitions at ceiling line and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
- I. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- J. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 1. Use inorganic boron for items that are continuously protected from liquid water.
 2. Use copper naphthenate for items not continuously protected from liquid water.

- K. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- L. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 2304.10.2, "Fastening Schedule," in ICC's International Building Code (IBC).
 - 2. ICC-ES evaluation report for fastener.
- M. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.02 INSTALLATION OF WOOD BLOCKING AND NAILERS

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach wood blocking to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Attach wood roofing nailers securely to substrate to resist the designed outward and upward wind loads indicated on Drawings and in accordance with ANSI/SPRI ED-1, Tables A6 and A7.

3.03 INSTALLATION OF WOOD FURRING

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

3.04 INSTALLATION OF SPECIAL FRAMING

- A. Provide special framing as indicated for eaves, overhangs, dormers, and similar conditions if any.

END OF ROUGH CARPENTRY

SECTION 06 10 53
MISCELLANEOUS ROUGH CARPENTRY

PART 1 GENERAL**1.01 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. AWWA U1 - Use Category System: User Specification for Treated Wood; 2023.
- C. PS 20 - American Softwood Lumber Standard; 2021.

1.02 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
 - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Window and Door Bucks: 1-1/2 inch thick laminated strand lumber.

2.03 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2.04 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
- B. Preservative Treatment:
 - 1. Preservative Pressure Treatment of Plywood Above Grade: AWWA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.

PART 3 EXECUTION**3.01 INSTALLATION - GENERAL**

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

	06 10 53 - 1
	Miscellaneous Rough Carpentry

3.02 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.03 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.04 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

END OF SECTION

	06 10 53 - 2
	Miscellaneous Rough Carpentry

SECTION 061753

SHOP-FABRICATED WOOD TRUSSES AND JOISTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood products.

1.2 DEFINITIONS

- A. Metal-Plate-Connected Wood Trusses: Planar structural units consisting of metal-plate-connected members fabricated from dimension lumber and cut and assembled before delivery to Project site.
- B. Open Web Joist: Planar structural units consisting of pin connected members fabricated from dimension lumber and tubular steel cut and assembled before delivery to Project site.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Metal-plate connectors, metal truss accessories, and fasteners.
2. Open web joists.

B. Shop Drawings: Show fabrication and installation details for trusses and open web joists.

1. Show location, pitch, span, camber, configuration, and spacing for each type of truss and joist required.
2. Indicate sizes, stress grades, and species of lumber.
3. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
4. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
5. Show splice details and bearing details.

C. Delegated Design Submittals: Include analysis data signed and sealed by the qualified professional engineer responsible for their preparation. Professional engineer shall be licensed to practice in Alaska.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss-fabricating firm.

B. Evaluation Reports: For the following, from ICC-ES:

1. Metal-plate connectors.

2. Metal truss accessories.

1.5 QUALITY ASSURANCE

- A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.
- B. Fabricator Qualifications: Shop that complies with quality-control procedures in TPI 1 and is acceptable to the Architect and authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle and store metal-plate-connected trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."
- B. Store trusses and joists flat, off of ground, and adequately supported to prevent lateral bending. Protect trusses and joists from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- C. Keep open web joists straight and plumb. Provide lateral support for the individual joists and the entire system until the sheathing material has been applied.
- D. Inspect trusses and joists showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer licensed to practice engineering in Alaska to design metal-plate-connected wood trusses and open web joists.
- B. Structural Performance: Metal-plate-connected wood trusses are to be capable of withstanding design loads within limits and under conditions indicated. Comply with requirements in TPI 1 unless more stringent requirements are specified below.

1. Design Loads:

- a. Top chord dead load: 10 pounds per square foot.
- b. Bottom chord dead load: 5 pounds per square foot.
- c. Uniform snow load: 40 pounds per square foot.
- d. Unbalanced snow load:
 - 1) Windward: 12 pounds per square foot.
 - 2) Leeward surcharge: 14 pounds per square foot for a distance of 6 feet from truss ridge.
- e. Wind uplift, main force resisting system (strength level): 38 pounds per square foot.
- f. Wind uplift, components and cladding: as indicated.

2. Maximum Deflection under Design Loads:
 - a. Roof Trusses: Vertical total load deflection of 1/240 of span.
 - C. Structural Performance: Open web joists are to be capable of withstanding design loads within limits and under conditions indicated.
 1. Design Loads:
 - a. Top chord dead load: 14 pounds per square foot.
 - b. Bottom chord dead load: 6 pounds per square foot.
 - c. Live load: 50 pounds per square foot.
 2. Maximum Deflection under Design Loads:
 - a. Open Web Joists: Vertical live load deflection of 1/480 of span.
 - D. Comply with applicable requirements and recommendations of TPI 1, TPI DSB, and SBCA BCSI.
 - E. Wood Structural Design Standard: Comply with applicable requirements in AF&PA's "National Design Specifications for Wood Construction" and its "Supplement."
- ## 2.2 WOOD PRODUCTS
- A. Lumber: DOC PS 20 and applicable rules of any rules-writing agency certified by the American Lumber Standard Committee (ALSC) Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. Provide dressed lumber, S4S.
 3. Provide dry lumber with 19 percent maximum moisture content at time of dressing.
- ## 2.3 METAL CONNECTOR PLATES
- A. Fabricate connector plates to comply with TPI 1.
 - B. Hot-Dip Galvanized-Steel Sheet: ASTM A653; Structural Steel (SS); G60 coating designation; and not less than 0.036 inch thick.
 1. Use for interior locations unless otherwise indicated.
- ## 2.4 OPEN WEB JOISTS
- A. Joist to be fabricated with wood chords and metal webs. Joists shall meet the requirements of ICC-ES Evaluation Report ESR-1774.
 - B. Basis of Design: Red-L by Redbuilt LLC.
- ## 2.5 FASTENERS
- A. Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Provide fasteners for use with metal framing anchors that comply with written recommendations of metal framing manufacturer.

B. Nails, Brads, and Staples: ASTM F1667.

2.6 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: SSPC-Paint 20, with dry film containing a minimum of 92 percent zinc dust by weight.

2.7 FABRICATION

- A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.
- B. Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.
- C. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly, with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.
 1. Fabricate wood trusses within manufacturing tolerances in TPI 1.
- D. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install wood trusses open web joists only after supporting construction is in place and is braced and secured.
- B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.
- C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- D. Install and brace trusses according to TPI recommendations and as indicated.
- E. Install and brace open web joists according to manufacturer's instructions and joist engineer's specifications and drawings.
- F. Install trusses and joists plumb, square, and true to line and securely fasten to supporting construction.
- G. Space trusses as indicated; adjust and align trusses in location before permanently fastening.
- H. Anchor trusses securely at bearing points; use metal truss tie-downs as applicable. Install fasteners through each fastener hole in metal framing anchors according to manufacturer's fastening schedules and written instructions.

- I. Install and fasten permanent bracing during truss and joist erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.
- J. Install wood trusses within installation tolerances in TPI 1.
- K. Do not alter trusses and joists in field. Do not cut, drill, notch, or remove truss members.
- L. Replace wood trusses and joists that are damaged or do not comply with requirements.
 - 1. Damaged trusses may be repaired according to truss repair details signed and sealed by the qualified professional engineer responsible for truss design, when approved by Architect.

3.2 REPAIRS AND PROTECTION

- A. Protect wood trusses from weather.
- B. Repair damaged galvanized coatings on exposed surfaces in accordance with ASTM A780 and manufacturer's written instructions.

END OF SHOP-FABRICATED WOOD TRUSSES AND JOISTS

SECTION 06 18 00 GLUED-LAMINATED CONSTRUCTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Structural glued-laminated timber.
2. Timber connectors.

1.02 DEFINITIONS

- A. Structural Glued-Laminated (Glulam) Timber:** An engineered, stress-rated timber product assembled from selected and prepared wood laminations bonded together with adhesives and with the grain of the laminations approximately parallel longitudinally.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include data on lumber, adhesives, fabrication, and protection.
2. For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
3. For connectors. Include installation instructions.

1.04 INFORMATIONAL SUBMITTALS

- A. Certificates of Conformance:** Issued by a qualified testing and inspecting agency indicating that structural glued-laminated timber complies with requirements in ANSI A190.1.
- B. Material Certificates:** For preservative-treated wood products, from manufacturer. Indicate type of preservative used and net amount of preservative retained.
- C. Research/Evaluation Reports:** For structural glued-laminated timber and timber connectors, from ICC-ES.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications:** An AITC- or APA-EWS-licensed firm.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. General:** Comply with provisions in AITC 111.
- B. Individually wrap members using plastic-coated paper covering with water-resistant seams.**

PART 2 - PRODUCTS

2.01 STRUCTURAL GLUED-LAMINATED TIMBER

- A. General: Provide structural glued-laminated timber that complies with ANSI A190.1 and ANSI 117 or research/evaluation reports acceptable to authorities having jurisdiction.
 - 1. Factory mark each piece of structural glued-laminated timber with AITC Quality Mark or APA-EWS trademark. Place mark on surfaces that are not exposed in the completed Work.
 - 2. Provide structural glued-laminated timber made with wet-use adhesive complying with ANSI A190.1.
- B. Species and Grades: For beams.
 - 1. Species and Combination Symbol: As indicated in Drawings
- C. Appearance Grade:
 - 1. Concealed: Industrial or better, complying with AITC 110.
 - 2. Exposed: Architectural, complying with AITC 110.

2.02 PRESERVATIVE TREATMENT

- A. Preservative Treatment:
 - 1. Exterior glued-laminated timber exposed to weather, comply with AWPA U1, Use Category 3B.
 - 2. Exterior glued-laminated timber in contact with ground, comply with AWPA U1, Use Category 4A.
- B. Preservative: As recommended by structural glued-laminated timber supplier.
- C. After dressing members, apply a copper naphthenate field-treatment preservative to comply with AWPA M4 to surfaces cut to a depth of more than 1/16 inch.

2.03 TIMBER CONNECTORS

- A. A. Timber connectors shall be Simpson Strong-Tie or equal.
- B. Materials: Unless otherwise indicated, fabricate from the following materials:
 - 1. Structural-steel shapes, plates, and flat bars complying with ASTM A36.
 - 2. Hot-rolled steel sheet complying with ASTM A1011, Structural Steel, Type SS, Grade 33.
- C. Hot-dip galvanize exterior steel assemblies and fasteners after fabrication to comply with ASTM A123.

2.04 MISCELLANEOUS MATERIALS

- A. End Sealer: Manufacturer's standard, transparent, colorless wood sealer that is effective in retarding the transmission of moisture at cross-grain cuts and is compatible with indicated finish.

- B. Penetrating Sealer: Manufacturer's standard, transparent, penetrating wood sealer that is compatible with indicated finish.

2.05 FABRICATION

- A. Shop fabricate for connections to greatest extent possible, including cutting to length and drilling bolt holes.
- B. Where preservative-treated members are indicated, fabricate (cut, drill, surface, and sand) before treatment to greatest extent possible. Where fabrication must be done after treatment, apply a field-treatment preservative to comply with AWP A M4.
- C. End-Cut Sealing: Immediately after end cutting each member to final length and after preservative treatment, apply a saturation coat of end sealer to ends and other cross-cut surfaces, keeping surfaces flood coated for not less than 10 minutes.
- D. Seal Coat: After fabricating, sanding, and end-coat sealing, apply a heavy saturation coat of penetrating sealer on surfaces of each unit except for preservative-treated wood.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates in areas to receive structural glued-laminated timber, with Installer present, for compliance with requirements, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. General: Erect structural glued-laminated timber true and plumb and with uniform, close-fitting joints. Provide temporary bracing to maintain lines and levels until permanent supporting members are in place.
- B. Cutting: Avoid extra cutting after fabrication. Where field fitting is unavoidable, comply with requirements for shop fabrication.
 - 1. Where preservative-treated members must be cut during erection, apply a field-treatment preservative to comply with AWP A M4.
- C. Install timber connectors as indicated.

3.03 ADJUSTING

- A. Repair damaged surfaces after completing erection. Replace damaged structural glued-laminated timber if repairs are not approved by Architect.

3.04 PROTECTION

- A. Do not remove wrappings on individually wrapped members until they no longer serve a useful purpose, including protection from weather, sunlight, soiling, and damage from work of other trades.
 - 1. Coordinate wrapping removal with finishing work. Retain wrapping where it can serve as a painting shield.

2. Slit underside of wrapping to prevent accumulation of moisture inside the wrapping.

END OF GLUED-LAMINATED CONSTRUCTION

SECTION 06 20 00 FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Finish carpentry items.
- B. Window casings and moldings.

1.02 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

2.02 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
- B. Lumber for Shimming, Blocking, and ____: Softwood lumber of ____ species.
- C. Cellular PVC Trim and Moldings: Extruded, expanded PVC; UV-resistant, heat-stabilized, and rigid material; for exterior use only.
 - 1. Density: 31 pounds per cubic foot, minimum.
 - 2. Flame Spread: ASTM E84, 75, maximum.
 - 3. Manufacturers:
 - a. AZEK Building Products, Inc; PVC Trim: www.azek.com/#sle.

2.03 HARDWARE

- A. Countertop Support Brackets: Fixed, L-shaped, face-of-stud mounting.
 - 1. Material: Steel; T-shape cross-section.
 - a. Finish: Manufacturer's standard, factory-applied, textured powder coat.
 - b. Color: Black.
 - c. Height: 9 inches.
 - d. Support Length: 9 inches.
 - e. Width: 1 inch.

2.04 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. Set and secure materials and components in place, plumb and level.
- B. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

	06 20 00 - 1
	Finish Carpentry

3.03 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 - 2
	Finish Carpentry

**SECTION 06 74 00
COMPOSITE GRATINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pultruded gratings.
- B. Grating edge components.
- C. Panel clips.

1.02 REFERENCE STANDARDS

- A. ASCE/ACMA (PS) - ASCE/ACMA Pre-Standard for Load & Resistance Design (LRFD) of Pultruded (FRP) Structures; 2010.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data - Pultruded Gratings: Include resin, load/deflection tables, panel size, bearing bar sectional shape, and bearing bar depth.
- C. Shop Drawings: For each grating system:
 - 1. Elevations, Plans, and Sections: Include dimensions; indicate panel sizes, panel layouts, and clearances between panels and adjacent construction.
 - 2. Details: Include connection, fastening, and anchorage details; indicate clearances between grating and adjacent construction.
- D. Samples: Two samples of each type of composite grating, 12 inches by 12 inches in size; indicate specified surfacing and color.
- E. Design Calculations for Systems Not Designed in Contract Documents:
 - 1. Sufficient to demonstrate compliance with ASCE/ACMA (PS) and applicable building code; signed and sealed by Engineer of Record for design of composite gratings.
- F. Test Reports: Provide test reports of surfacing burning characteristics of tested grating panel; provide report in accordance with reporting criteria of ASTM E84.
- G. Contractor's Design-Related Professional Services: Designer's qualification statement.
- H. Manufacturer's Instructions: Manufacturer's published installation instructions.
- I. Warranty Documentation: Manufacturer warranty; ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of composite grating systems and licensed in the State in which the Project is located.
- B. Fabricator Qualifications: Company specializing in fabricating products of this section, with not less than ten years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original, unbroken packages or bundles bearing label of manufacturer.
- B. Store materials in enclosed areas, under cover, and elevated above grade.
- C. Store resins, catalysts, and hardeners in accordance with manufacturer's instructions.
- D. Protect composite grating panels from damage, including abrasion, cracking, chipping, and twisting.

	06 74 00 - 1
	Composite Gratings

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Provide manufacturer's standard three-year warranty against defective products.

PART 2 PRODUCTS**2.01 COMPOSITE GRATINGS - GENERAL**

- A. Fiber-Reinforced Polymer (FRP) Composite Gratings:
 - 1. Composite grating plates manufactured by molded or pultrusion process; composed of reinforcements and resins; in qualities, quantities, and arrangements required to meet specified requirements.
 - 2. Fire-Retarding Resin Additives: Compatible with fiber and resin systems.
 - 3. Ultraviolet Protection Resin Additive: Compatible with fiber and resin systems.
 - 4. Surface Burning Characteristics: Flame spread rating of 25 or less when tested in accordance with ASTM E84.
 - 5. Ultraviolet Protection Coating: For additional protection, provide 1 mil, minimum, ultraviolet-resistant coating.
 - 6. Finished Surfaces: Smooth, resin-rich, free of voids; without dry spots, cracks, crazes, or unreinforced areas.

2.02 PULTRUDED GRATINGS

- A. Manufacturers:
 - 1. McNICHOLS: Fiberglass Grating Pultruded, I-Bar, MS-I-4015 - DURAGRID®, ADA, Fiberglass, SPF Polyester Resin, Gray, 1.500" Height x 0.600" Top Flange Width I-Bar, Fine Grit Surface, 40% Open Area.
 - 2. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Description: Fiber-reinforced polymer (FRP) composite grating panels assembled from pultruded bearing bars and cross rods that are mechanically and chemically bonded together.
 - 1. Maximum Spacing of Cross Rods: 12 inches.
- C. Pultruded Gratings:
 - 1. Resin: Fiberglass-reinforced vinyl ester resin.
 - 2. Bearing Bar Depth: 1-1/2 inches.
 - 3. Surfacing: Bonded grit.
 - 4. Color: Light gray.

2.03 GRATING EDGE COMPONENTS

- A. Manufacturer's standard composite edge components for composite grating, including edge banding and kickplates.

2.04 PANEL CLIPS

- A. Manufacturer's standard metal clips for securing grating panels to structural supports; end panel clips for panel-to-panel unsupported connections.

2.05 ACCESSORIES

- A. Anchorage Devices: Provide anchorage devices for securing structural composites to in-place construction as determined by Structural Engineer of Record for design of composite grating systems.
- B. Stainless Steel Fasteners: As recommended by manufacturer.

2.06 FABRICATION

- A. Assemble grating panels for tightly fitted and secured joints.
- B. Fabricate grating panels free from warps, twists, or other defects that would negatively affect appearance and serviceability.

	06 74 00 - 2
	Composite Gratings

- C. Seal cut edges, holes, and abrasions with resin compatible with grating resin to provide maximum corrosion resistance.
- D. Fabricate grating panels to be readily-removable.
- E. Fabricate grating panels to sizes that will accommodate clearances indicated below:
 - 1. Between Panels and Side of Trench: 1/4 inch.

2.07 SOURCE QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.
- B. Flame Spread Rating Testing: Provide full-scale testing of actual production grating panel of same material specified for project; test for compliance with specified flame spread rating of 25 or less in accordance with ASTM E84.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install grating panels and contiguous grating layouts with specified clips and fasteners in accordance with manufacturer's installation instructions and as required to meet specified performance requirements.
- B. Install grating panels plumb and level with clearances indicated below:
 - 1. Between Panels and Side of Trench: 1/4 inch.
 - 2. Between Panels and Vertical Surfaces: 1/2 inch.
 - 3. Between Adjacent Panels: 1/4 inch.
- C. Seal field cuts, drilled edges, holes, and abrasions with compatible resin recommended by manufacturer based on application and corrosive environment.

3.02 CLEANING

- A. Clean composite gratings in accordance with manufacturer's instructions.

3.03 PROTECTION

- A. Protect installed composite gratings from subsequent construction operations.

END OF SECTION

	06 74 00 - 3
	Composite Gratings

SECTION 06 83 16
FIBERGLASS REINFORCED PANELING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fiberglass reinforced plastic panels.
- B. Trim.

1.02 REFERENCE STANDARDS

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2023, with Editorial Revision.
- B. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- C. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2022.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Samples: Submit two samples 3 inch by 3 inch in size illustrating material and surface design of panels.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fiberglass Reinforced Plastic Panels:

2.02 PANEL SYSTEMS

- A. Wall Panels:
 - 1. Panel Size: 4 by 8 feet.
 - 2. Panel Thickness: 0.10 inch.
 - 3. Surface Design: Embossed.
 - 4. Color: White.
 - 5. Attachment Method: Mechanical fasteners concealed by trim, with sealant in joints.

2.03 MATERIALS

- A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
 - 1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 3. Impact Strength: Greater than 6 ft lb force per inch, when tested in accordance with ASTM D256.
- B. Trim: Vinyl; color coordinating with panel.
- C. Fasteners: Nylon rivets.
- D. Adhesive: Type recommended by panel manufacturer.
- E. Sealant: Type recommended by panel manufacturer; white.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.

	06 83 16 - 1
	Fiberglass Reinforced Paneling

3.02 INSTALLATION - WALLS

- A. Install panels in accordance with manufacturer's instructions.
- B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
- C. Pre-drill fastener holes in panels, 1/8 inch greater in diameter than fastener, spaced as indicated by panel manufacturer.
- D. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.
- E. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
- F. Install panels with manufacturer's recommended gap for panel field and corner joints.
- G. Drive fasteners to provide snug fit, and do not over-tighten.
- H. Place trim on panel before fastening edges, as required.
- I. Fill channels in trim with sealant before attaching to panel.
- J. Install trim with adhesive and screws or nails, as required.
- K. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.
- L. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

	06 83 16 - 2
	Fiberglass Reinforced Paneling

SECTION 07 21 19 FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.01 REFERENCE STANDARDS

- A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.
- B. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2019.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.
- F. FM 4880 - Examination Standard for Class 1 Fire Rating of Building Panels or Interior Finish Materials; 2022.
- G. NFPA 275 - Standard Method of Fire Tests for the Evaluation of Thermal Barriers; 2022.
- H. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.
- I. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth; 2024.
- J. UL 1040 - Standard for Safety Fire Test of Insulated Wall Construction; Current Edition, Including All Revisions.
- K. UL 1715 - Standard for Safety Fire Test of Interior Finish Material; Current Edition, Including All Revisions.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, open cell or closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
 - 1. Regulatory Requirements: Comply with applicable code for flame and smoke, concealment, and fire protection requirements.
 - a. Fire Protection: Provide 15-minute thermal barrier of 1/2 inch gypsum board or equivalent material complying with NFPA 275 test method, or foamed-in-place insulation either exposed or with covering that complies with FM 4880, NFPA 286, UL 1040, or UL 1715.
 - 2. Thermal Resistance: R-value of 5.0, minimum, per 1 inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.
 - 3. Water Vapor Permeance: Vapor retarder; 2 perms, maximum, when tested at intended thickness in accordance with ASTM E96/E96M, desiccant method.
 - 4. Water Absorption: Less than 2 percent by volume, maximum, when tested in accordance with ASTM D2842.
 - 5. Air Permeance: 0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
 - 6. Closed Cell Content: At least 90 percent.
 - 7. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.

2.02 ACCESSORIES

- A. Primer: As required by insulation manufacturer.

	07 21 19 - 1
	Foamed-In-Place Insulation

-
- B. Protective Coating: Intumescent coating of type recommended by insulation manufacturer and as required to comply with applicable codes.
1. Coating Type: Single component, water-based.
 2. Protected Insulation Type: Spray polyurethane foam (SPF).
 3. Application: Apply using brush, roller, or airless sprayer.
 4. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
 5. Exterior Wall System: Comply with NFPA 285.
 6. Color: As indicated on drawings.

PART 3 EXECUTION

3.01 APPLICATION

- A. Apply insulation in accordance with manufacturer's instructions.
- B. Apply to a minimum cured thickness of 5 inch.
- C. Apply protective coating monolithically, without voids, to fully cover foam insulation, to achieve fire rating required.

END OF SECTION

	07 21 19 - 2
	Foamed-In-Place Insulation

SECTION 07 26 00 VAPOR RETARDERS

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Vapor retarders on exterior wall sheathing.
- B. Section 07 21 00 - Thermal Insulation: Vapor retarder installed in conjunction with batt insulation.

1.02 REFERENCE STANDARDS

- A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, and limitations.

PART 2 PRODUCTS

2.01 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Vapor Retarder and Adjacent Substrates: As indicated, complying with vapor retarder manufacturer's installation instructions.
- B. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M; slip resistance requirement waived if not installed on roof.
 - 1. Width: 4 inches.
 - 2. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 30 days of weather exposure.
- C. Vapor Retarder Tape: Coated polyester film with acrylic adhesive backing; pressure sensitive.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Vapor Retarders: Install continuous airtight barrier over surfaces indicated, with sealed seams and sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Self-Adhered Sheets:
 - 1. Prepare substrate in accordance with sheet manufacturer's installation instructions; fill and tape joints in substrate and between dissimilar materials.
 - 2. Lap sheets shingle fashion to shed water and seal laps airtight.
 - 3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
 - 4. Use same material, or other material approved by sheet manufacturer, to seal sheets to adjacent substrates, and as flashing.
 - 5. At expansion joints, provide transition to joint assemblies approved by sheet manufacturer.
- E. Openings and Penetrations in Exterior Vapor Retarders:
 - 1. Install flashing over sills, covering entire sill framing member, and extend at least 5 inches onto vapor retarder and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.

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	Vapor Retarders

-
3. At openings with nonflanged frames, seal vapor retarder to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
 4. At head of openings, install flashing under vapor retarder extending at least 2 inches beyond face of jambs; seal vapor retarder to flashing.
 5. At interior face of openings, seal gaps between window/door frame and rough framing using appropriate joint sealant over backer rod.
 6. Service and Other Penetrations: Form flashing around penetrating items and seal to surface of vapor retarder.

END OF SECTION

	07 26 00 - 2
	Vapor Retarders

SECTION 07 41 13 METAL ROOF PANELS

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Roof sheathing.
- B. Section 07 21 00 - Thermal Insulation: Rigid roof insulation.
- C. Section 07 42 13 - Metal Wall Panels: Preformed wall panels.
- D. Section 07 92 00 - Joint Sealants: Sealing joints between metal roof panel system and adjacent construction.

1.02 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
- C. ASTM C1363 - Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus; 2019.
- D. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2017).
- E. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2018).
- F. ASTM E1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems; 2016 (Reapproved 2022).
- G. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Storage and handling requirements and recommendations.
 - 2. Installation methods.
 - 3. Specimen warranty.
- C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
 - 1. Show work to be field-fabricated or field-assembled.
- D. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.
- E. Installer's qualification statement.
- F. Test Reports: Indicate compliance of metal roofing system to specified requirements.
- G. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.

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	Metal Roof Panels

- B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.06 FIELD CONDITIONS

- A. Do not install metal roof panels when surface, ambient air, or wind chill temperatures are below 45 degrees F.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide 5-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.
- C. Special Warranty: Provide 2-year warranty for weathertightness of roofing system, including agreement to repair or replace metal roof panels that fail to keep out water commencing on the Date of Substantial Completion. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Structural Metal Roof Insulated Panel Manufacturers:
1. All Weather Insulated Panels, a Vicwest company: www.awipanel.com/#sle.
 2. ATAS International, Inc; Isoleren RL: www.atas.com/#sle.
 3. Centria, a Nucor Company: www.centria.com/#sle.
 4. Kingspan Insulated Panels; KingRib Insulated Roof Panel: www.kingspan.com/#sle.
 5. Metl-Span, a Nucor Company: www.metlspan.com/#sle.
 6. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

- A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed L/180 of span length(L) when tested in accordance with ASTM E1592.
 - a. Dead Loads: Weight of roofing system.
 - b. Live Loads: As indicated on drawings.
 2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
 3. Wind Uplift: Class 90 wind uplift resistance of UL 580.
 4. Air Infiltration: Maximum 0.06 cfm/sq ft at air pressure differential of 6.24 lbf/sq ft, when tested according to ASTM E1680.
 5. Water Penetration: No water penetration when tested in accordance with procedures and recommended test pressures of ASTM E1646; perform test immediately following air infiltration test.
 6. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.
 7. Thermal Resistance: Provide throughout system, R-value of 15 (2.6) at 2 inch (51 mm) thick, minimum, when tested in accordance with ASTM C1363.

2.03 STRUCTURAL METAL ROOF PANELS

- A. General: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Structural Insulated Metal Panels: Factory-formed panels with factory-applied finish.
- C. Structural Insulated Metal Panels: Factory-formed panels with factory-applied finish.

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	Metal Roof Panels

1. Type: Double-skin, factory assembled with foamed-in-place polyurethane insulation.
 - a. Thickness: 6 inches, nominal.
2. Steel Panels:
 - a. Aluminum-zinc alloy-coated SS (structural steel) sheet complying with ASTM A792/A792M; minimum AZ50 coating.
 - b. Steel Thickness: Minimum 22 gauge, 0.03 inch.
3. Profile: Standing seam, with minimum 1-1/2-inch seam height; concealed fastener system for field seaming with special tool.
4. Texture: Smooth.
5. Length: Full length of roof slope, without lapped horizontal joints.
6. Width: Maximum panel coverage of 24 inches.

2.04 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.05 FINISHES

- A. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected by Architect from manufacturer's standard line.

2.06 ACCESSORIES

- A. Miscellaneous Sheet Metal Items: Provide flashings, trim, closure strips, caps, and similar sheet metal items of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Sealants:
 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.

PART 3 EXECUTION

3.01 PREPARATION

- A. Broom clean wood sheathing prior to installation of roofing system.
- B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.
- C. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.
- D. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.
- E. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.02 INSTALLATION

- A. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.

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	Metal Roof Panels

1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
 2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.
- B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, caps, rib closures, ridge closures, and similar roof accessory items.
- C. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.
1. Form weathertight standing seams incorporating concealed clips, using an automatic mechanical seaming device approved by panel manufacturer.

END OF SECTION

	07 41 13 - 4
	Metal Roof Panels

SECTION 07 42 13
INSULATED METAL WALL PANELS - KINGSPAN

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Factory-assembled, insulated metal panels for walls and under-building soffits, with trim, and accessory components.

1.02 RELATED REQUIREMENTS

- A. Section 05 40 00 - Cold-Formed Metal Framing: Metal framing members supporting insulated metal wall panels.
- B. Section 07 21 00 - Thermal Insulation.
- C. Section 07 26 00 - Vapor Retarders: Vapor retarder materials.
- D. Section 07 41 13 - Metal Roof Panels.
- E. Section 07 62 00 - Sheet Metal Flashing and Trim.

1.03 REFERENCE STANDARDS

- A. ASTM A755/A755M - Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products; 2018.
- B. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
- C. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.
- D. ASTM C591 - Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation; 2022.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- F. ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics; 2016 (Reapproved 2023).
- G. ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics; 2020.
- H. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2023.
- I. ASTM D4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; 2023.
- J. ASTM E72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; 2022.
- K. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- L. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
- M. Miami (APD) - Approved Products Directory; Miami-Dade County; Current Edition.
- N. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturer documentation on tested structural, thermal, and fire resistance capabilities of assembled panel.

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	Insulated Metal Wall Panels - Kingspan

- C. Shop Drawings: Indicate panel profiles, layout, exterior sheet gauge, interior sheet gauge, joints, dimensions, spans, sealant locations, construction details, methods of anchorage, and sequence of installation.
- D. Selection Samples: For each finish product specified, submit at least three sample color chips representing manufacturer's standard range of available colors, sheen, and texture; 3 by 5 inch minimum.
- E. Design Data: Provide calculations verifying panels will withstand design wind loads indicated without detrimental effects or exceeding deflection criteria.
- F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of type specified in this section and authorized by panel manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store prefinished material above ground with weather protection to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Limited Warranty: Standard form in which manufacturer agrees to repair or replace items that fail in materials or workmanship within specified warranty period. Include structural performance, including bond integrity, deflection, and buckling.
 - 1. Warranty Period: Two years from Date of Substantial Completion, or two years and three months from date of shipment from manufacturer's plant, whichever occurs first.
- C. Finish Warranty: Standard form in which manufacturer agrees to repair or replace metal panels that evidence deterioration of fluoropolymer finish. Deterioration includes flaking or peeling from approved primed metal substrate, chalk over 8 when tested in accordance with ASTM D4214, Method A, and color fading over 5 delta units on panels when tested in accordance with ASTM D2244.
 - 1. Warranty Period: Twenty years from Date of Substantial Completion, or twenty years and three months from date of shipment from manufacturer's plant, whichever occurs first.
- D. Thermal Warranty: Standard form in which manufacturer agrees to repair or replace panels that exhibit greater than 10 percent reduction from published R-value (RSI-value) at time of manufacture, as measured in compliance with ASTM C518 within specified warranty period.
 - 1. Warranty Period: Thirty years from Date of Substantial Completion, or 30 years and three months from date of shipment from manufacturer's plant, whichever occurs first.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Kingspan Insulated Panels: KS Series QuadCore www.kingspan.com/#sle.
- B. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 PANEL SYSTEM

- A. Metal Panel System: Factory-assembled metal panel system, with trim, related flashings and accessory components.
 - 1. Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
 - 2. Accommodate tolerances of building structural framing.
 - 3. Provide continuity of thermal barrier at building enclosure elements in conjunction with thermal insulating materials; see Section 07 21 00.

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	Insulated Metal Wall Panels - Kingspan

4. Provide continuity of vapor retarder at building enclosure elements in conjunction with vapor retarder materials; see Section 07 26 00.

2.03 PERFORMANCE REQUIREMENTS

- A. Thermal Performance: Provide thermal resistance through entire system; minimum R-value of minimum.
 1. ≈ 8 per inch per ASTM C518 @ 75°F mean temperature
 2. ≈ 9 per inch per ASTM C518 @ 35°F mean temperature
- B. Structural Performance: Design and size to withstand dead loads and wind loads caused by positive and negative wind pressure acting normal to plane of panel.
 1. Verify structural performance in accordance with ASTM E72 and ASTM E330/E330M, using test pressure 1.5 times design wind pressure, with 10 seconds duration of maximum load.
 2. Design Wind Loads: Calculated complying with requirements of authorities having jurisdiction.
- C. Fire Test Performance:
 1. Fire Propagation Performance Testing: Tested with and successfully passed acceptance criteria of NFPA 285.
- D. Wind-Borne-Debris Resistance: Identical full-size assembly without auxiliary protection, having Miami-Dade County approval - Miami (APD) for Large and Small Missile impact and pressure cycling at design wind pressure.
- E. Movement: Accommodate movement caused by following items without damage to system, components, or deterioration of seals:
 1. Normal movement between system components.
 2. Seasonal temperature cycling.

2.04 PANELS AND TRIM

- A. Wall Panels: Factory-assembled, foamed-in-place, insulated metal panels with exterior and interior sheet metal skins; panels interlock at edges.
 1. Panel Width: As indicated on drawings.
 2. Panel Orientation: Horizontally applied at walls, and perpendicular to floor framing for soffits..
 3. Exterior Panel Face Profile: Shadowline.
 4. Interior Panel Face Profile: Shadowline.
 5. Panel Thickness: 5 inches.
 6. Exterior Sheet: Prefinished aluminum-zinc-alloy-coated steel, 22 gauge, 0.0299 inch minimum base metal thickness; stucco embossed.
 7. Interior Sheet: Prefinished galvanized steel, 24 gauge, 0.0239 inch minimum base metal thickness.
 8. Horizontal Joints Between Panels: 1/8 inch wide joint reveal.
 9. Vertical Joints Between Panels: 1/8-inch reveals.
 - a. Gasket Color: Standard black gasket.
 10. Sealant at Exposed Joints (Horizontal Panel Applications): Elastomeric polyurethane sealant complying with ASTM C920.
 11. Fabricate panels in longest practicable lengths.
 12. Exterior Face of Panel Paint Finish: Two-coat, polyvinylidene fluoride (PVDF) 1.0 mil, 0.001 inch system; 0.2 mil, 0.0002 inch primer with 0.8 mil, 0.0008 inch Kynar 500 (70 percent) SOLID color coat.
 - a. Color: As selected from manufacturer's current insulated wall panel color chart.
- B. Soffit Panels: Same as wall panels.
- C. Trim, Closure Pieces, Expansion Joints, Caps, Flashings, Fascias, Infills, and External Corners: Same material, thickness, and finish as exterior face of insulated metal panel; brake formed to

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	Insulated Metal Wall Panels - Kingspan

required profiles; fabricated in longest practicable lengths.

1. Thickness: 22 gauge, 0.0336 inch.
2. Exposed Fasteners: Not permitted.
3. Profiles: As indicated on drawings.

2.05 PANEL MATERIALS

- A. Precoated Aluminum-Zinc-Alloy-Coated Steel Sheet: ASTM A755/A755M steel coil material with AZ50 coated steel in accordance with ASTM A792/A792M.
 1. Color of Exposed Exterior Surfaces: As selected by Architect from manufacturer's standard range.
- B. Gaskets: Manufacturer's standard type suitable for use with panel system, permanently resilient; color as selected by Architect.
- C. Panel Sealants: Manufacturer's standard type suitable for use with installation of panel system; nonstaining, skinning, nonshrinking, nonsagging, ultraviolet, and ozone resistant; color as selected by Architect.

2.06 FOAMED-IN-PLACE INSULATION

- A. QuadCore hybrid polyisocyanurate foamed-in-place core, ASTM C591 Type IV, CFC and HCFC free, Halogenated Flame Retardant (HFR) free, compliant with Montreal Protocol and Clean Air Act, with the following minimum physical properties:
 1. Thermal Resistance of Insulated Panel: Nominal R-value of 8.0 per inch thickness when tested in accordance with ASTM C518 at 75 degree F mean temperature; nominal R-value of 9.0 per inch thickness when tested at 35 degrees F.
 2. Compressive Strength: 24 psi, when tested in accordance with ASTM D1621.
 3. Density: 2.2 to 2.8 lb/cu ft, when tested in accordance with ASTM D1622.
 4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 90 or less, when tested in accordance with ASTM E84.
 5. Manufacturer: Kingspan Insulated Panels; QuadCore.
 - a. Substitutions: Not permitted.

2.07 ACCESSORIES

- A. Fasteners: Manufacturer's standard corrosion-resistant type to suit application; hot-dip galvanized steel with soft neoprene washers. Where exposed fasteners are required, provide cap color to match exterior panel.
- B. Clips: Manufacturer's standard stainless steel clips.
- C. Field Touch-up Paint: As recommended by panel manufacturer.
- D. Concealed Sealants: Noncuring butyl sealant or tape sealant; type as recommended by panel manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that structural framing is ready to receive panel system.

3.02 INSTALLATION

- A. Install panel system on walls and soffits in accordance with manufacturer's instructions.
- B. Install panels plumb, level, and true-to-line with dimensions and layout indicated on approved shop drawings.
- C. Protect panel surfaces from contacting cementitious materials and dissimilar metals.
- D. Permanently fasten panel system to structural supports; aligned, level, and plumb, within specified tolerances.
- E. Locate panel joints over supports.
- F. Use concealed fasteners unless otherwise indicated by Architect.

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	Insulated Metal Wall Panels - Kingspan

- G. Seal and place gaskets to prevent weather penetration, and maintain neat appearance.
- H. Field drill weep holes where appropriate in horizontal trim; minimum 1/8" diameter at 24 inches on center.

3.03 REPAIR

- A. Touch-up, repair, or replace metal panels and trim that have been damaged.

3.04 CLEANING

- A. Remove protective film from metal panels immediately after installation.

END OF SECTION

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	Insulated Metal Wall Panels - Kingspan

SECTION 07 92 00 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2022.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.
- F. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Backing material recommended by sealant manufacturer.
 - 4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 5. Substrates the product should not be used on.
- C. Executed warranty.

1.04 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Exterior Joints:
 - a. Seal the following joints:
 - 1) Joints between doors, windows, and other frames or adjacent construction.
 - 2. Interior Joints:
 - a. Do not seal interior joints indicated on drawings as not sealed.
 - b. Seal the following joints:
 - 1) Joints between door frames and window frames and adjacent construction.
 - 2) In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, and piping penetrations.
 - 3) In sound-rated wall and ceiling assemblies, seal joints between wall assemblies and ceiling assemblies; between wall assemblies and other construction; between ceiling assemblies and other construction.
- B. Exterior Joints: Use nonsag nonstaining silicone sealant, unless otherwise indicated.

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	Joint Sealants

1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, noncuring.
2. Lap Joints between Manufactured Metal Panels: Butyl rubber, noncuring.
- C. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
 1. Wall and Ceiling Joints in Nonwet Areas: Acrylic emulsion latex sealant.
 2. Floor Joints in Wet Areas: Nonsag polyurethane non-traffic-grade sealant suitable for continuous liquid immersion.
 3. Type ____ - Joints between Tile in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
 4. Other Floor Joints: Self-leveling polyurethane traffic-grade sealant.
- D. Interior Wet Areas: Bathrooms and kennel areas; fixtures in wet areas include plumbing fixtures, countertops, cabinets, and other similar items.

2.02 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.

2.03 NONSAG JOINT SEALANTS

- A. Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: Plus and minus ____ percent, minimum.
 2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 4. Color: Match adjacent finished surfaces.
 5. Service Temperature Range: Minus 20 to 180 degrees F.
- B. Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Color: Match adjacent finished surfaces.
- C. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 1. Color: White.
- D. Polymer Sealant: ASTM C920; single component, cured sealant is paintable and mold/mildew resistant, low odor and VOC, and ultraviolet (UV) resistant.
 1. Color: White.
- E. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: Plus and minus 25 percent, minimum.
- F. Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multicomponent; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.
 1. Movement Capability: Plus and minus 35 percent, minimum.
- G. Type ____ - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, nonstaining, nonbleeding, nonsagging; not intended for exterior use.
- H. Noncuring Butyl Sealant: Solvent-based, single component, nonsag, nonskinning, nonhardening, nonbleeding; nonvapor permeable; intended for fully concealed applications.

2.04 SELF-LEVELING JOINT SEALANTS

- A. Self-Leveling Polyurethane Sealant for Continuous Water Immersion: Polyurethane; ASTM C920, Grade P, Uses M and A; single component; explicitly approved by manufacturer for traffic exposure and continuous water immersion.
 1. Movement Capability: Plus and minus 25 percent, minimum.

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	Joint Sealants

2. Color: Gray.
- B. Flexible Polyurethane Foam: Single component, gun grade, and low-expanding.
 1. Color: White.

2.05 ACCESSORIES

- A. Sealant Backing Materials, General: Materials placed in joint before applying sealants; assists sealant performance and service life by developing optimum sealant profile and preventing three-sided adhesion; type and size recommended by sealant manufacturer for compatibility with sealant, substrate, and application.
- B. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Install acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION

	07 92 00 - 3
	Joint Sealants

**SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Non-fire-rated hollow metal doors and frames.
- B. Thermally insulated hollow metal doors with frames.
- C. Accessories, including glazing, louvers, and matching panels.

1.02 RELATED REQUIREMENTS

- A. Section 08 71 00 - Door Hardware.
- B. Section 08 80 00 - Glazing: Glass for doors and borrowed lites.
- C. Section 09 91 13 - Exterior Painting: Field painting.
- D. Section 09 91 23 - Interior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

- A. ANSI: American National Standards Institute.
- B. NAAMM: National Association of Architectural Metal Manufacturers.
- C. SDI: Steel Door Institute.
- D. UL: Underwriters Laboratories.

1.04 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Coatings for Steel Doors and Frames; 2019.
- C. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2022.
- D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
- H. 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; 2023.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 3. Steelcraft, an Allegion brand: www.allegion.com/#sle.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.

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	Hollow Metal Doors and Frames

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
- B. 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 door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Exterior Doors: Thermally insulated.
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 - Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
 - 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 - 3. Door Thickness: 1-3/4 inches, nominal.
 - 4. Top Closures for Outswinging Doors: Flush with top of faces and edges.
 - 5. Door Face Sheets: Flush.
 - 6. Weatherstripping: Refer to Section 08 71 00.
 - 7. Door Finish: Factory finished.
- B. Interior Doors, Non-Fire-Rated:
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 - Heavy-duty.
 - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
 - 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 - 3. Door Thickness: 1-3/4 inches, nominal.
 - 4. Door Face Sheets: Flush.
 - 5. Door Finish: Factory finished.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Exterior Door Frames: Full profile/continuously welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvanized) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 - 2. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
 - 3. Frame Finish: Factory finished.
 - 4. Weatherstripping: Separate, see Section 08 71 00.
- C. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
 - 1. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
 - 2. Frame Finish: Factory finished.

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	Hollow Metal Doors and Frames

2.05 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Factory Finish: Complying with ANSI/SDI A250.3, manufacturer's standard coating.
 - 1. Color: As indicated on drawings.

2.06 ACCESSORIES

- A. Door Window Frames: Door window frames with glazing securely fastened within door opening.
 - 1. Size: As indicated on drawings.
 - 2. Frame Material: 18 gauge, 0.0478 inch, galvanized steel.
 - 3. Metal Finish: Dark Bronze polyester powder coating.
- B. Glazing: As specified in Section 08 80 00, factory installed.
- C. Removable Stops: Formed sheet steel, shape as indicated on drawings, mitered or butted corners; prepared for countersink style tamper proof screws.

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 doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Install door hardware as specified in Section 08 71 00.
- D. Comply with glazing installation requirements of Section 08 80 00.
- E. Touch up damaged factory finishes.

3.03 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.04 ADJUSTING

- A. Adjust for smooth and balanced door movement.

END OF SECTION

	08 11 13 - 3
	Hollow Metal Doors and Frames

SECTION 08 30 06 INTERIOR SLIDING DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Factory fabricated interior sliding door frame and track systems with operating hardware.

1.02 RELATED REQUIREMENTS

- A. Section 08 71 00 - Door Hardware.
- B. Section 08 80 00 - Glazing: Product and execution requirements for glass type and installation.
- C. Section 09 91 23 - Interior Painting: Opaque painted finish on sliding wood doors.

1.03 REFERENCE STANDARDS

- A. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- B. ASTM E413 - Classification for Rating Sound Insulation; 2022.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, information on glass and glazing, and descriptions of hardware and accessories.
- C. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, and installation requirements.
- D. Warranty, executed in Owner's name.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to project site and store in manufacturer's protective cartons until openings are ready for door installation.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Interior Sliding Doors:
 1. Serenity Sliding Door Systems; SD101 - Surface Mounted Single Sliding: www.serenityslidingdoor.com/#sle.
 2. AD SYSTEMS, 2201 100th St. SW, Everett, WA 98204
 - a. ExamSlide™ High Performance Barn (Sliding) Door System by AD Systems.
 3. Substitutions: See Section 016000-Product Requirements.

2.02 SLIDING DOOR TRACK SYSTEMS

- A. Interior Sliding Door Track Systems:
 1. Description: Aluminum-cased frame that wraps wall at jambs and head of opening with trim; includes face trim at track, receiving channel, adjustable top track assembly, carriage assemblies having weight rating of at least 220 lb, frames with integral double seal full gasketing, soft close units, receiving channel, brush type seals, and factory-prepped locks.
 2. Configuration: On wall surface-mount system as indicated on drawings.
 3. Frame Finish: Class I natural anodized (Standard).
 - a. Color: As selected by Architect from manufacturer's standard colors.
 4. Door Thickness: 1-3/4 inches.
 5. Wall Thickness: 4-7/8 inches, with 5 inch wide cased open frame.
 6. Hardware:

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	Interior Sliding Doors

- a. Finish: Stainless Steel, 32 Bright, with antimicrobial coating applied or included in finish coating.
 - b. Back to Back Ladder Pull: 12 inches long, with passage latch.
 - c. Deadlock: PD95 - Sliding Door Deadlock, ADA Thumb-turn and Release.
- B. Construction: Factory assemble door frame as one unit, including head jambs, and sill; factory assemble operating and fixed panels; self-closing with mechanical spring.
- 1. Provide smoke seals.

2.03 COMPONENTS

2.04 PERFORMANCE REQUIREMENTS

- A. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
- B. Acoustical Performance: Provide door assembly and components with Sound Transmission Class (STC) rating of 35, minimum, when tested in accordance with ASTM E90, and ratings derived from ASTM E413.

2.05 ASSEMBLY

- A. Factory assemble frame as one unit, including head and jambs; factory assemble operating and fixed door or sidelite panels.
- B. Sizes: Allow for tolerances of rough framed openings, clearances, and shims around perimeter of assemblies.
- C. Joints and Connections: Flush, hairline width, and waterproof; accurately and rigidly joined corners.

2.06 ACCESSORIES

- A. Pull Handles: Manufacturer's standard type.
 - 1. Color: As selected by Architect from manufacturer's standard range.
- B. Sliding Panel Bottom Rollers: Stainless steel, adjustable from interior.
- C. Blocking: Provide support wall blocking as required for sliding door locations in accordance with sliding door manufacturer's requirements.
- D. Anchors: Hot-dipped galvanized or stainless steel.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install sliding door units in accordance with manufacturer's instructions.
- B. Attach frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Use anchorage devices to securely fasten sliding door assembly to wall construction without distortion or imposed stresses.
- D. Install operating hardware.

3.02 TOLERANCES

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation from Plumb: 1/16 inch.
- C. Maximum Variation from Level: 1/16 inch.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 foot straight edge.

3.03 ADJUSTING

- A. Adjust hardware for smooth operation.

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	Interior Sliding Doors

3.04 CLEANING

- A. Remove protective material from factory finished surfaces.
- B. Remove labels and visible markings.
- C. Wash surfaces by method recommended and acceptable to sealant and sliding door manufacturer; rinse and wipe surfaces clean.

END OF SECTION

	08 30 06 - 3
	Interior Sliding Doors

SECTION 08 54 13 FIBERGLASS WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Factory fabricated fiberglass windows with fixed and operating sash.
- B. Glazed by factory or on-site; including infill panels.
- C. Operating hardware.
- D. Insect screens.

1.02 RELATED REQUIREMENTS

- A. Section 08 80 00 - Glazing.

1.03 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights; 2022.
- B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- C. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2023).
- D. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation; 2022.
- E. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes; 2023.
- F. FS L-S-125 - Screening, Insect, Nonmetallic; 1972b, with Notice (1987).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, anchors, fasteners, glass, and internal drainage details.
- C. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work, installation requirements.
- D. Manufacturer's Certificate: Certify that products of this section meet or exceed specified requirements.
- E. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
 - 1. Evidence of AAMA Certification.
 - 2. Evidence of WDMA Certification.
 - 3. Evidence of CSA Certification.
 - 4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.
- F. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.
- G. Manufacturer's Qualification Statement.
- H. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

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	Fiberglass Windows

- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

1.07 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F.
B. Maintain this minimum temperature during and after installation of sealants.

1.08 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
B. Correct defective Work within a ten year period after Date of Substantial Completion.
C. Provide ten year manufacturer warranty for insulated glass units from seal failure, interpane dusting or misting, and replacement of same. Include coverage for degradation of color finish.
D. Failures include, but are not limited to, the following:
1. Failure to meet performance requirements.
2. Structural failures including excessive deflection, water leakage, and air infiltration.
3. Faulty operation of movable sash and hardware.
4. Deterioration of materials and finishes beyond normal weathering.
5. Failure of insulating glass.
E. Warranty Period:
1. Window: 10 years from date of Substantial Completion.
2. Glazing Units: 10 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fiberglass Windows: Source Limitations: Obtain fiberglass windows from single source from single manufacturer.
1. Alpen 725 Series Windows, as Manufactured by Alpen HHP.
2. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 WINDOW UNITS

- A. Fiberglass Windows: Hollow, tubular, multi-layer fiber reinforced material; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
1. Configuration: As indicated on drawings.
2. Product Type: AP - Awning projected window and FW - Fixed window in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
3. Color: White.
4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
6. Thermal Movement: Design to accommodate thermal movement caused by 120 degrees F temperature change without buckling stress on glass, joint seal failure, damaging loads on structural elements, damaging loads on fasteners, reduction in performance or other detrimental effects.

2.03 PERFORMANCE REQUIREMENTS

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
1. Performance Class (PC): CW.

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	Fiberglass Windows

2. Performance Grade (PG): 30, with minimum design pressure (DP) of 30.08 psf.
- B. Design Pressure (DP): In accordance with applicable codes.
- C. Windborne-Debris-Impact Resistance: Capable of resisting impact from windborne debris based on testing glazed windows identical to those specified, according to ASTM E 1886 and testing information in ASTM E 1996 and requirements of authorities having jurisdiction.
- D. Overall Thermal Transmittance (U-value): 0.27, maximum, including glazing, measured on window sizes required for this project.
- E. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 12.11 pounds per square foot.
- F. Acoustic Performance: Minimum outdoor-indoor transmission class (OITC) rating of 26, when tested in accordance with ASTM E90 and ASTM E1332.

2.04 COMPONENTS

- A. Insect Screen Frame: Rolled aluminum frame of rectangular sections; fit with adjustable hardware; nominal size similar to operable glazed unit.
- B. Insect Screens: FS L-S-125 woven plastic mesh; 14/18 mesh size.
 1. Color: Black.
- C. Operable Sash Weather Stripping: Wool pile; permanently resilient, profiled to effect weather seal.
- D. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

2.05 GLASS AND GLAZING MATERIALS

- A. Glass and Glazing Materials: See Section 08 80 00 for Types described below:

2.06 HARDWARE

- A. Casement and Awning Sash: Zinc die-cast steel worm-gear operator with Painted finish.
- B. Window Opening Control Devices (WOCD): Provide operable window sash hardware that limits openings to only allow passage of 4 inch diameter rigid sphere or less, and are easily releasable to fully open without use of keys, tools, or special knowledge.
- C. Finish For Exposed Hardware: Match window finish.

2.07 FABRICATION

- A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- B. Arrange fasteners to be concealed from view.
- C. Permit internal drainage weep holes and channels to migrate moisture to exterior. Provide internal drainage of glazing spaces to exterior through weep holes.
- D. Assemble insect screen frame, miter and reinforced frame corners. Fit mesh taut into frame and secure. Fit frame with four spring loaded steel pin retainers.
- E. Double weatherstrip operable units.
- F. Factory glaze window units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify wall openings and adjoining water-resistive barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install windows in accordance with manufacturer's instructions.

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	Fiberglass Windows

- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

3.03 ADJUSTING

- A. Adjust hardware for smooth operation and secure weathertight closure.

3.04 CLEANING

- A. Remove protective material from pre-finished surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

END OF SECTION

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	Fiberglass Windows

**SECTION 08 80 00
GLAZING****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Insulating glass units.
- B. Glazing units.
- C. Glass coatings.
- D. Glazing compounds.

1.02 RELATED REQUIREMENTS

- A. Section 07 26 00 - Vapor Retarders.
- B. Section 07 92 00 - Joint Sealants: Sealants for other than glazing purposes.
- C. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed lites in doors.
- D. Section 08 54 13 - Fiberglass Windows: Glazing provided by window manufacturer.

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; 2015 (Reaffirmed 2020).
- C. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- D. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- F. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.
- G. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.
- H. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.
- I. GANA (SM) - GANA Sealant Manual; 2008.
- J. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.
- K. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.
- L. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data on Insulating Glass Unit, Glazing Unit, Plastic Sheet Glazing Unit, Plastic Film, and _____ Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

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	Glazing

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS**2.01 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES**

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
 - 1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 - 2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 - 3. Glass thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
 - 1. In conjunction with weather barrier related materials described in other sections, as follows:
 - 2. To utilize inner pane of multiple pane insulating glass units for continuity of vapor retarder and/or air barrier seal.
 - 3. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.
- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
 - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 3. Solar Optical Properties: Comply with NFRC 300 test method.

2.02 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
 - 1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
 - 2. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
 - 3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

2.03 INSULATING GLASS UNITS

- A. Insulating Glass Units: Types as indicated.
 - 1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 - 2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision

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	Glazing

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- glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
 - 3. Metal-Edge Spacers: Aluminum, bent and soldered corners.
 - 4. Spacer Color: Black.
 - 5. Edge Seal:
 - a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
 - b. Color: Black.
 - 6. Purge interpane space with dry air, hermetically sealed.
 - 7. Capillary Tubes: Provide tubes from air space for insulating glass units without inert type gas that have a change of altitude greater than 2500 feet between point of fabrication and point of installation to permit pressure equalization of air space.
 - a. Breather Tubes: Seal or crimp breather tubes upon installation in accordance with insulating glass fabricator's requirements.
 - B. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
 - 1. Applications: Exterior door lites
 - 2. Space between lites filled with argon.
 - 3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - 4. Metal edge spacer.
 - 5. Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - 6. Total Thickness: 1 inch.
 - 7. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.26, nominal.
 - 8. Visible Light Transmittance (VLT): 52 percent, nominal.
 - 9. Solar Heat Gain Coefficient (SHGC): 0.22, nominal.
 - C. Type IG-2 - Insulating Glass Units: Vision glass, triple glazed.
 - 1. Applications: Exterior glazing unless otherwise indicated.
 - 2. Space between lites filled with argon.
 - 3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: Low-E (passive type), on #2 surface.
 - 4. Middle Lite: Annealed float glass, 1/4 inch thick, minimum.
 - 5. Inboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - 6. Total Thickness: 1 inch.
 - 7. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.13, nominal.
 - 8. Visible Light Transmittance (VLT): 57 percent, nominal.
 - 9. Solar Heat Gain Coefficient (SHGC): 0.25, nominal.

2.04 GLAZING COMPOUNDS

- A. Type GC-1 - Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; gray 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.

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	Glazing

3.02 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 in proper orientation so that coatings face exterior or interior as indicated.

3.03 SCHEDULES

- A. Steel Door Glazing:
 - 1. Exterior: Glass Type IG2, 1/4 inch thick, install glass using wet method with Type CG-1 glazing compound.
- B. Custom Casework Glazing: Glazed cabinet doors, FT, install glass using dry method.

END OF SECTION

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	Glazing

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. Metal channel ceiling framing.
- D. Acoustic insulation.
- E. Gypsum sheathing.
- F. Gypsum wallboard.
- G. Joint treatment and accessories.
- H. Acoustic (sound-dampening) wall and ceiling board.

1.02 RELATED REQUIREMENTS

- A. Section 05 40 00 - Cold-Formed Metal Framing: Structural steel stud framing.
- B. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.
- C. Section 07 92 00 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).
- C. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- D. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- F. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- H. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.
- I. 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; 2022.
- J. 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; 2022.
- K. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- L. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- M. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- N. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

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	Gypsum Board Assemblies

- O. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- P. GA-216 - Application and Finishing of Gypsum Panel Products; 2021.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.
- B. Store metal products to prevent corrosion.

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: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- C. Grid Suspension Systems: Provide grid suspension systems in accordance with ASTM C840.
 - 1.

2.02 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
- B. Nonstructural Framing System Components: AISI S220; 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 knurled or embossed faces.
 - 2. Runners: U shaped, sized to match studs.
 - 3. Ceiling Channels: C-shaped.
- C. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.
- D. Non-structural Framing Accessories:
 - 1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
- E. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.

2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. American Gypsum Company: www.americangypsum.com/#sle.
 - 2. CertainTeed Corporation: www.certainteed.com/#sle.
 - 3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
 - 4. USG Corporation: www.usg.com/#sle.
 - 5. Substitutions: See Section 01 60 00 - Product Requirements.
- B. 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 and ceilings, unless otherwise indicated.
 - 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
- C. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Ceilings, unless otherwise indicated.
 - 2. Thickness: 1/2 inch.

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	Gypsum Board Assemblies

3. Edges: Tapered.
- D. Acoustical Sound Dampening Wall and Ceiling Board: Two layers of heavy paper-faced, high-density gypsum board separated by a viscoelastic polymer layer and capable of achieving STC rating of 50 or more in typical stud wall assemblies as calculated in accordance with ASTM E413 and when tested in accordance with ASTM E90.
 1. Thickness: 5/8 inch.
 2. Long Edges: Tapered.
 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

2.04 GYPSUM BOARD ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced; thickness 2 inches.
- 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, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, 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.
 1. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
 2. Joint Compound: Drying type, vinyl-based, ready-mixed.
 3. Joint Compound: Setting type, field-mixed.
- E. Finishing Compound: Surface coat and primer, takes the place of skim coating.
- F. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- G. 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.
- H. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

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 C1007/AISI S220 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
- C. 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 extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.

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	Gypsum Board Assemblies

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.
 - 1. Place one bead continuously on substrate before installation of perimeter framing members.
 - 2. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

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.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
- 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 3: Walls to receive textured wall finish.
 - 2. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- 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.
- C. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

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 - 4
	Gypsum Board Assemblies

SECTION 09 51 00 ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 REFERENCE STANDARDS

- A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- B. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- C. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, 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.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
 - 2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 - 1. USG Corporation: www.usg.com/ceilings/#sle.
 - 2. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Suspension Systems:
 - 1. Same as for acoustical units.

2.02 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7 for Seismic Design Category D, E, or F and complying with the following:

2.03 ACOUSTICAL UNITS

- A. Acoustical Units - General: ASTM E1264, Class A.
- B. Acoustical Tiles: Painted mineral fiber, with the following characteristics:
 - 1. Classification: ASTM E1264 Type III.
 - a. Form: 2, water felted.
 - 2. Size: 24 by 24 inches.
 - 3. Thickness: 3/4 inch.
 - 4. Light Reflectance: 0.86 percent, determined in accordance with ASTM E1264.
 - 5. Tile Edge: Square.
 - a. Joint: Kerfed and rabbeted.
 - 6. Color: White.
 - 7. Suspension System: Concealed.
 - 8. Products:
 - a. Armstrong World Industries, Inc; Dune: www.armstrongceilings.com/#sle.
 - b. USG Corporation; Pebbled Acoustical Panels: www.usg.com/ceilings/#sle.

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	Acoustical Ceilings

- c. Substitutions: See Section 01 60 00 - Product Requirements.

2.04 SUSPENSION SYSTEM(S)

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- B. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- C. Exposed Suspension System: Hot-dipped galvanized steel grid with steel cap.
 - 1. Application(s): Seismic.
 - 2. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
 - 3. Profile: Tee; 15/16 inch face width.
 - 4. Color: White.
 - 5. Products:
 - a. USG Corporation; Donn Brand ZXLA 15/16 inch Acoustical Suspension System: www.usg.com/ceilings/#sle.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Hold-Down Clips: Manufacturer's standard clips to suit application.
- D. Perimeter Moldings: Same metal and finish as grid.

PART 3 EXECUTION

3.01 PREPARATION

- A. Install after major above-ceiling work is complete.
- B. Coordinate the location of hangers with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

- A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- B. Locate system on room axis according to reflected plan.
- C. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
- D. Suspension System, Non-Seismic: 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.
- E. Seismic Suspension System, Seismic Design Categories D, E, F: Hang suspension system with grid ends attached to the perimeter molding on two adjacent walls; on opposite walls, maintain a 3/4 inch clearance between grid ends and wall.
- F. 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.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

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	Acoustical Ceilings

- I. Do not eccentrically load system or induce rotation of runners.

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. Lay directional patterned units with pattern parallel to longest room axis.
- D. Fit border trim neatly against abutting surfaces.
- 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

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	Acoustical Ceilings

**SECTION 09 67 00
FLUID-APPLIED FLOORING**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Fluid-applied flooring and base.

1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 - Joint Sealants: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.
- B. Section 22 10 06 - Plumbing Piping Specialties: Recessed plumbing access cover frames.

1.03 REFERENCE STANDARDS**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- C. Samples: Submit two samples, 4" by 4" inch in size illustrating color and pattern for each floor material for each color specified.
- D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and application rate for each coat.
- E. Manufacturer's Qualification Statement.
- F. Applicator's Qualification Statement.
- G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section.
 - 1. Minimum three years of experience.
 - 2. Approved by manufacturer.
- C. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store resin materials in a dry, secure area and as required by manufacturer.

1.07 FIELD CONDITIONS

- A. Maintain minimum temperature in storage area of 55 degrees F.
- B. Store materials in area of installation for minimum period of 24 hours prior to installation.
- C. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Fluid-Applied Flooring:
 - 1. Basis of Design Product: Dur-A-Flex Shop Floor, Epoxy-based seamless flooring system as manufactured by Dur-A-Flex, Inc.
 - 2. Substitutions: See Section 01 60 00 - Product Requirements.

	09 67 00 - 1
	Fluid-Applied Flooring

2.02 FLUID-APPLIED FLOORING SYSTEMS

- A. Fluid-Applied Flooring: Epoxy base coat(s), with broadcast aggregate.
 - 1. Aggregate: Quartz granules.
 - 2. Top Coat: Polyurethane.
 - 3. System Thickness: 1/4 inch, nominal, dry film thickness (DFT).
 - 4. Texture: Smooth.
 - 5. Sheen: High gloss.
 - 6. Color: As selected by Architect.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.
- 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 flooring.
- C. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of materials to subfloor surfaces.
- D. Verify that wood subfloors have 12 percent maximum moisture content.
- E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.
- B. Vacuum clean substrate.
- C. Apply primer to surfaces required by flooring manufacturer.

3.03 INSTALLATION - ACCESSORIES

- A. Install cant strips at base of walls where flooring is to be extended up wall as base.
- B. Install terminating cap strip at top of base; attach securely to wall substrate.

3.04 INSTALLATION - FLOORING

- A. Apply in accordance with manufacturer's instructions.
- B. Apply each coat to minimum thickness required by manufacturer.
- C. Finish to smooth level surface.
- D. Cove at vertical surfaces.

3.05 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.

END OF SECTION

	09 67 00 - 2
	Fluid-Applied Flooring

SECTION 09 91 13 EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
- 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, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 09 91 23 - Interior Painting.

1.03 REFERENCE STANDARDS

- A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.
- B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.
- C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, 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 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.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
 - 3. Label each container with color in addition to the manufacturer's label.

1.05 DELIVERY, STORAGE, AND HANDLING

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

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	Exterior Painting

- 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.

1.06 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.
- 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 exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless required 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 described explicitly in manufacturer's product instructions.
- B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- C. Colors: As indicated on drawings.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Paint E-OP - Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including concrete, primed wood, and primed metal.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): Exterior Latex; MPI #10, 11, 15, 119, or 214.
 - 3. Top Coat Sheen:
 - a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.

2.04 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
 - 1. Anti-Corrosive Alkyd Primer for Metal.
 - 2. Rust-Inhibitive Water Based Primer; MPI #107.
 - 3. Latex Primer for Exterior Wood; MPI #6.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.

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	Exterior Painting

- 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 affect proper application.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. 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. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
 - 2. Exterior 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 mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Concrete:
- G. Masonry:
- H. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.
- 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.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

END OF SECTION

	09 91 13 - 3
	Exterior Painting

SECTION 09 91 23 INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Prime surfaces to receive wall coverings.
- 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. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 09 91 13 - Exterior Painting.

1.03 REFERENCE STANDARDS

- A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.
- B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.
- C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).
- E. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, 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 products to be used in project; include description of each system.
- C. Samples: Submit three 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.
- D. 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.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

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	Interior Painting

1. See Section 01 60 00 - Product Requirements, for additional provisions.
2. Extra Paint and Finish Materials: 1 gal of each color; from the same product run, store where directed.
3. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

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. Provide lighting level of 80 fc measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.

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. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- C. Colors: As indicated on drawings.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, wood, uncoated steel, shop primed steel, galvanized steel, aluminum, and acoustical ceilings.
 1. Two top coats and one coat primer.
 2. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #143, 144, 145, 146, 147, or 148.
- B. Paint I-OP-DF - Dry Fall: Metals; exposed structure and overhead-mounted services in utilitarian spaces, including shop primed structural steel, metal fabrications, galvanized ducts, galvanized conduit, and galvanized piping.
 1. Shop primer by others.
 2. One top coat; white.

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	Interior Painting

3. Top Coat: Latex Dry Fall; MPI #118, 155, or 226.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is 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 mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
- 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 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 Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Sand wood and metal surfaces lightly between coats to achieve required finish.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

END OF SECTION

	09 91 23 - 3
	Interior Painting

SECTION 10 28 00
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Commercial toilet accessories.
- B. Under-lavatory pipe supply covers.
- C. Utility room accessories.

1.02 RELATED REQUIREMENTS

- A. Section 22 40 00 - Plumbing Fixtures: Under-lavatory pipe and supply covers.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.
- C. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- D. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- F. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).
- G. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

PART 2 PRODUCTS**2.01 MATERIALS**

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
- B. Keys: Provide 3 keys for each accessory to Owner; master key lockable accessories.
- C. Stainless Steel Sheet: ASTM A666, Type 304.
- D. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

2.02 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.
- B. Baked Enamel: Pretreat to clean condition, apply one coat primer and minimum two coats epoxy baked enamel.

2.03 COMMERCIAL TOILET ACCESSORIES

- A. Toilet Paper Dispenser: Double roll, surface mounted bracket type, stainless steel.
 - 1. Products:
 - a. AJW Architectural Products: UX142-SF www.ajw.com/#sle.
 - b. American Specialties, Inc: www.americanspecialties.com/#sle.
- B. Paper Towel Dispenser: Folded paper type, stainless steel, semi-recessed, with viewing slots on sides as refill indicator and tumbler lock.
 - 1. Capacity: 400 multifold minimum.
 - 2. Products:

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	Toilet, Bath, and Laundry Accessories

- a. AJW Architectural Products: U180 www.ajw.com/#sle.
- C. Waste Receptacle: Stainless steel, freestanding style with swing top.
 - 1. Liner: Removable seamless stainless steel receptacle.
 - 2. Minimum capacity: 10 gallons.
- D. Soap Dispenser: Liquid soap dispenser, wall-mounted, surface, with ABS cover; push type soap valve, check valve, and window gauge refill indicator, tumbler lock.
 - 1. Minimum Capacity: 48 ounces.
 - 2. Products:
- E. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
 - 1. 24 x 36.
 - 2. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
 - 3. Fixed Tilt Mirrors: Minimum 3 inches tilt from top to bottom.
 - 4. Products:
 - a. AJW Architectural Products <https://www.ajw.com/products/series/U7048B-2436/>
 - b. American Specialties, Inc: www.americanspecialties.com/#sle.
- F. Seat Cover Dispenser: Stainless steel, surface-mounted, reloading by concealed opening at base, tumbler lock.
- G. Grab Bars: Stainless steel, smooth surface.
 - 1. Standard Duty Grab Bars:
 - a. Push/Pull Point Load: 250 pound-force, minimum.
 - b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Finish: Satin.
 - d. Length and Configuration: As indicated on drawings.
 - e. Products:

2.04 UNDER-LAVATORY PIPE AND SUPPLY COVERS

- A. Under-Lavatory Pipe and Supply Covers:
 - 1. Insulate exposed drainage piping, including hot, cold, and tempered water supplies under lavatories or sinks to comply with ADA Standards.
 - 2. Exterior Surfaces: Smooth non-absorbent, non-abrasive surfaces.
 - 3. Construction: 1/8 inch flexible PVC.
 - a. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
 - b. Comply with ICC A117.1.
 - c. Microbial and Fungal Resistance: Comply with ASTM G21.
 - 4. Color: White.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

	10 28 00 - 2
	Toilet, Bath, and Laundry Accessories

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

	10 28 00 - 3
	Toilet, Bath, and Laundry Accessories

**SECTION 12 31 00
MANUFACTURED METAL CASEWORK**

PART 1 GENERAL**1.01 RELATED REQUIREMENTS**

- A. Section 06 10 00 - Rough Carpentry: Blocking and nailers for anchoring casework.
- B. Section 07 92 00 - Joint Sealants: Sealing joints between casework and countertops and adjacent walls, floors, and ceilings.
- C. Section 08 80 00 - Glazing: Methods for shop-glazing of casework.
- D. Section 09 21 16 - Gypsum Board Assemblies: Reinforcements in metal-framed partitions for anchoring casework.
- E. Section 09 22 16 - Non-Structural Metal Framing: Reinforcements in metal-framed partitions for anchoring casework.
- F. Section 12 36 00 - Countertops.

1.02 REFERENCE STANDARDS

- A. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- C. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- D. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

1.03 DESIGN REQUIREMENTS

- A. Reinforce frame counters in kennel and veterinary area, to safely support a load of 200 lbs concentrated on one square foot in any area with no indentation showing on surface and with permanent set not exceeding 0.005 inch.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Component dimensions, configurations, construction details, joint details, and attachments; manufacturer's catalog literature on hardware, accessories, and service fittings, if any.
- C. Shop Drawings: Indicate casework types, sizes, locations, using large scale plans, elevations, cross sections. Include rough-in and anchors, placement dimensions and tolerances and clearances required.
- D. Samples for Finish Selection: Fully finished, for color selection. Minimum sample size: 2 inches by 3 inches.
- E. Installer's qualification statement.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Accept casework on site. Inspect on arrival for damage.

1.07 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

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	Manufactured Metal Casework

- B. Manufacturer Warranty: Provide 5-year warranty against defects. Complete forms in Owner's name and register with manufacturer. Covered defects include, but are not limited to:
1. Ruptured, cracked, or stained finish coating.
 2. Discoloration or lack of finish integrity.
 3. Cracking or peeling of finish.
 4. Failure of hardware.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Metal Casework:
1. Jamestown Metal Products: www.jamestown.com/#sle.
 2. Kewaunee Scientific Corp: www.kewaunee.com/#sle.
 3. MultiLab LLC: www.multilab.net/#sle.
 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 FABRICATION

- A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.
- B. Casework: Die-formed metal sheet; each unit self-contained and not dependent on adjacent units or building structure for rigidity; factory-fabricated, factory-assembled, and factory-finished.
1. Style: Flush overlay - square edge.
 2. Primary Cabinet Material: Cold-rolled steel.
 3. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with the following front-to-back dimensions:
 - a. Base Cabinets: 24 inches.
 - b. Wall Cabinets: 16 inches.
 4. Steel Sheet Metal:
 - a. Gables, Front and Back Panels, Gusset Plates, Aprons, and Rails: 18 gauge, 0.0478 inch minimum thickness.
 - b. Drawers, Cabinet Floors, Shelves, Filler Panels and Drawer Dividers: 20 gauge, 0.0359 inch minimum thickness.
 - c. Backing Sheet to Door and Door Fronts: 22 gauge, 0.0299 inch minimum thickness.
 5. Structural Performance: Provide components that safely support the following minimum loads, without deformation or damage:
 - a. Base Units: 500 pounds per linear foot across the cabinet ends.
 - b. Drawers: 125 pounds.
 - c. Hanging Upper Cases: 300 pounds.
 - d. Shelves: 100 pounds.
 6. Corners and Joints: Without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.
 7. Edges and Seams: Smooth. Form counter tops, shelves, and drain boards from continuous sheets.
 8. Shelf Edges: Turned down 3/4 inch on each side and returned 3/4 inch front and back.
 9. Ends: Close open ends with matching construction.
 10. Welding: Electric spot welded; joints ground smooth and flush.
 11. Drawers and Doors: Fabricate drawer and door fronts of sandwiched sheets of sheet steel welded together and reinforced for hardware.
 - a. Fill with sound-deadening core.
 12. Glazing: Type and thickness standard with manufacturer.
 - a. Framed Doors: Float glass, with gaskets and removable stops; minimize rattling and vibration.

	12 31 00 - 2
	Manufactured Metal Casework

13. Filler Panels: Flanged on both sides, of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.
14. Separation: Use bituminous paint or non-conductive tape to coat metal surfaces in contact with cementitious materials, and to separate dissimilar metals.

2.03 CABINET HARDWARE

- A. Manufacturer's standard types, styles and finishes.

2.04 MATERIALS

- A. General: Manufacturer's standard materials for units specified, unless otherwise indicated.
- B. Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, CS or FS Type B, with G90/Z275 coating; stretcher leveled.
- C. Glass: Fully tempered float; ASTM C1036, Type 1, Quality Q3; ASTM C1048, tempered using horizontal tempering and complying with ANSI Z97.1; 4 mm thick minimum ; exposed edges ground, and cut or drilled to receive hardware; clear.

2.05 FINISHES

- A. Shop finish all components.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install casework, components and accessories in accordance with manufacturer's instructions.
- B. Use anchoring devices to suit conditions and substrate materials encountered.
- C. Set casework items plumb and square, securely anchored to building structure, with no distortion.
 1. Base Cabinets: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions require more than 3/4 inch leveling adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point.
 2. Wall Cabinets: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:
- D. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
 1. Variation of tops of Base Cabinets from Level: 1/16 inch in 10 feet.
 2. Variation of Bottoms of Upper Cabinets from Level: 1/8 inch in 10 feet .
 3. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
 4. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
 5. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.

3.02 ADJUSTING

- A. Adjust operating parts, including doors, drawers, hardware, fixtures to function smoothly.

END OF SECTION

	12 31 00 - 3
	Manufactured Metal Casework

**SECTION 12 32 00
MANUFACTURED WOOD CASEWORK**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Manufactured standard casework, with cabinet hardware.

1.02 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.
- C. BHMA A156.9 - Cabinet Hardware; 2020.
- D. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Component dimensions, configurations, construction details, joint details, attachments.
- C. Shop Drawings: Indicate casework types, sizes, and locations, using large scale plans, elevations, and cross sections. Include rough-in and anchors and reinforcements, placement dimensions and tolerances, clearances required, and keying information.
- D. Samples for Finish Selection: Fully finished, for color selection. Minimum sample size: 2 inches by 3 inches.
- E. Installer's Qualification Statement.
- F. Maintenance Data: Manufacturer's recommendations for care and cleaning.
- G. Finish touch-up kit for each type and color of materials provided.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Protect items provided by this section, including finished surfaces and hardware items during handling and installation. For metal surfaces, use polyethylene film or other protective material standard with the manufacturer.
- B. Acceptance at Site:
 - 1. Do not deliver or install casework until the conditions specified under Part 3, Examination Article of this section have been met. Products delivered to sites that are not enclosed and/or improperly conditioned will not be accepted if warping or damage due to unsatisfactory conditions occurs.
- C. Storage:
 - 1. Store casework in the area of installation. If necessary, prior to installation, temporarily store in another area, meeting the environmental requirements specified under Part 3, "Site Verification of Conditions" Article of this section.

1.05 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion, at no additional cost to Owner. Defects include, but are not limited to:
 - 1. Ruptured, cracked, or stained finish coating.
 - 2. Discoloration or lack of finish integrity.
 - 3. Cracking or peeling of finish.
 - 4. Failure of hardware.

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	Manufactured Wood Casework

PART 2 PRODUCTS

2.01 CASEWORK, GENERAL

- A. Quality Standard: AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Plastic Laminate Faced Cabinets: Custom Grade.

2.02 FABRICATION

- A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.
- B. Construction: As required for selected grade.
- C. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- D. Scribes and Fillers: Panels of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.

2.03 PLASTIC-LAMINATE-CLAD CASEWORK

- A. Plastic-Laminate-Clad Casework: Solid wood and wood panel construction; each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable levelers for base cabinets.
 - 1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.
 - 2. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with following front-to-back dimensions:
 - a. Base Cabinets: 22 inches.
 - b. Tall Cabinets: 22 inches.
 - c. Wall Cabinets: 16 inches.
 - 3. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
 - a. Finish: Matte or suede, gloss rating of 5 to 20.
 - b. Surface Color and Pattern: As selected by Architect from manufacturer's full line.
 - c. Exposed Interior Surfaces: Thermally fused laminate.

2.04 CABINET HARDWARE

- A. Manufacturer's standard types, styles and finishes.
- B. Comply with BHMA A156.9 requirements.

2.05 MATERIALS

- A. Wood-Based Materials:
 - 1. Solid Wood: Air-dried to 4.5 percent moisture content, then tempered to 6 percent moisture content before use.
- B. Concealed Solid Wood or Plywood: Any species and without defects affecting strength or utility.
- C. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications, complying with Grade requirements, and standard with the manufacturer.
- D. Thermally Fused Laminate (TFL): Melamine resin, NEMA LD 3, Type VGL laminate panels.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Site Verification of Environmental Conditions:
 - 1. Do not deliver casework until the following conditions have been met:
 - a. Building has been enclosed (windows and doors sealed and weather-tight).

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	Manufactured Wood Casework

- b. An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
 - c. Ceiling, overhead ductwork, piping, and lighting have been installed.
 - d. Installation areas do not require further "wet work" construction.
- B. Verify adequacy of support framing and anchors.
- C. Verify that service connections are correctly located and of proper characteristics.

3.02 INSTALLATION

- A. Perform installation in accordance with manufacturer's instructions.
- B. Use anchoring devices to suit conditions and substrate materials encountered. Use concealed fasteners to the greatest degree possible. Use exposed fasteners only where allowed by approved shop drawings, or where concealed fasteners are impracticable.
- C. Set casework items plumb and square, securely anchored to building structure.
- D. Align cabinets to adjoining components, install filler and/or scribe panels where necessary to close gaps.
- E. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
 - 1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
 - 2. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
 - 3. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
 - 4. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.
- F. Base Cabinets: Fasten cabinets to service space framing and/or wall substrates, with fasteners spaced not more than 16 inches on center. Bolt adjacent cabinets together with joints flush, tight, and uniform.
- G. Install hardware uniformly and precisely.
- H. Countertops: Install countertops intended and furnished for field installation in one true plane, with ends abutting at hairline joints, and no raised edges.
- I. Replace units that are damaged, including those that have damaged finishes.

3.03 ADJUSTING

- A. Adjust operating parts, including doors, drawers, hardware, and fixtures to function smoothly.

END OF SECTION

	12 32 00 - 3
	Manufactured Wood Casework

SECTION 12 36 00 COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for manufactured casework.
- B. Wall-hung counters and vanity tops.

1.02 RELATED REQUIREMENTS

- A. Section 12 31 00 - Manufactured Metal Casework.
- B. Section 123200 - Manufactured Wood Casework.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 - American National Standard for Particleboard; 2022.
- B. ANSI A208.2 - Medium Density Fiberboard (MDF) for Interior Applications; 2022.
- C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2023.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- E. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; 2013.
- F. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- G. PS 1 - Structural Plywood; 2023.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- F. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- G. Installer's qualification statement.

1.05 QUALITY ASSURANCE

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
 - 1. Flat Sheet Thickness: 1/2 inch, minimum.

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	Countertops

2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
 - b. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
3. Other Components Thickness: 1/2 inch, minimum.
4. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.
- B. Stainless Steel Countertops: , Type 304, stainless steel sheet; 16 gauge, 0.0625 inch nominal sheet thickness.
 1. Finish: 4B satin brushed finish.
 2. Exposed Edge Shape: Straight turndown with return; 1-1/2 inch high face, 1/2 inch return to face of case ; reinforced with hardwood or steel.
 3. Back and End Splashes: Same material; welded 1/4 inch radius coved joint to countertop; square top edge with 1 inch wide top surface and minimum 1/2 inch turndown.
 4. Splash Dimensions: 4 inch high by 1 inch thick, unless otherwise indicated.
 5. Sinks: Same material, same thickness; flush welded to counter; bottom sloped to outlet; radiused interior corners; drain outlet located in back corner.

2.02 MATERIALS

- A. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
- B. Particleboard for Supporting Substrate: ANSI A208.1 Grade 2-M-2, 45 pcf minimum density; minimum 3/4 inch thick; join lengths using metal splines.
- C. Medium Density Fiberboard for Supporting Substrate: ANSI A208.2.
- D. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- E. Joint Sealant: Mildew-resistant silicone sealant, white.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 1. Join lengths of tops using best method recommended by manufacturer.
 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 2. Height: 4 inches, unless otherwise indicated.
- C. Stainless Steel: Fabricate tops up to 144 inches long in one piece including nosings and back and end splashes; accurately fitted mechanical field joints in lengths over that dimension are permitted.
 1. Weld joints; grind smooth and polish to match.
 2. Provide stainless steel hat channel stiffeners, welded or soldered to underside, where indicated on drawings.
 3. Provide wall clips for support of back/end splash turndowns.
 4. Sound Deadening: Apply water resistant, fire resistant sound deadening mastic to entire bottom surface.

	12 36 00 - 2
	Countertops

-
- 5. Integral sinks: Fabricate with corners rounded and coved, double-walls for sink compartment partitions, and drainboards. Factory-punch holes for fittings, and weld sinks to countertops.
 - D. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach stainless steel countertops using stainless steel fasteners and clips.
- C. Seal joint between back/end splashes and vertical surfaces.

3.02 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

3.03 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

	12 36 00 - 3
	Countertops

SECTION 22 05 00 COMMON WORK RESULTS FOR PLUMBING

PART 1 - GENERAL

1.01 Summary

- A. Section Includes:
 - 1. Sleeves.
 - 2. Mechanical sleeve seals.
 - 3. Formed steel channel

1.02 Submittals

- A. Shop Drawings: Submit for piping and equipment identification list of wording, symbols, letter size, and color coding for pipe identification and valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- B. Product Data for Pipe and Equipment Identification: Submit for mechanical identification manufacturers catalog literature for each product required.

1.03 Water Quality Maintenance

- A. Provide plumbing fixture fittings in accordance with ASME A112.18.1 that prevent backflow from fixture into water distribution system.
- B. All piping, equipment, and components in contact with potable water, including, but not limited to, tanks, pumps, piping, valves, fittings and instrumentation, shall be ANSI/NSF-61 approved unless otherwise approved by ADEC. Materials in direct contact with drinking water shall be lead free in accordance with the "Reduction of Lead in Drinking Water Act":
 - 1. Not containing more than 0.2 percent lead when used with respect to solder and flux; and
 - 2. Not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures.

1.04 Quality Assurance

- A. Perform Work in accordance with the 2018 UPC and State of Alaska Amendments.
- B. Maintain one copy of each document on site.

PART 2 - PRODUCTS

1.01 Sleeves

- A. Sleeves for Pipes Through Non-fire Rated Floors: 18 gage thick galvanized steel.
- B. Sleeves for Pipes Through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Stainless steel pipe.

C. Sealant: Acrylic

1.02 Mechanical Sleeve Seals

A. Manufacturers:

1. GPT, Link-Seal.
2. Substitutions: Permitted.

B. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

1.03 Formed Steel Channel

A. Manufacturers:

1. Cooper B-Line
2. Unistrut
3. Substitutions: Permitted.

B. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

1.04 Firestopping

A. Firestopping Materials: Acrylic based flexible firestop sealant, UL listed and FM approved.

PART 3 - EXECUTION

1.01 Examination

A. Verify openings are ready to receive sleeves.

1.02 Installation - Sleeves

- A. Exterior watertight entries: Seal with mechanical sleeve seals.
- B. Set sleeves in position in forms. Provide reinforcing around sleeves.
- C. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
- D. Extend sleeves through floors 1 inch above finished floor level. Caulk sleeves.
- E. Where piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent work with firestopping insulation and caulk airtight. Provide close fitting metal collar or escutcheon covers at both sides of penetration.
- F. Install stainless steel escutcheons at finished surfaces.

1.03 Installation - Firestopping

- A. Firestopping Materials: Use UL or FM approved flexible firestop sealant, installed per manufacturer's instructions.

END OF COMMON WORK RESULTS FOR PLUMBING

SECTION 22 05 29 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Pipe hangers and supports.
2. Hanger rods.
3. Flashing.
4. Firestopping
5. Equipment Bases and Supports:

1.02 Submittals

A. Shop Drawings: Indicate system layout with location including critical dimensions, sizes, pipe hanger and support locations, and detail of trapeze hangers.

B. Product Data:

1. Hangers and Supports: Manufacturers catalog data including load capacity.

C. Design Data: Indicate load-carrying capacity of trapeze, multiple pipe, and riser support hangers. Indicate calculations used to determine load carrying capacity of trapeze, multiple pipe, and riser support hangers.

D. Manufacturer's Installation Instructions:

1. Hangers and Supports: Submit special procedures and assembly of components.

E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.03 Quality Assurance

A. Fire-Resistant Joints in Fire-Rated Floor, Roof, and Wall Assemblies: UL 2079 to achieve fire resistant rating as indicated on Drawings for assembly in which joint is installed.

B. Fire-Resistant Joints Between Floor Slabs and Exterior Walls: ASTM E119 with 0.10 inch water gage minimum positive pressure differential to achieve fire resistant rating as indicated on Drawings for floor assembly.

C. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested according to ASTM E84.

D. Perform Work according to AWS D1.1 for welding hanger and support attachments to building structure.

E. Passivate stainless steel welds per ASTM A967. Confirm absence of free iron in heat affected zone using ASTM A967, Copper Sulfate Test, Practice C.

F. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.

G. Installer: Company specializing in performing Work of this Section with three years' experience.

1.04 Field Measurements

A. Verify field measurements prior to fabrication.

PART 2 - PRODUCTS

1.01 Pipe Hangars And Supports

A. Manufacturers:

1. Carpenter & Paterson, Inc.
2. ERICO International Corporation
3. Unitron Product, Inc. / US-Strut
4. Substitutions Permitted

B. Plumbing Piping – DWV & Facility Storm Drainage:

1. Hangars shall be hot-dipped galvanized or stainless steel.
2. Conform to MSS SP69.
3. Hangars for Pipe Sizes 1/2 to 1-1/2 inch: Steel, adjustable swivel, split ring.
4. Hangars for Pipe Sizes 2 inches and Larger: Steel, adjustable clevis.
5. Multiple or Trapeze Hangars: Steel channels with welded spacers and hanger rods.
6. Wall Support for Pipe Sizes 3 inches and Smaller: Cast iron hook.
7. Wall Support for Pipe Sizes 4 inches and Larger: Welded steel bracket and wrought steel clamp.
8. Vertical Support: Steel riser clamp.
9. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
10. Copper Pipe Support: Vinyl coated, steel adjustable ring.

C. Plumbing Piping - Water:

1. Hangars shall be hot-dipped galvanized or stainless steel.
2. Conform to MSS SP69.
3. Hangars for Pipe Sizes 1/2 to 1-1/2 inch: Steel, adjustable swivel, split ring.
4. Hangars for Cold Pipe Sizes 2 inches and Larger: Steel, adjustable clevis.
5. Hangars for Hot Pipe Sizes 2 to 4 inches: Steel, adjustable clevis.
6. Multiple or Trapeze Hangars: Steel channels with welded spacers and hanger rods.

7. Wall Support for Pipe Sizes 3 inches and Smaller: Cast iron hook.
8. Wall Support for Pipe Sizes 4 inches and Larger: Welded steel bracket and wrought steel clamp.
9. Wall Support for Hot Pipe Sizes 6 inches and Larger: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron roll.
10. Vertical Support: Steel riser clamp.
11. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
12. Floor Support for Hot Pipe Sizes 4 inches and Smaller: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
13. Floor Support for Hot Pipe Sizes 6 inches and Larger: Adjustable cast iron roll and stand, steel screws, and concrete pier or steel support.
14. Copper Pipe Support: Vinyl coated, Steel ring.

1.02 Accessories

- A. Hanger Rods: Stainless steel threaded both ends, threaded on one end, or continuous threaded.

1.03 Flashing

- A. Metal Flashing: 26 gage stainless steel.
- B. Metal Counterflashing: 22 gage stainless steel.
- C. Lead Flashing:
 1. Waterproofing: 5 lb./sq. ft sheet lead.
 2. Soundproofing: 1 lb./sq. ft sheet lead.
- D. Flexible Flashing: 47 mil thickness sheet butyl; compatible with roofing.
- E. Caps: Stainless steel, 22 gage minimum; 16 gage at fire resistant elements.

1.04 Firestopping

- A. Firestopping Materials: Acrylic based flexible firestop sealant, UL listed and FM approved.

PART 3 - EXECUTION

1.01 Preparation

- A. Obtain permission from Architect/Engineer before using powder-actuated anchors.
- B. Do not drill or cut structural members.

1.02 Installation

- A. Pipe Hangers and Supports: According to MSS SP 69.
- B. Support horizontal piping as scheduled.

- C. Install hangers with minimum 1/2 inch space between finished covering and adjacent work.
- D. Place hangers within 12 inches of each horizontal elbow.
- E. Use hangers with 1-1/2 inch minimum vertical adjustment.
- F. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
- G. Support vertical piping at every floor. Support vertical cast iron pipe at each floor at hub.
- H. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.
- I. Support riser piping independently of connected horizontal piping.
- J. Provide vinyl coated hangers and supports in contact with copper piping.
- K. Design hangers for pipe movement without disengagement of supported pipe.
- L. Provide clearance in hangers and from structure and other equipment for installation of insulation. Refer to Section 22 07 00.
- M. Equipment Bases and Supports:
 - 1. Provide housekeeping pads of concrete, minimum 3-1/2 inches thick and extending 6 inches beyond supported equipment. Refer to Section 03 30 00.
 - 2. Using templates furnished with equipment, install anchor bolts, and accessories for mounting and anchoring equipment.
 - 3. Construct supports of steel members or formed steel channel. Brace and fasten with flanges bolted to structure.
 - 4. Provide rigid anchors for pipes after vibration isolation components are installed.
- N. Flashing:
 - 1. Provide flexible flashing and metal counterflashing where piping penetrates weather or waterproofed walls, floors, and roofs.
 - 2. Flash vent and soil pipes projecting 3 inches minimum above finished roof surface with lead worked 1 inch minimum into hub, 8 inches minimum clear on sides with 24 x 24 inches sheet size. For pipes through outside walls, turn flanges back into wall and caulk, metal counter-flash, and seal.
 - 3. Flash floor drains in floors with topping over finished areas with lead, 10 inches clear on sides with minimum 36 x 36 inch sheet size. Fasten flashing to drain clamp device.
 - 4. Seal floor, shower, and mop sink drains watertight to adjacent materials.
- O. Firestopping:
 - 1. Firestopping Materials installation: Install per manufacturer's instructions.

1.03 Schedules

PIPE HANGER SPACING		
PIPE MATERIAL	MAXIMUM HANGER SPACING Feet	HANGER ROD DIAMETER Inches
ABS (All sizes)	4	3/8
Cast Iron (All Sizes)	5	5/8
Cast Iron (All Sizes) with 10 foot length of pipe	10	5/8
CPVC, 1 inch and smaller	3	1/2
CPVC, 1-1/4 inches and larger	4	1/2
Copper Tube, 1-1/4 inches and smaller	6	1/2
Copper Tube, 1-1/2 inches and larger	10	1/2
PP-R, 2 inches and smaller	4	3/8
PP-R, 2-1/2 inches to 4 inches	5	1/2
PP-R, 4 inches and larger	6	1/2
PVC (All Sizes)	4	3/8
Steel, 3 inches and smaller	12	1/2
Steel, 4 inches and larger	12	5/8
Stainless Steel Tubing	4	3/8

END OF HANGARS AND SUPPORTS FOR PLUMBING

SECTION 22 11 00 FACILITY WATER DISTRIBUTION

PART 1 -- GENERAL

1.01 Summary

A. Section Includes:

1. Domestic water piping, above grade.
2. Unions and flanges.
3. Valves.
4. Pipe hangers and supports.
5. Pressure gages.
6. Pressure gage taps.
7. Thermometers.
8. Relief valves.
9. Strainers.
10. Hose bibs.
11. Backflow preventers.
12. Thermostatic Mixing Valves

1.02 Reference Documents

- A. ASTM F2389-07 - Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems
- B. CSA B137.11 - Polypropylene (PP-R) Pipe and Fittings for Pressure Applications
- C. NSF/ANSI 14 – Plastic Piping System Components and Related Materials

1.03 Submittals

A. Product Data:

1. Piping: Materials, fittings, and accessories. Manufacturer's catalog information.
2. Valves: Manufacturers catalog information with valve data and ratings for each service.
3. Domestic Water Specialties: Manufacturers catalog information, component sizes, rough-in requirements, service sizes, and finishes.
4. Pumps: Type, capacity, certified pump curves showing pump performance characteristics with pump and system operating point plotted. NPSH curve. Electrical characteristics and connection requirements.

B. Manufacturer's Installation Instructions: Pumps, valves, and accessories.

C. Manufacturer's Certificate: Products meet or exceed specified requirements.

1.04 Warranty

- A. Manufacturer shall warrant PP-R pipe and fittings for 10 years to be free of defects in materials or manufacturing.
 - 1. Warranty shall cover labor and material costs of repairing and/or replacing defective materials and repairing any incidental damage caused by failure of the piping system due to defects in materials or manufacturing.
 - 2. Warranty shall be in effect only upon submission by the contractor to the manufacturer valid pressure/leak test documentation indicating that the system was tested and passed the manufacturer's pressure/leak test.

1.05 Water Quality Maintenance

- A. All piping, equipment, and components in contact with potable water, including, but not limited to, tanks, pumps, piping, valves, fittings and instrumentation, shall be ANSI/NSF-61 approved unless otherwise approved by ADEC. Materials in direct contact with drinking water shall be lead free in accordance with the "Reduction of Lead in Drinking Water Act":
 - 1. Not containing more than 0.2 percent lead when used with respect to solder and flux; and
 - 2. Not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures.

1.06 Quality Assurance

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.
- B. Installer: Company specializing in performing Work of this Section with three years' experience.

PART 2 -- PRODUCTS

2.01 Domestic Water Piping, Above Grade – Mechanical Room

- A. Copper Tubing: ASTM B88, Type L drawn.
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, Alloy Grade Sb5 tin-antimony, or Alloy Grade Sn95 tin-silver, lead free solder
- B. PEX: ASTM F876, ASTM F877, AWWA C904-06, Crosslinked polyethylene tubing, rated for 100 PSI @ 180°F.
 - 1. Fittings and Joints: Compression sleeve fittings, ASTM f2080, NSF/ANSI 14, NSF/ANSI 61.

2.02 Domestic Water Piping, Above Grade – Warehouse

- A. PEX: ASTM F876, ASTM F877, AWWA C904-06, Crosslinked polyethylene tubing, rated for 100 PSI @ 180°F.

1. Fittings and Joints: Compression sleeve fittings, ASTM F2080, NSF/ANSI 14, NSF/ANSI 61.
 - B. PP-R: ASTM F2389, NSF/ANSI 61, NSF/ANSI 14., SDR 11. Rated for 140 PSI @ 120°F.
 1. Fittings and Joints: Socket weld fittings, Butt weld fittings, butt weld joints, socket couplings, NSF/ANSI 61, NSF/ANSI 14.
- 2.03 Unions And Flanges
- A. Unions for Pipe 2 inches and Smaller:
 1. Ferrous Piping: Class 150, malleable iron, threaded.
 2. Copper Piping: Class 150, bronze unions with soldered joints.
 3. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.
 - B. Flanges for Pipe 2-1/2 inches and Larger:
 1. Ferrous Piping: Class 150, forged steel, slip-on flanges.
 2. Copper Piping: Class 150, slip-on bronze flanges.
 3. Gaskets: 1/16 inch thick preformed neoprene gaskets.
- 2.04 Gate Valves
- A. 2 inches and Smaller: MSS SP 80, class 125, bronze body, bronze trim, threaded bonnet, non-rising stem, hand wheel, inside screw with back-seating stem, solid wedge disc, solder or threaded ends.
 - B. 2-1/2 inches and Larger: MSS SP 70, class 125, cast iron body, bronze trim, bolted bonnet, non-rising stem, hand-wheel, outside screw and yoke, solid wedge disc with bronze seat rings, flanged ends. Furnish chain-wheel operators for valves 6 inches and larger mounted over 8 feet above floor.
- 2.05 Globe Valves
- A. 2 inches and Smaller: MSS SP 80, class 125, bronze body, bronze trim, threaded bonnet, hand wheel, Buna-N composition disc, solder or threaded ends.
 - B. 2-1/2 inches and Larger: MSS SP 85, class 125, cast iron body, bronze trim, hand wheel, outside screw and yoke, flanged ends. Furnish chain-wheel operators for valves 6 inches and larger mounted over 8 feet above floor.
- 2.06 Ball Valves
- A. 2 inches and Smaller: MSS SP 110, class 150, bronze, two-piece body, chrome plated bronze ball, full port, teflon seats, blow-out proof stem, solder ends with union, or threaded ends, lever handle.
- 2.07 Check Valves
- A. Horizontal Swing Check Valves:
 1. 2 inches and Smaller: MSS SP 80, class 150, bronze body and cap, bronze seat, Buna-N disc, solder ends.

2. 2-1/2 inches and Larger: MSS SP 71, class 125, cast iron body, bolted cap, bronze or cast iron disc, renewable disc seal and seat, flanged ends.

B. Spring-Loaded Check Valves:

1. 2 inches and Smaller: MSS SP 80, class 150 bronze body, in-line spring lift check, silent closing, Buna-N disc, integral seat, solder ends.
2. 2-1/2 inches and Larger: MSS SP 71, class 125, wafer style, cast iron body, bronze seat, center guided bronze disc, stainless steel spring and screws, flanged ends.

2.08 Pipe Hangars And Supports

- A. Refer to Section 22 05 29.

2.09 Pressure Gages

- A. Gage: ASME B40.1, UL 393 with bourdon tube, rotary brass movement, brass socket, front calibration adjustment, black scale on white background.
1. Case: Stainless steel.
 2. Bourdon Tube: Brass.
 3. Dial Size: 2 inch diameter.
 4. Mid-Scale Accuracy: 1 percent.
 5. Scale: Psi.

2.010 Pressure Gage Taps

- A. Ball Valve: Brass for 250 psi.
- B. Pulsation Damper: Pressure snubber, brass with 1/4 inch NPT connections.

2.011 Stem Type Thermometers

- A. Thermometer: Adjustable angle, digital display, light powered, cast aluminum case with enamel finish, cast aluminum adjustable joint with positive locking device.
1. Size: 7-inch case.
 2. Power source: Photovoltaic cells requiring 10 lux of illumination for operation.
 3. Display: 9/16 inch LCD, 4 digits, 1/10 degree resolution, switchable between F and C, updated every 10 seconds.
 4. Stem: Aluminum, 3/4 inch NPT, 3-1/2 inch long, with glass passivated thermistor.
 5. Range: Minus 40 to 300 degrees F (minus 40 to 150 degrees C)
 6. Accuracy: 1 percent or 1 degree F, whichever is greater

2.012 Relief Valves

- A. Pressure Relief:
1. Bronze body, Teflon seat, steel stem and springs, automatic, direct pressure actuated at maximum 60 psi, UL listed for fuel oil, capacities ASME certified and labeled.

B. Temperature and Pressure Relief:

1. ANSI Z21.22 certified, bronze body, teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, temperature relief maximum 210 degrees F, capacity ASME certified and labeled.

2.013 Strainers

- A. 2 inch and Smaller: Threaded brass body for 175 psi CWP, Y pattern with 1/32 inch stainless steel perforated screen.
- B. 1-1/2 inch to 4 inch: Class 125, flanged iron body, Y pattern with 1/16-inch stainless steel perforated screen.
- C. 5 inch and Larger: Class 125, flanged iron body, basket pattern with 1/8 inch stainless steel perforated screen.

2.014 Hose Bibs

- A. Interior: Bronze or brass with integral mounting flange, replaceable hexagonal disc, hose thread spout, with hand wheel, integral vacuum breaker in conformance with ASSE 1011.

2.015 Backflow Preventers**A. Reduced Pressure Principle Backflow Preventer:**

1. Comply with ASSE 1013, NSF/ANSI 61.
2. Bronze body, with bronze internal parts and stainless steel springs.
3. Two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve opening under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two gate valves, strainer, and four test cocks.

2.016 Thermostatic Mixing Valves**A. Anti-Scalding Mixing Valve**

1. Comply with ASSE 1071, NSF/ANSI 61
2. Lead free brass body, with integral check valves to prevent cross contamination.

PART 3 -- EXECUTION**3.01 Preparation**

- A. Ream pipe and tube ends. Remove burrs.

3.02 General

- A. Where more than one piping system material is specified, provide compatible system components and joints. Use non-conducting dielectric connections whenever jointing dissimilar metals in open systems.
- B. Provide flanges, union, and couplings at locations requiring servicing. Use unions, flanges, and couplings downstream of valves and at equipment or apparatus connections. Do not use direct welded or threaded connections to valves, equipment or other apparatus.

- C. Use gate, ball, or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- D. Use globe valves for throttling, bypass, or manual flow control services.
- E. Use spring loaded check valves on discharge of hot water pumps.
- F. Use butterfly valves in heating water systems interchangeably with gate and globe valves.
- G. Use lug end butterfly valves to isolate equipment.
- H. Use 3/4 inch ball valves with hose end adapter and cap for drains at main shut-off valves, low points of piping, bases of vertical risers, and at equipment.
- I. Flexible Connectors: Use at or near pumps where piping configuration does not absorb vibration.

3.03 Installation

A. Thermometers and Gages:

1. Install one pressure gage for each pump, locate taps before strainers and on suction and discharge of pump; pipe to gage.
2. Install gage taps in piping.
3. Install pressure gages with pulsation dampers. Provide valve to isolate each gage.
4. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inches for installation of thermometer sockets. Allow clearance from insulation.
5. Provide instruments with scale ranges selected according to service with largest appropriate scale.
6. Install gages and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.
7. Adjust gages and thermometers to final angle, clean windows and lenses, and calibrate to zero.

B. Hangers and Supports:

1. Install hangers and supports according to Section 22 05 29.

C. Aboveground Piping:

1. Install non-conducting dielectric connections wherever jointing dissimilar metals.
2. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
3. Group piping whenever practical at common elevations.
4. Slope piping and arrange systems to drain at low points.
5. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 22 05 29.
6. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 22 07 00.

7. Provide access where valves and fittings are not accessible.
 8. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welding.
 9. Provide support for utility meters according to requirements of utility companies.
 10. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to Section 09 97 00.
 11. Install domestic and utility water piping according to ASME B31.9.
 12. Sleeve pipes passing through partitions, walls and floors. Refer to Section 22 05 00.
 13. Install firestopping at fire rated construction perimeters and openings containing penetrating sleeves and piping. Use UL or FM approved flexible firestop sealant, installed per manufacturer's instructions.
 14. Install unions downstream of valves and at equipment or apparatus connections.
 15. Install valves with stems upright or horizontal, not inverted.
 16. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.
 17. Install gate or ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.
 18. Install globe valves for throttling, bypass, or manual flow control services.
 19. Provide lug end butterfly valves adjacent to equipment when functioning to isolate equipment.
 20. Provide spring-loaded check valves on discharge of water pumps.
 21. Provide flow controls in water circulating systems as indicated on drawings.
 22. Install potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibs.
 23. Pipe relief from valves, back-flow preventers and drains to nearest floor drain.
 24. Test backflow preventers according to ASSE 5013.
 25. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to washing machine outlets.
 26. Install air chambers on hot and cold water supply piping to each fixture or group of fixtures (each washroom). Fabricate same size as supply pipe or 3/4 inch minimum, and minimum 18 inches long.
- 3.04 Field Quality Control
- A. Test domestic water piping system according to applicable code
- 3.05 Cleaning
- A. Flush system to remove traces of flux or other materials.

3.06 Disinfection Of Domestic Water System

- A. Prior to starting work, verify system is complete, flushed and clean.
- B. Verify pH of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- C. Inject disinfectant, free chlorine in liquid, powder and tablet or gas form, throughout system to obtain residual from 50 to 80 mg/L.
- D. Bleed water from outlets to obtain distribution and test for disinfectant residual at minimum 15 percent of outlets.
- E. Maintain disinfectant in system for 24 hours.
- F. When final disinfectant residual tests less than 25 mg/L, repeat treatment.
- G. Flush disinfectant from system until residual concentration is equal to incoming water or 1.0 mg/L. Neutralize disinfectant and dispose of disinfecting water in accordance with ADEC regulations.
- H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze according to AWWA C651.

END OF FACILITY WATER DISTRIBUTION

SECTION 22 13 00 FACILITY SANITARY SEWERAGE

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Sanitary sewer piping buried within 5 feet of building.
2. Sanitary sewer piping above grade.
3. Unions and flanges.
4. Valves.
5. Pipe hangers and supports.
6. Floor drains.
7. Cleanouts.
8. Bedding and cover materials.

1.02 Submittals

A. Product Data:

1. Piping: Pipe materials, fittings, and accessories. Submit manufacturers catalog information.
2. Valves: Manufacturers catalog information with valve data and ratings for each service.
3. Hangers and Supports: Manufacturers catalog information including load capacity.
4. Sanitary Drainage Specialties: Manufacturers catalog information, component sizes, rough-in requirements, service sizes, and finishes.
5. Pumps: Pump type, capacity, certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve. Include electrical characteristics and connection requirements.

B. Manufacturer's Installation Instructions: Material and equipment.

C. Manufacturer's Certificate: Products meet or exceed specified requirements.

1.03 Quality Assurance

A. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.

B. Installer: Company specializing in performing Work of this Section with three years' experience.

1.04 Field Measurements

- A. Verify field measurements prior to fabrication.

PART 2 - PRODUCTS

2.01 Sanitary Sewer Piping, Above Grade

- A. PVC Pipe: ASTM D1784, ASTM D1785.

- 1. Fittings: PVC, ASTM D2466
- 2. Joints: ASTM D2672, solvent weld socket.

- B. ABS Pipe: ASTM D2661 or ASTM F628, cellular core

- 1. Fittings: ABS, ASTM D2661.
- 2. Joints: ASTM D2235, solvent weld.

2.02 Unions And Flanges

- A. Unions for Pipe 2 inches and Smaller:

- 1. Copper Piping: Class 150, bronze unions with soldered joints.
- 2. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.
- 3. PVC Piping: PVC.

- B. Flanges for Pipe 2-1/2 inches and Larger:

- 1. Copper Piping: Class 150, slip-on bronze flanges.
- 2. PVC Piping: PVC flanges.
- 3. HDPE Piping: 150# HDPE Flanges
- 4. Gaskets: 1/16 inch thick preformed neoprene gaskets.

- C. PVC Pipe Materials: For connections to equipment and valves with threaded connections, furnish solvent-weld socket to MNPT screwed joint adapters and unions, or ASTM D2464, Schedule 80, threaded, PVC pipe.

2.03 Pipe Hangars And Supports

- A. Refer to Section 22 05 29.

PART 3 - EXECUTION

3.01 Examination

- A. Verify excavations are to required grade, dry, and not over-excavated.

3.02 Preparation

- A. Ream pipe and tube ends. Remove burrs.
- B. Prepare piping connections to equipment with flanges or unions.

- C. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

3.03 Installation

A. Aboveground Piping:

1. Establish invert elevations, slopes for drainage to 1/4 inch per foot minimum. Maintain gradients.
2. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Provide clearances at cleanout for snaking drainage system.
3. Encase exterior cleanouts in concrete flush with grade.
4. Install floor cleanouts at elevation to accommodate finished floor.
5. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
6. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
7. Install piping to maintain headroom. Do not spread piping, conserve space.
8. Group piping whenever practical at common elevations.
9. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 22 05 00.
10. Provide clearance in hangers and from structure and other equipment for installation of insulation. Refer to Section 22 07 00.
11. Provide access where valves and fittings are not accessible.
12. Install piping penetrating roofed areas to maintain integrity of roof assembly.
13. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
14. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to Section 09 97 00.
15. Install bell and spigot pipe with bell end upstream.
16. Sleeve pipes passing through partitions, walls and floors.
17. Install firestopping at fire rated construction perimeters and openings containing penetrating sleeves and piping. Use UL or FM approved flexible firestop sealant, installed per manufacturer's instructions.
18. Support cast iron drainage piping at every joint.

3.04 Field Quality Control

- A. Test sanitary waste and vent piping system according to Uniform Plumbing Code.

END OF FACILITY SANITARY SEWERAGE

SECTION 22 30 00
PLUMBING EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Indirect Fired water heaters.
 - 2. Thermal Expansion Tank
 - 3. Pressure Tanks
 - 4. Pressure Pump

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's literature for plumbing equipment.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit literature and parts list.

1.4 WATER QUALITY MAINTENANCE

- A. All piping, equipment, and components in contact with potable water, including, but not limited to, tanks, pumps, piping, valves, fittings and instrumentation, shall be ANSI/NSF-61 approved unless otherwise approved by ADEC. Materials in direct contact with drinking water shall be lead free in accordance with the "Reduction of Lead in Drinking Water Act":
 - 1. Not containing more than 0.2 percent lead when used with respect to solder and flux; and
 - 2. Not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures.

1.5 QUALITY ASSURANCE

- A. Water Heater Performance Requirements: Equipment efficiency not less than prescribed by ASHRAE 90.1 when tested in accordance with ANSI Z21.10.3.
- B. Perform Work in accordance with State of Alaska standards.

PART 2 - PRODUCTS**2.1 INDIRECT FIRED WATER HEATERS**

- A. Manufacturers:
 - 1. Amtrol.
 - 2. Substitutions: Permitted.
- B. Model: Commercial, heavy-duty rating by manufacturer. 5 year factory warranty.
- C. Tank: Welded 316 stainless steel. Constructed for working pressure of 150 psi, steel support base, taps for accessories, threaded connections of stainless steel.
- D. Exterior Coating: Polyethylene.
- E. Insulation: Urethane foam with heat loss under ½ degree F per hour.
- F. Heat exchanger: Multiple-pass, double wall vented type, IAPMO listed, removable for servicing, copper sweat connections.
- G. Temperature control: Integral thermostat.
- H. ASME rated temperature and pressure relief valve.

2.2 THERMAL EXPANSION TANKS

- A. Manufacturers:
 - 1. Amtrol
 - 2. Substitutions: Permitted
- B. Thermal expansion tanks shall be diaphragm or bladder type, welded steel, construction. Tanks shall be factory pre-charged. Surfaces contacting potable water shall be lead free.

2.3 PRESSURE TANKS

- A. Manufacturers:
 - 1. Amtrol.
 - 2. Substitutions: Permitted.
- B. Model: Commercial, 150 psig working pressure, 7 year factory warranty.
- C. Shell: Steel with steel or composite stand.
- D. Diaphragm: Butyl with antimicrobial covering.

- E. Connection: Stainless steel, threaded.
- F. Air valve: Projection welded.

2.4 PRESSURE PUMP

- A. Manufacturers:
 - 1. Grundfos
 - 2. Substitutions: Permitted.
- B. Packaged skid comprising of four pumps, suction and discharge headers, individual isolation valve and check valves, variable frequency drives, and associated appurtenances.
- C. The entire pumping package shall be NSF/ANSI/NSF-61 certified for potable drinking water and NSF-61 Annex G for a wetted area, weighted average lead content =0.25%.
- D. The control system shall include, as a minimum, the programmable logic station controller, variable frequency drives, a manifold mounted 4-20mA pressure transducer and any additional equipment as specified or as required to properly execute the sequence of operation.
- E. System shall require only suction, discharge and drain connections and single point power connections from a service entrance disconnect.
- F. All components shall be mounted and shipped as a single unit.
- G. The discharge of each pump shall be fitted with a control valve appropriate for station operation. Each pump and discharge valve assembly shall also be equipped with isolation valves so that the pump can be serviced while system is still filled.
- H. Pressure gauges shall be installed on the suction and discharge headers.
- I. Piping shall be sized so that water velocity shall not exceed 10.0 ft/sec in either the branches or manifolds.
- J. Pumps shall be protected from thermal accumulation via individual thermal relief mechanisms.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install equipment in accordance with manufacturer's instructions.

- B. Install water heaters in accordance to UL requirements. Coordinate with plumbing piping and related work to achieve operating system.
- C. Provide strap seismic bracing
 - 1. Tanks.
 - a. Provide one strap within the top third of the tank and a separate strap within the bottom third of tank.
 - b. Provide blocking between tank and wall for tight installation.
 - c. Lag straps and supporting structure to structural members. Do not use toggle bolts or fasteners just to wall panels.
- D. Clean and flush tanks after installation. Keep openings sealed until pipe connections are made.

END OF PLUMBING EQUIPMENT

SECTION 22 40 00 PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Lavatories
 - 2. Kitchen Sinks
 - 3. Urinals

1.1 SUBMITTALS

- A. Product Data: Submit manufacturer's literature for plumbing fixtures.

1.1 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit literature and parts list.

1.1 WATER QUALITY MAINTENANCE

- A. Provide plumbing fixture fittings in accordance with ASME A112.18.1 that prevent backflow from fixture into water distribution system.
- B. All piping, equipment, and components in contact with potable water, including, but not limited to, tanks, pumps, piping, valves, fittings and instrumentation, shall be ANSI/NSF-61 approved unless otherwise approved by ADEC. Materials in direct contact with drinking water shall be lead free in accordance with the "Reduction of Lead in Drinking Water Act":
 - 1. Not containing more than 0.2 percent lead when used with respect to solder and flux; and
 - 2. Not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures.

PART 2 - PRODUCTS

2.1 LAVATORIES

- A. Materials: Vitreous china, drop in lavatory, with drillings on 4-inch centers, round basin with front overflow.
- B. Faucet: Chrome, 4-inch centerset, single level handle, 1.2/1.5 gpm aerator, pop-up drain.
- C. Trim:
 - 1. P-trap: Polypropylene or PVC with threaded adapter
 - 2. Angle Stop: Quarter turn angle stop. Provide wall support.

3. Supply Tube: Corrugated stainless steel hose with single layer of stainless steel exterior braiding.
4. Thermostatic mixing valve: ASSE 1070 rated anti-scald valve

2.1 KITCHEN SINKS

- A. Materials: Stainless steel, double bowl sink, self-rimming, 20 gauge, under spray coating, with three faucet holes. Size 33" x 22", bowl depth of 8 inches.
- B. Faucet: Chrome, 8-inch centerset, 3-hole, single-handle, pull-out spray handle, 1.5 gpm aerator.
- C. Trim:
 1. P-trap: Polypropylene or PVC with threaded adapter
 2. Cup Strainer: Stainless steel body, washers, mounting nut, and slip nut. Stainless steel strainer basket with rotate style sealing.
 3. Angle Stop: Quarter-turn angle stop. Provide wall support.
 4. Supply Tube: Corrugated stainless steel hose with single layer of stainless steel exterior braiding.
 5. Chrome escutcheons for waste and water piping penetrations.
 6. Thermostatic mixing valve: ASSE 1070 rated anti-scald valve

2.1 URINALS

- A. Materials: Vitreous china, wall mount urinal, ¾" top-mount spud.
- B. Flushometer: Manual flush valve, polished chrome finish, ¾" top spud connection, ¾" supply pipe connection, 1 gallon per flush.
- C. Trim:
 1. P-trap: Polypropylene or PVC with threaded adapter

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify adjacent construction is ready to receive rough-in work of this section.
- B. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough in and installation.

3.1 INSTALLATION

- A. Install each fixture with chrome plated rigid or flexible supplies with screwdriver stops, reducers, and escutcheons.
- B. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

END OF PLUMBING FIXTURES

SECTION 23 05 00 COMMON WORK RESULTS FOR MECHANICAL

PART 1 - GENERAL

1.01 Extent Of Coverage

- A. The requirements of this Section apply to all Division 22, 23 and referenced Sections from Division 43 including, but not limited to the following systems:
 - 1. Water utility transmission systems.
 - 2. Sanitary sewerage utility transmission systems.
 - 3. Heating utility transmission systems.
 - 4. Plumbing systems.
 - 5. Heating systems.
 - 6. Ventilation systems.
 - 7. Fuel systems.
 - 8. Controls systems.
- B. All requirements of Division 0 and 1 apply to these Specifications.

1.02 Work Included

- A. Furnish all labor, materials, equipment, supervision of labor and performance of all operations required to completely install code compliant and satisfactorily operating mechanical and plumbing systems as defined herein and on Plans.
- B. The intent of the Specifications and accompanying Plans is to provide a complete and operational facility with complete systems as shown, specified and required by applicable codes. Include all work specified in the Specifications and shown on the accompanying Plans including controls, fasteners, appurtenances, connections, etc., in the finished job.
- C. The Specifications and the accompanying Plans are complementary, and what is called for by one shall be as binding as if called for by both. Items shown on the Plans are not necessarily included in the Specifications and vice versa.
- D. Imperative language is frequently used in the Specifications. Except as otherwise specified, requirements expressed imperatively are to be performed by the Contractor.
- E. The Plans are diagrammatic and schematic in nature.
 - 1. The Plans do not show every offset, bend, tee, or elbow which may be required to install work in the space provided and avoid conflicts. Follow the Drawing as closely as is practical to do so and install additional offsets, bends, tees, and elbows where required by local conditions and

- measurements taken at the Building, subject to approval, and without additional cost to the Owner.
2. The plans do not show all taps, fittings, valves, and dampers required to integrate in a fully functional controls and process systems. Coordinate all work with the controls system and Sequence of Operation as well as process documents and Functional Narrative.
 3. Do not scale the mechanical drawings. Locations of equipment are approximate unless specifically dimensioned on the Plans. Equipment and fixtures shall be located to maintain code compliance and manufacturer's recommended installation clearances.
 4. The right is reserved to make any reasonable changes in outlet location prior to roughing-in.
- F. Notify Owner's Representative in writing immediately of any identified conditions that will impact the timely and successful installation of the systems in accordance with the Plans and Specifications.

1.03 Definitions:

- A. Definitions provided within this Section shall be superseded by definitions provided in Division 1.
- B. "Provide": Includes the furnishing and installation of all materials, equipment, products, labor, subcontracts, appurtenances, mark-ups, taxes, permits, and any other item which may be required to provide complete operable systems.
- C. "Furnish": Purchase and deliver to the job site, materials or labor as shown on the Plans or specified herein.
- D. "Install": The installation, setting in place, connection to, bolting down, supporting or any operation to make complete and operable.
- E. "Rough In / Connect Only": This means to provide an appropriate system connection such as supplies with stops, continuous wastes with traps, shut-off valves required, and all piping connections, testing, etc.
- F. "Accessible": Means arranged so that an appropriately dressed man 6'2" tall weighing 250 pounds, may approach the area in question with tools and products necessary for the work intended, and may then position himself to properly perform the task to be accomplished, without disassembly or damage to the surrounding installation.
- G. "Serviceable": means arranged so that the component or product in question may be properly removed, and replaced without disassembly, destruction, or damage to the surrounding installation or piece being serviced.
- H. "Streamlining" In many instances, the products, reference standards, and other itemized specifications have been listed without verbiage. In these cases, it is

implied that the Contractor shall provide the products and perform according to the references listed.

- I. “Demolish”: Means the removal of equipment and materials from the project including disposal off-site in compliance with applicable ADEC and other regulations.

1.04 Quality Assurance

A. Regulatory Requirements:

- 1. General: All work and materials shall conform to all local, State, and Federal codes, utility installation requirements, and other applicable laws and regulations. Verify with local Authority Having Jurisdiction for amendments.
- 2. All equipment furnished utilizing electrical or electronic products, shall be certified as complying with the most recent list of accredited electrical testing laboratories approved by the State of Alaska. Equipment not complying shall be replaced with certified equipment at no additional labor or materials cost to the Owner.

B. Permits:

- 1. Contractor shall obtain all required life/safety permits from the Authority Having Jurisdiction which may be State, Borough, and/or local entity.
- 2. All water and wastewater utility services shall be installed, sterilized, and tested in compliance with Alaska Department of Environmental Conservation regulations.
- 3. Contractor shall obtain all utility permits. Systems are to be installed in compliance with utility installation guidelines.
 - a. Contractor shall obtain and install all meters as required by the local utility.
- 4. Unless noted under Division 0 and 1, Contractor shall pay for all permits.

C. Materials and equipment shall be new. Work shall be of good quality, free of faults and defects and in conformance with the Contract Documents.

D. Apparatus shall be built and installed to deliver its full rated capacity at the efficiency for which it was designed.

E. The entire plumbing and mechanical system apparatus shall operate at full capacity without objectionable noise.

F. Materials and Equipment:

- 1. Each piece of equipment furnished shall meet all detailed requirements of the Plans and Specifications and shall be suitable for the installation shown. Notify the Engineer of any shortcomings found during the bid

period. Equipment not meeting all requirements will not be acceptable, even though specified by name along with other manufacturers.

2. Where two or more units of the same class of equipment are furnished, use products of the same manufacturer; component parts of the entire system need not be products of the same manufacturer.
3. Provide all materials and equipment, new and free from defects and of the size, make, type and quality herein specified.

G. Substitutions:

1. Substitutions in materials and equipment shall follow the requirements of Division 1.
2. The Contractor shall ensure that all substitutions have equal or better performance and will fit within the available space. The Contractor shall bear the full costs associated with a substitution including the costs of other trades, additional equipment and materials required for an acceptable installation, as well as any project delays that the substitution may generate.

H. Workmanship:

1. General: All materials shall be installed in a neat and workmanlike manner.
2. Only craftsman skilled in their trade shall be employed.
3. Manufacturer's Instructions: Follow manufacturer's recommendations where they cover points not specifically indicated. If they are in conflict with the Plans and Specifications, obtain clarification from the Owner's Representative before starting work.

I. Cutting and Patching:

1. Cutting, patching, and repairing for the proper installation and completion of the work specified in this Division, including plastering, masonry work, concrete work, carpentry work, and painting, shall be performed by skilled craftsmen of each respective trade in conformance with the appropriate Division of Work.
2. Fill holes which are cut oversize so that a tight fit is obtained around the objects passing through.

1.05 Coordination:

- A. Coordinate work with all trades to avoid conflicts, errors or delays.
- B. Coordinate all wall and floor penetrations/openings, supports, and component interfaces with the module fabrication team.

1. Module fabrication is not to proceed until details and shop drawings showing these points of collaboration have been submitted and reviewed by the design team.
- C. Coordinate the location and access for all operable and maintainable items.
- D. The work is inclusive of all Specifications and Plans. Fully review all contract documents and provide all plumbing and mechanical related work noted in all parts of the documents.

1.06 Scheduling

- A. Contractor shall schedule all work, including but not limited to the ordering of materials, demolition, installation, testing, balancing, and inspections to ensure a timely delivery of the project in accordance with the contract.
- B. Contractor shall schedule their work with all trades in advance to optimize system routing and reduce installation time.
- C. Contractor shall schedule and coordinate all interruptions of utilities or mechanical system operation in writing with the Owner's Representative at least one week in advance or as directed under Division 1.
- D. Coordinate commissioning and close-out testing activities with the Owner's Representative, design team, Commissioning Agent and all trades involved in the process. Coordinate timing of all commissioning activities into the master construction schedule.

1.07 Project Conditions

- A. Contractor shall field measure and verify dimensions prior to the fabrication and ordering of equipment.
- B. Contractor shall verify access routes for equipment and materials to be removed and installed without impacting finishes or the dismantling of equipment unless specifically noted in the Specifications and Plans.
- C. Immediately notify the Owner's Representative if any major damage, defect or deterioration of existing equipment, systems, or structural members is found on items noted to remain that will impact the successful installation and operation of new systems or create an unsafe environment.

1.08 Qualifications

- A. Manufacturers: All equipment and materials shall be provided from a manufacturer who has been in business for a minimum of three years and provides ready access to replacement parts.
- B. Installers: Contractor, subcontractors, and their supervisors shall have a minimum of three documented years of experience installing systems similar in type and size.

1.09 Submittals

- A. Provide submittals in accordance with the requirements of each Specification Section and Division 1.
- B. Submission Requirements:
 - 1. Provide submittals for engineer's review electronically, in PDF format. Provide separate files for each Specification Section.
 - a. Provide Bookmarks for each piece of equipment and/or system.
 - 2. The bulk of the shop drawings and product data, except controls and instrumentation, shall be included with the original submittal. Controls and Instrumentation submittals may be submitted separately, but shall be complete when submitted. Partial submittals will not be accepted.
 - 3. All resubmittals shall include a cover sheet referencing each review comment and how the resubmittal resolves the comment. Changes from the original submittal shall be clearly identified including items that were previously approved.
 - 4. Assure that all deviations from Plans and Specifications are specifically and clearly identified and called to the attention of the Engineer in the submittals. Failure to comply will void review automatically.
- C. Product Data:
 - 1. In general, submit product data for all materials, equipment, and appurtenances required for a complete and operational system. Include manufacturer's detailed shop drawings, specifications, performance information, and data sheets.
 - 2. Clearly identify the model number and all accessories being provided. If the equipment is scheduled in the Plans, clearly show the equipment Tag/Identifier on the first page of that piece of equipment's submittal information.
 - 3. Cross out accessories and options that are not being provided.
 - 4. Indicate equipment dimensions and operating weights including bases and weight distribution at support points.
 - 5. Identify equipment horsepower/watts/amperage, voltage, hertz, phase, and service factor.
 - 6. For commodity items such as piping and ductwork, unless specifically noted otherwise within the specification, a general statement of what materials and joining methods may be provided for each type of system. For example, "Hydronic Heating Piping: Type L Copper, lead-free solder joints."
- D. Shop Drawings:

1. Submit large scale dimensioned shop drawings of any custom equipment or system components.
 - a. Provide shop drawings for all products, systems, system components, and special supports which are not a standard catalog product and which may be fabricated for the Contractor or by the Contractor.
 - b. Items to include, but not limited to:
 - 1). Ventilation hoods.
 - 2). Anti-vortex assemblies.
 2. Include shop drawings of plumbing systems integrated into the module construction. Shop drawing is to note not only how the plumbing device is being installed but also the construction and fastening/sealing system of the adjacent module system. Shop drawing submittal shall include, but not limited to, the following items:
 - a. Floor drains.
 - b. Emergency Shower drain receiver including grating system.
 3. Do not proceed with fabrication of materials until Shop Drawings have been submitted and approved.
- E. Coordination Drawings
1. Prepare and submit Shop Drawings to demonstrate coordination of trades in the proper planning and installation and arrangement of all work as well as permanent access to equipment and maintainable items.
 2. Submit large scale dimensioned shop drawings of the following areas in the project:
 - a. All mechanical and plumbing systems.
 3. Coordination Drawings shall include the following systems overlaid in the same drawing:
 - a. Plumbing Systems
 - b. Water Treatment Systems
 - c. Heating Systems
 - d. Ventilation Systems
 - e. Control System major special components such as panels.
 - f. Electrical Systems as follows:
 - 1) Lights
 - 2) Panels, transfer switches, transformers
 - 3) Disconnects, motor starters, VFDs

- 4) Conduits 3 inches and larger
- 5) Cable trays
- 6) Busways
- 7) Power generation equipment
4. Do not proceed with installation or fabrication of materials until Coordination Drawings have been submitted and approved.
- F. Commissioning:
 1. Coordinate additional submittal and start-up documentation with Commissioning specification sections.

1.010 Closeout Submittals

- A. Provide closeout submittals in accordance with the requirements of each Specification Section and Division 1.
- B. Operation and Maintenance Manual
 1. Provide requirements noted under each Specification Section and in Division 1
 2. The manuals shall be organized the same as under the Submittals section above.
 3. Provide the Owner's Representative hard and electronic copies per Division 1.
 4. Provide an index noting that the beginning of the manual noting each specification section and what materials/pieces of equipment are provided therein.
 - a. For electronic copies, provide Bookmarks for each piece of equipment and/or major system.
 5. Provide a cover sheet for each piece of equipment that includes the following information:
 - a. General Contractor's name, address, and phone number.
 - b. Installing Contractor's name, address, and phone number.
 - c. Manufacturer's warranty contact information.
 - d. Nearest source of spare parts including company's name, address, and phone number.
 6. Submit information on materials/equipment that will require regular maintenance. Items such as lavatory bowls need not be resubmitted. For each included item, provide the following:
 - a. Information noted under Submittals section above. Update information based on final installation.

- b. Manufacturer's Operation and Maintenance manuals.
 - c. Exploded views of equipment.
 - d. Replacement parts list.
 - e. Capacity curves and charts.
 - f. Wiring diagrams.
 - g. Assembly piping diagrams noting valves and system appurtenances.
 - h. Warranty information.
7. Maintenance Schedules: For each piece of equipment or system that requires regular maintenance, provide a chart that includes the following:
- a. Unique equipment identifier.
 - b. Maintenance activity as recommended by the manufacturer.
 - c. Time interval associated with each activity (annually, monthly, weekly, etc.).
 - d. Boxes for service providers to initial when scheduled service is completed.
8. Startup and Shutdown Narratives: For each system and major piece of equipment, provide a written narrative on how to startup and shutdown the system.
- a. Organize the narrative in a bulleted, checklist type format.
 - b. Identify specific valve numbers or equipment tags used in the process.
 - c. Include system schematics, screen shots, and/or photographs as required to convey information and processes.
- C. Record Drawings
- 1. In addition to other requirements, mark up a clean set of Drawings as the work progresses, to show the dimensioned location and routing of all mechanical work which will become permanently concealed. Show routing and location of items cast in concrete or buried underground. Show routing of work in permanently concealed blind spaces within the building. Work located in spaces with access, or above suspended ceilings, is not considered permanently concealed. Show complete routing and sizing of any significant revisions to the systems shown.
 - 2. Make all markups in a color other than black, preferably red, to highlight the change.
 - 3. Show all contract changes including field directives and additional information provided by the design team during construction.

4. Show the location of all valves.
 5. At completion of the project, deliver these drawings to the Owner's Representative and obtain written receipt.
- D. Provide the following items printed with non-fading ink and either framed with plexiglass or laminated and hung in the mechanical room:
1. Valve directory that includes service and normal operating position.
 2. Water treatment system and distribution schematic along with Functional Narrative
 3. Domestic water system schematic along with sequence of operation.
 4. Heating system schematic along with sequence of operation.
 5. Fuel system schematic along with sequence of operation.
 6. Ventilation system schematic along with sequence of operation.
 7. Additional maintenance instructions as noted within the specification section.
- E. Commissioning:
1. Coordinate additional close-out testing and documentation with Commissioning specification sections.

1.011 Electrical Work

- A. Reference the electrical Specifications and Plans for additional requirements.
- B. All electrical work, equipment, wiring, devices, and components shall comply with the requirements of local and national electrical codes and with Division 24, 25, 26, 27, and 28.
- C. Contractor shall verify the voltage and phase that will be available for the project. Bring to the immediate attention of the Engineer if the provided voltage and phase is different from that which is noted on the Plans or Specifications for equipment.
- D. Unless otherwise indicated on the electrical Plans or Specifications, provide all mechanical equipment motors, thermal overload switches, control relays, time clocks, thermostats, valve operators, float controls, damper motors, electric-pneumatic and pneumatic-electric switches, electrical components, wiring, and any other miscellaneous controls for equipment specified under Division 22 and 23.
- E. All electrical equipment, devices, and components that are tested by Underwriters Laboratories, Inc. shall be UL listed and shall bear a UL label.
- F. Starters and Disconnects: Suitable for performing the control functions required, with the exception of self-contained equipment and where the starters and/or disconnects are provided or furnished as part of the control package.

- G. Equipment Wiring: Interconnecting wiring within a piece of mechanical equipment shall be provided with the equipment unless required otherwise. This does not include the wiring of motors, starters, and controllers as provided under electrical Specifications.
- H. Control Wiring: All wiring for mechanical equipment shall be provided under this section.
- I. Mounting and Wiring:
 - 1. All 120 volt and higher wiring shall be installed by a licensed electrician.
 - 2. Coordinate between the mechanical and electrical trades the installation of equipment electrical appurtenances such as starters, disconnects, VFDs, time clocks, controllers, line voltage thermostats and similar items.
 - 3. Coordinate the installation and wiring of fire life-safety devices that impact the mechanical equipment such as duct smoke detectors, smoke dampers, smoke evacuation systems and equipment operation that is based on a signal from the fire alarm panel.

1.012 Use Of Mechanical Systems During Construction

- A. The Contractor shall request in writing to the Owner's Representative for the use of any plumbing or mechanical system during construction that is not limited to startup, testing or balancing.
- B. The use of equipment and systems during construction shall not alter the Warranty requirements of this Section and Division 1. The Contractor shall provide extended warranties as required to fulfill the requirements of the contract.
- C. Contractor shall pay for all utilities and fuel associated with the operation of the systems unless specifically noted otherwise under Division 1 or in writing from the Owner.

1.013 Delivery, Storage, And Handling

- A. Reference Division 1 for additional requirements.
- B. Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.
- C. Delivery: Deliver materials free of defect in manufacturer's original, unopened, undamaged containers with identification labels intact.
- D. Storage: Provide adequate storage at the job site for timely access to materials.
 - 1. Provide heated storage for products such as mastics, caulking, and some electronic processors to maintain manufacturer's recommended minimum storage temperature.
 - 2. Store materials to protect from corrosion or warping.
- E. Protection: Protect materials from damage during construction.

- F. Piping, ductwork, and equipment shall have open ends capped or sealed during storage and installation.
- G. Module Delivery
 - 1. All equipment and materials are to be secured for shipment to final destination.
 - 2. Durably seal all openings into piping, ductwork, and modules for shipment.
 - 3. Remove and safely store exterior components such as ventilation hoods and boiler flues for travel.
 - 4. Reinstall all components once modules are installed. Provide new gaskets as required for tight, no-leakage installation.

1.014 Spare Parts And tools

- A. Provide spare parts and tools as noted within each Section and within Division 1.

1.015 INSPECTIONS

- A. Reference Division 1 for additional requirements.
- B. All work and materials shall be available for inspection by the Owner's Representative, the Design Team, and the Authority Having Jurisdiction at all times.

1.016 Warranty

- A. Warranty information shall be provided to the more stringent requirements of this Section, Division 1 and the specific specification Sections.
- B. Provide manufacturers written warranties for material and equipment furnished including parts and labor for a period of one year from the date of Owner acceptance of work.
- C. Correct warranty items promptly upon notification.

PART 2 - PRODUCTS

2.01 Materials And Equipment

- A. All materials and equipment shall be new unless specifically noted in the contract documents.
- B. Provide materials and equipment from major and reputable manufacturers that have the availability of local service providers and expeditious access to spare parts.
- C. Provide all materials that are incidental to the installation of equipment and systems to include, but not limited to fasteners, sealants, mastics, tapes, caulking, gaskets, grout, fluxes and solder, etc.

- D. Provide materials from the same manufacturer where possible.
- E. All materials shall be free of asbestos and other hazardous materials.
- F. All materials in contact with domestic and potable water shall be free of lead and be certified compliant with NSF 61.

2.02 Motors

- A. Reference Division 26 for additional requirements.
- B. Motors shall be furnished as an integral part of driven equipment.
- C. Motors shall be listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to Authorities Having Jurisdiction, and marked for intended use.
- D. Motors shall be built to NEMA standards for the service intended.
- E. Motors shall be rated for the voltage specified, suitable for operation within the range of 10 percent above to 10 percent below the specified voltage.
- F. Service Factor: Motors 1/2 HP and larger to have minimum service factor of 1.15 unless noted otherwise.
- G. Duty: Continuous duty at ambient temperature of 105 deg F and at altitude of 3300 feet above sea level.
- H. Overload Protection: Motors under 1/2 HP shall have internal overload protection.
- I. Provide single speed, 1750 RPM motors unless otherwise noted.
- J. Inverter Ready: All motors over 1/2 HP shall be inverter ready.
- K. Efficiency: Premium Efficiency.
- L. Enclosure: Unless otherwise noted, indoor installations to be Open Drip-Proof (ODP) and outside installations to be Totally Enclosed Fan-Cooled (TEFC). Motors in hazardous (classified) areas shall be rated for the classification.
- M. Insulation: Provide motors with minimum Class F insulation.
- N. Belt Drive Motors: Furnish drives on belt drive equipment of not less than 150 percent of equipment brake horsepower required for performance specified.
- O. Variable Speed Driven Motors:
 - 1. Provide Energy- and Premium Efficient Motors: Minimum Class B temperature rise, Class F insulation.
 - 2. Inverter-Duty Motors: Minimum Class F temperature rise, Class H insulation.
 - 3. Provide integral shaft grounding ring.

PART 3 - EXECUTION

3.01 Examination

- A. Reference Division 1 and 2 for additional requirements.
- B. Site Verification of Conditions: Verify that site conditions are acceptable for installation of materials. Do not proceed with installation until unacceptable conditions are corrected.

3.02 Installation

- A. Install all materials and equipment in accordance with the manufacturer's recommendations and local codes.
- B. All work shall be installed professionally and to industry best practices.

3.03 Painting

- A. Painting shall comply with the requirements of Division 9 Specifications.
- B. Paint equipment, piping, and materials as noted in the Plans and within specific Sections.
- C. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

3.04 Erection Of Metal Supports And Anchorage

- A. Reference Division 5 for additional requirements.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.
- C. Field Welding: Comply with AWS D1.1.

3.05 Motor Installation

- A. Remove transportation braces from vibration platforms.
- B. Align motors, bases, and shafts.
- C. Verify motor operation is free of vibration under all conditions.
- D. Verify bearing lubrication prior to operating.
- E. Verify proper motor rotation.
- F. Verify amperage draw for all phases under design conditions is below nameplate rating.
- G. Belt Driven Equipment:
 - 1. Align pulleys and belts.
 - 2. Tension belts according to manufacturer's recommendations.
 - 3. Verify belt guards are in place.

3.06 Startup

- A. Startup shall be provided to the more stringent requirements of this Section, Division 1 and the specific specification Sections.
- B. Startup all equipment in accordance with manufacturer's instructions.
- C. Ensure connected systems are clean of debris and ready for system testing.
- D. Coordinate electrical and other trades work to complete timely startup of all equipment and systems.

3.07 Training

- A. Training shall be provided to the more stringent requirements of this Section, Division 1 and the specific specification Sections.
- B. The Contractor shall provide a minimum of 20 hours of instruction on the operation and maintenance of the installed systems and equipment.
 - 1. Coordinate with the Owner the personnel that are to attend.
 - 2. Training shall be scheduled for the time(s) that best fits the Owner's personnel's time schedule.
- C. The Operation and Maintenance Manual shall be used as a guide during the training.
- D. Equipment training shall be provided by a factory trained representative unless otherwise noted.
- E. Training shall include a classroom portion and a field portion.
 - 1. The classroom portion of the training shall include the following:
 - a. Overview of the systems and their orientation within the facility.
 - b. "Big picture" explanation of the systems as a whole and how they operate.
 - c. Specific equipment training including preventative maintenance activities, using the manufacturer's maintenance guide as a reference.
 - d. Additional training items appropriate for a classroom environment.
 - 2. The field portion shall be onsite and shall include the following:
 - a. Building walk through identifying the locations of all equipment, isolation valves, control/fire dampers, and other items that will be accessed during the operation of the facility. Reference the Plans during the walk through for orientation.
 - b. Step-by-step procedures on how to startup and shutdown the systems and pieces of equipment.

- c. Regular maintenance activities as identified in the Operations Manual's regular Maintenance Schedules.
 - d. Point out specific maintenance appurtenances such as grease fittings, valves, and control panel buttons used during maintenance and daily operation activities.
 - e. Walk through control panel and sensor user interfaces and explain what each screen is showing as well as how to change system setpoints through the interface.
- F. All training shall be digitally video recorded.
 - 1. Videos shall be converted to cross-platform, open source formats such as MP4 or equal.
 - 2. Videos shall be separated by equipment and system. File names shall clearly indicate the training contents.
 - 3. Submit 3 copies of the recorded training to the Owner either via DVD or solid state storage device such as a USB Flash Drive.
- G. Certification: A paper survey shall be provided to each trainee immediately after the end of each training session.
 - 1. The survey shall include scoring on if the training was applicable, helpful, and sufficient.
 - 2. All surveys are to be submitted to the Owner's Representative.
 - 3. If a training session was deemed to be not helpful, applicable, or complete, the Contractor shall provide additional training at no additional cost to the Owner.

3.08 Testing

- A. Testing is to be completed in accordance with the requirements of Division 1 and the specific specification Sections.
- B. Testing is to comply with the minimum requirements of all codes and regulations.

END OF COMMON WORK RESULTS FOR MECHANICAL

SECTION 23 05 29

HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Pipe hangers and supports.
2. Hanger rods.
3. Flashing.
4. Sleeves.
5. Mechanical sleeve seals.
6. Formed steel channel.
7. Firestopping
8. Equipment Bases and Supports:

1.02 Submittals

- A. Shop Drawings: Indicate system layout with location including critical dimensions, sizes, and pipe hanger and support locations and detail of trapeze hangers.
- B. Product Data:
 1. Hangers and Supports: Manufacturers catalog data including load capacity.
- C. Design Data: Indicate load-carrying capacity of trapeze, multiple pipe, and riser support hangers. Indicate calculations used to determine load carrying capacity of trapeze, multiple pipe, and riser support hangers.
- D. Manufacturer's Installation Instructions:
 1. Hangers and Supports: Special procedures and assembly of components.
- E. Manufacturer's Certificate: Products meet or exceed specified requirements.

1.03 Quality Assurance

- A. Fire-Resistant Joints in Fire-Rated Floor, Roof, and Wall Assemblies: UL 2079 to achieve fire resistant rating as indicated on Drawings for assembly in which joint is installed.
- B. Fire-Resistant Joints Between Floor Slabs and Exterior Walls: ASTM E119 with 0.10 inch wg minimum positive pressure differential to achieve fire resistant rating as indicated on Drawings for floor assembly.
- C. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested according to ASTM E84.
- D. Perform Work according to AWS D1.1 for welding hanger and support attachments to building structure.

- E. Passivate stainless steel welds per ASTM A967. Confirm absence of free iron in heat affected zone using ASTM A967, Copper Sulfate Test, Practice C.
- F. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.
- G. Installer: Company specializing in performing Work of this Section with three years' experience.

1.04 Field Measurements

- A. Verify field measurements prior to fabrication.

PART 2 - PRODUCTS

1.01 Pipe Hangars And Supports

A. Manufacturers:

1. Carpenter & Paterson, Inc.
2. ERICO International Corporation
3. Unitron Product, Inc. / US-Strut
4. Substitutions: Permitted.

B. Hydronic Piping:

1. Hangars shall be hot-dipped galvanized or stainless steel.
2. Conform to MSS SP69.
3. Hangars for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron or steel, adjustable swivel, split ring.
4. Hangars for Cold Pipe Sizes 2 inches and Larger: Steel, adjustable, clevis.
5. Hangars for Hot Pipe Sizes 2 to 4 inches: Steel, adjustable, clevis.
6. Hangars for Hot Pipe Sizes 6 inches and Larger: Adjustable steel yoke, cast iron roll, double hanger.
7. Multiple or Trapeze Hangars: Steel channels with welded spacers and hanger rods.
8. Multiple or Trapeze Hangars for Hot Pipe Sizes 6 inches and Larger: Steel channels with welded spacers and hanger rods, cast iron roll.
9. Wall Support for Pipe Sizes 3 inches and Smaller: Cast iron hooks.
10. Wall Support for Pipe Sizes 4 inches and Larger: Welded steel bracket and wrought steel clamp.
11. Wall Support for Hot Pipe Sizes 6 inches and Larger: Welded steel bracket and wrought steel clamp with adjustable steel yoke and cast iron roll.
12. Vertical Support: Steel riser clamp.
13. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

14. Floor Support for Hot Pipe Sizes 4 Inches and Smaller: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
15. Floor Support for Hot Pipe Sizes 6 inches and Larger: Adjustable cast iron roll and stand, steel screws, and concrete pier or steel support.
16. Copper Pipe Support: Vinyl coated, steel adjustable ring.

1.02 Accessories

- A. Hanger Rods: Stainless steel threaded both ends, threaded on one end, or continuous threaded.

1.03 Flashing

- A. Metal Flashing: 26 gage stainless steel.
- B. Metal Counterflashing: 22 gage stainless steel.
- C. Lead Flashing:
 1. Waterproofing: 5 lb./sq. ft sheet lead.
 2. Soundproofing: 1 lb./sq. ft sheet lead.
- D. Flexible Flashing: 47 mil thickness sheet butyl; compatible with roofing.
- E. Caps: Stainless steel, 22 gage minimum; 16 gage at fire-resistant elements.

1.04 Sleeves

- A. Sleeves for Pipes Through Non-fire Rated Floors: 18 gage galvanized steel.
- B. Sleeves for Pipes Through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Stainless steel pipe.
- C. Sleeves for Round Ductwork: Galvanized steel.
- D. Sleeves for Rectangular Ductwork: Galvanized steel.
- E. Sealant: Acrylic.

1.05 Mechanical Sleeve Seals

- A. Manufacturers:
 1. Link-Seal
 2. Substitutions: Permitted.
- B. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

1.06 Formed Steel Chain

- A. Product Description: Galvanized or stainless 12 gage thick steel. With holes 1-1/2 inches on center.

1.07 Firestopping

- A. Firestopping Materials: Acrylic based flexible firestop sealant, UL listed and FM approved.

1.08 Equipment Bases And Support

- A. All floor or floor stand-mounted equipment shall be set on concrete housekeeping pads. The height of the pads shall be as recommended by the equipment manufacturer, as required to connect to piping or as shown on drawings. The height shall be sufficient to accommodate required anchorage devices.
- B. The pads shall extend 3 inches beyond the machine base in all directions unless otherwise indicated on the drawings or by the equipment manufacturer. The top edges of the pads shall be chamfered.
- C. Concrete work shall be in accordance with Division 3.

PART 3 - EXECUTION**1.01 Preparation**

- A. Obtain permission from Architect/Engineer before using powder-actuated anchors.
- B. Do not drill or cut structural members.

1.02 Installation**A. Pipe Hangers and Supports:**

1. Install according to MSS SP 69.
2. Support horizontal piping as scheduled.
3. Install hangers with minimum 1/2 inch space between finished covering and adjacent Work.
4. Place hangers within 12 inches of each horizontal elbow.
5. Use hangers with 1-1/2 inch minimum vertical adjustment.
6. Support vertical piping at every floor.
7. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.
8. Support riser piping independently of connected horizontal piping.
9. Provide vinyl coated hangers and supports in contact with copper piping.
10. Design hangers for pipe movement without disengagement of supported pipe.
11. Provide clearance in hangers and from structure and other equipment for installation of insulation. Refer to Section 22 07 00.

B. Equipment Bases and Supports:

1. Using templates furnished with equipment, install anchor bolts, and accessories for mounting and anchoring equipment.

2. Construct supports of steel members or formed steel channel. Brace and fasten with flanges bolted to structure.
3. Provide rigid anchors for pipes after vibration isolation components are installed.

C. Flashing:

1. Provide flexible flashing and metal Counterflashing where piping and ductwork penetrate weather or waterproofed walls, floors, and roofs.
2. Provide acoustical lead flashing around ducts and pipes penetrating equipment rooms for sound control.
3. Provide curbs for roof installations 14 inches minimum high above roofing surface. Flash and counter-flash with stainless steel sheet metal; seal watertight. Attach Counterflashing to equipment and lap base flashing on roof curbs. Flatten and solder joints.
4. Adjust storm collars tight to pipe with bolts; caulk around top edge. Use storm collars above roof jacks. Screw vertical flange section to face of curb.

D. Sleeves:

1. Exterior watertight entries: Seal with mechanical sleeve seals.
2. Set sleeves in position in forms. Provide reinforcing around sleeves.
3. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
4. Extend sleeves through floors 1 inch above finished floor level. Caulk sleeves.
5. Where piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent Work with firestopping insulation and caulk airtight per firestopping manufacturer's instructions. Provide close fitting metal collar or escutcheon covers at both sides of penetration.
6. Install stainless steel escutcheons at finished surfaces.

1.03 Schedules

A. Copper and Steel Pipe Hanger Spacing:

PIPE SIZE INCHES	COPPER TUBING MAXIMUM HANGER SPACING FEET	STEEL PIPE MAXIMUM HANGER SPACING FEET	COPPER TUBING HANGER ROD DIAMETER INCHES	STEEL PIPE HANGER ROD DIAMETER INCHES
1/2	5	7	3/8	3/8
3/4	5	7	3/8	3/8
1	6	7	3/8	3/8
1-1/4	7	7	3/8	3/8

PIPE SIZE INCHES	COPPER TUBING MAXIMUM HANGER SPACING FEET	STEEL PIPE MAXIMUM HANGER SPACING FEET	COPPER TUBING HANGER ROD DIAMETER INCHES	STEEL PIPE HANGER ROD DIAMETER INCHES
1-1/2	8	9	3/8	3/8
2	8	10	3/8	3/8
2-1/2	9	11	1/2	1/2
3	10	12	1/2	1/2
4	12	14	1/2	5/8
5	13	16	1/2	5/8
6	14	17	5/8	3/4
8	16	19	3/4	3/4

B. Plastic and Ductile Iron Pipe Hanger Spacing:

PIPE MATERIAL	MAXIMUM HANGER SPACING FEET	HANGER ROD DIAMETER INCHES
ABS (All sizes)	4	3/8
PP-R (Note 1)		
PVC & CPVC(All Sizes)	4	3/8
Ductile Iron (Note 2)		

C. Note 1: Refer to manufacturer's recommendations.

D. Note 2: 20 feet maximum spacing, minimum of one hanger for each pipe section close to joint behind bell. Provide hanger at each change of direction and each branch connection. For pipe sizes 6 inches and smaller, subjected to loadings other than weight of pipe and contents, limit span to maximum spacing for water service steel pipe.

END OF HANGARS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

SECTION 23 05 93

TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Testing, adjusting, and balancing of air systems.
2. Testing, adjusting, and balancing of hydronic systems.

1.02 Submittals

A. Draft Reports: Submit for review prior to final acceptance of Project.

B. Test Reports: Submit prior to final acceptance of Project and for inclusion in operating and maintenance manuals. Assemble in soft cover, letter size, 3-ring binder, with table of contents page and tabs, and cover identification. Include reduced scale drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.

PART 2 - PRODUCTS

2.01 Not Used.

PART 3 - EXECUTION

3.01 Examination

A. Before starting work, verify systems are complete and operable.

B. Report defects, deficiencies, or abnormal conditions in mechanical systems preventing system balance.

C. Beginning of work means acceptance of existing conditions.

3.02 Installation Tolerances

A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.

B. Air Outlets and Inlets: Adjust to within plus or minus 10 percent of design.

C. Hydronic Systems: Adjust to within plus or minus 10 percent of design.

3.03 Air System Procedure

A. Adjust air handling and distribution systems to deliver design supply, return, and exhaust air quantities within previously stated tolerances.

B. Make air flow rate measurements in ducts by traverse of entire cross sectional area of duct.

- C. Measure air quantities at air inlets and outlets.
- D. Use volume control devices to regulate air quantities only to extent those adjustments do not create objectionable air motion or sound levels. Change volume using dampers mounted in ducts.
- E. Vary total system air quantities by adjustment of fan speeds. Provide drive changes to accomplish system air flow. Vary branch air quantities by damper regulation.
- F. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across fan. Allow for pressure drop equivalent to 50 percent loading of filters.
- G. Adjust automatic outside air, return air, and exhaust air dampers for design conditions.
- H. Measure temperature conditions across outside air, return air, and exhaust air dampers to check leakage.
- I. At modulating damper locations, take measurements and balance at extreme conditions.

3.04 Water System Procedure

- A. Adjust water systems after air balancing to deliver design quantities within previously stated tolerances.
- B. Use calibrated fittings or equipment and pressure gages to determine flow rates for system balance. Where not installed, base flow balance on temperature difference across heat transfer elements.
- C. Change system balance with automatic control valves fully open to heat transfer elements.
- D. Change adjustment of water distribution systems by means of balancing cocks, valves, and fittings.

3.05 Field Quality Control

- A. Verify recorded data represents actually measured or observed conditions.
- B. Permanently mark settings of valves, dampers, and other adjustment devices. Set and lock memory stops.

END OF TESTING, ADJUSTING, AND BALANCING FOR HVAC

SECTION 23 10 00 FUEL-OIL SYSTEM

PART 1 - GENERAL

1.01 Summary

- A. Section Includes:
 - 1. Fuel oil piping.
 - 2. Unions and flanges.
 - 3. Valves.
 - 4. Fuel trim accessories
 - 5. Pipe hangers and supports.
 - 6. Flexible connectors.
 - 7. Fuel oil storage tank.

1.02 Submittals

- A. Shop Drawings:
 - 1. Fuel Storage Tank: Indicate tank construction and dimensions, including tappings.
- B. Product Data:
 - 1. Piping: Data on pipe materials, fittings, and accessories. Submit manufacturers catalog information.
 - 2. Valves: Manufacturer's catalog information with valve data and ratings for each service.
 - 3. Hangers and Supports: Manufacturer's catalog information including load capacity.
 - 4. Fuel Piping Specialties: Manufacturer's catalog information including capacity, rough-in requirements, and service sizes.
 - 5. Fuel Oil Storage Tank Appurtenances: Manufacturer's catalog information
- C. Test Reports: Written test results for piping system pressure test.
- D. Welders Certificates: AWS certified within previous 12 months.

1.03 Quality Assurance

- A. Perform Work according to NFPA 30.
- B. List and label flexible connectors and hoses according to UL 536.
- C. Perform Work according to ASME B31.9 code for installation of piping systems and ASME Section IX for welding materials and procedures.

- D. Perform Work according to applicable code for welding hanger and support attachments to building structure.
- E. Perform Work according to State of Alaska standards.
- F. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.
- G. Installer: Company specializing in performing Work of this Section with three years' experience.

1.04 Field Measurements

- A. Verify field measurements prior to fabrication.

1.05 Spare Parts

- A. Provide touch-up primer and paint for fuel tank.
- B. Provide one extra filter for all fuel filter assemblies.

PART 2 - PRODUCTS

2.01 Fuel Oil Piping – Above Ground

- A. Steel Pipe: ASTM A53/A53M or ASME B36.10M Schedule 40 black.
 - 1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M wrought carbon steel and alloy steel welding type.
 - 2. Joints: Threaded for pipe 2 inch and smaller; welded for pipe 2-1/2 inches and larger.
- B. Copper Tube: ASTM B88, Type K annealed seamless copper tubing
 - 1. Fittings and joints: ASME B16.26 flared fittings

2.02 Unions And Flanges

- A. Unions for Pipe 2 inches and Smaller:
 - 1. Ferrous Piping: Class 150, malleable iron, threaded.
 - 2. Copper Tubing: ASME B16.22, wrought copper alloy body, solder joint and threaded ends.

2.03 Ball Valves

- A. Manufacturer: Anderson Brass, “Kantleak” or equal.
- B. MSS SP 110, Class 125, two piece, full port, threaded ends, bronze or brass body, chrome plated bronze ball, Viton or Buna-N double o-rings, lever handle, UL 842 listed for flammable liquids and LPG, full port.

2.04 Check Valves

- A. Horizontal Swing Check Valves:

1. MSS SP 80, Class 150, bronze body and cap, bronze seat, Buna-N disc, threaded ends.

2.05 Fuel Trim Accessories

A. Oil De-aerator

1. Basis of Design: Westwood Products Tigerloop Ultra, model S220-8 or approved equal.
2. De-aerator: UL listed oil de-aerator with glass bulb and 1/4 NPTF connections. Rated for maximum nozzle capacity of 20 GPH, inlet pressure of 8 PSI, operating temperature of 20 to 105 degrees F.
3. Filter: Spin on, 10 micron filter element, inside epoxy lined canister.

B. Fusible Valve

1. Manufacturer: Firomatic or approved equal.
2. UL 842 listed, brass, gate type, viton seals, with spring and replaceable fusible element, manually operable, flare connections.

C. Oil Safety Valve

1. Manufacturer: Webster or approved equal.
2. UL listed, 1/2 inch NPTF connections.

D. Oil Filter

1. Manufacturer: General Filter Model 2A-700 or approved equal.
2. UL listed, 12 psi working pressure, 25 GPH firing rate, 25 micron wool felt filtering media with 83 square inch filtering surface, and 3/4 inch threaded connections.

2.06 Pipe Hangars And Supports

- A. Conform to MSS SP 69 and MSS-SP 89.
- B. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Carbon steel, adjustable swivel, split ring.
- C. Hangers for Pipe Sizes 2 inches and Larger: Carbon steel, adjustable, clevis.
- D. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- E. Wall Support for Pipe 3 inches and Smaller: Cast iron hook.
- F. Vertical Support: Steel riser clamp.
- G. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

2.07 Flexible Connectors

- A. Interior 2 inches and Smaller: UL Listed, corrugated stainless steel inner hose with single layer of Type 304 stainless steel exterior braiding, with threaded ends.
 - 1. Boilers: 24 inches long
 - 2. All other connections: Min 16 inches long
- B. Exterior Applications, 2 inches and Smaller: UL536 Listed, 321 stainless steel annual closed pitch corrugated hose, 304 stainless steel braid, 300 stainless steel ferrule, beveled weld ends.
 - 1. Length: Minimum 18 inches.
 - 2. Offset: Minimum 1" with 60 degree angular deflection.
 - 3. Basis of Design, Flex-Hose model UFFWN-UL or approved equal.

2.08 Fuel Oil Storage Tank

- A. Product Description: Aboveground, double wall, steel storage tank. Manufactured according to UL 142 and labeled.
- B. Storage Tank: Welded steel, horizontal cylindrical, with steel support saddles on steel skids.
- C. Tank Exterior Finish: Salt-spray corrosion resistant system. Material thicknesses per manufacturer's Technical Data Sheet (TDS) recommendations.
 - 1. Manufacturer: Devoe
 - 2. Primer: Cathacoat 302H
 - 3. Epoxy mid-coat: Bar-Rust 236
 - 4. Polyurethane: Devthane 389
- D. Storage Tank: Fabricated with following:
 - 1. Threaded connections as shown on the drawings. Furnish thread protectors inserted in threaded openings prior to shipment.
- E. Accessories:
 - 1. OSHA approved external ladder, galvanized steel or aluminum, rated for 300 pounds.
 - 2. Lifting Lugs: For handling and installation.
 - 3. Tank Decals: Furnish warning and tank identification signs located prominently on tank following local fire code requirements.
 - 4. Fill container: 7-1/2 gallon overfill containment chamber with hinged cover, stainless steel hinges, handle, safety chain, and lock hasp. Provide 2" male threads for installation of overfill prevention valve below tank. Morrison Bros. 518M-0200 AC or equal.

5. Overfill Valve: 2 inch, float type overfill prevention valve, stainless steel cam and dust plug/cap. Minimum 5 psi flow requirement. Morrison Bros. Model 9095AA or equal.
 - a. Provide drop fill tube.
6. Aluminum T-type screened vent caps for normal vents for primary tank and secondary containment. Morrison Bros. model 155 or equal.
 - a. Provide aluminum risers.
7. Emergency Vents: Furnish for each compartment emergency vent sized in accordance with NFPA 30 and UL 142. Height to exceed top of fill container. OPW 301 Series or equal.
8. Level Gauge: Mechanical float activated level gauge capable of indicating approximate fluid level in the tank, read in feet and inches. OPW model 200TG or approved equal.
9. Anti-siphon valve for supply line to daytank, OPW 199ASV or equal, 5 feet to 10 feet of head hydrostatic head pressure.
10. Leak Gauge: HDPE plastic housing assembly with aluminum bushing. Aluminum internal rods and HDPE float. Krueger Sentry Gauge, Type K or equal.
 - a. Provide gauge guard.
11. Suction tube with foot valve.
12. Fuel return and fill drop tube to within 6 inches of bottom of tank.
 - a. Return pipe to have holes drilled within 6 inches of the top of the tank.

PART 3 - EXECUTION

3.01 Preparation

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Prepare piping connections to equipment with flanges or unions.
- C. Fuel storage tank finishes are to be applied at the tank manufacturing facility under environmental conditions approved by the finish manufacturer's recommendations.

3.02 Installation

- A. Pipe Hangers and Supports:
 1. Install hangers and supports according to ASME B31.9, and MSS SP 89.
 2. Support horizontal piping hangers maximum 6 feet.
 3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent Work.

4. Place hangers within 12 inches of each horizontal elbow.
5. Install hangers to allow 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
6. Where installing several pipes in parallel and at same elevation, provide multiple pipe hangers or trapeze hangers.
7. Finish paint exposed steel hangers and supports according to Section 099000.
8. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

B. Aboveground Piping:

1. Install fuel oil piping according to NFPA 31.
2. Provide non-conducting dielectric connections wherever jointing dissimilar metals. Install according to NACE RP-01-69.
3. Route piping in orderly manner and maintain gradient.
4. Install piping to conserve building space and not interfere with use of space.
5. Group piping whenever practical at common elevations.
6. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
7. Sleeve pipe passing through partitions, walls and floors.
8. Prepare pipe, fittings, supports, and accessories not pre-finished, ready for finish painting. Refer to Section 099000.
9. Finish paint interior and exterior fuel oil pipe, fittings, supports, and accessories in bright yellow. Refer to Section 099000.
10. Install valves with stems upright or horizontal, not inverted.
11. Protect piping systems from entry of foreign materials by temporary covers, completing Sections of Work, and isolating parts of completed system.

C. Fuel Oil Storage Tank Installation

1. Install tank on level surface.
2. Install tank per NFPA 30, NFPA 31, and STI R912 requirements.
3. Install normal vent caps at 12 feet above grade.
4. Resurface any blemishes and scrapes by applying primer, mid-coat, and polyurethane coatings to maximize corrosion resistance.

3.03 Field Quality Control

- A. Pressure-test fuel oil piping according to NFPA 31.

END OF FUEL OIL SYSTEM

SECTION 23 20 00 HVAC PIPING AND PUMPS

PART 1 - GENERAL

1.01 Summary

- A. Section Includes:
1. Pipe and pipe fittings.
 2. Pipe hangers and supports.
 3. Valves.
 4. Piping specialties.
 5. HVAC piping specialties.
 6. HVAC pumps.
 7. Glycol makeup system
 8. Glycol solution.

1.02 Submittals

- A. Product Data:
1. Pipe Hangers and Supports: Submit manufacturers catalog data including load carrying capacity.
 2. Valves: Submit Manufacturers catalog information with valve data and ratings for each service.
 3. Piping Specialties: Submit product description, model, dimensions, component sizes, rough-in requirements, service sizes, and finishes. Submit schedule indicating manufacturer, model number, size, location, rated capacity, load served, and features for each specialty.
 4. Pipe Expansion Products: Indicate maximum temperature and pressure rating, and maximum expansion compensation.
 5. Pumps: Submit pump type, capacity, certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements. Include manufacturer's catalogue information.
- B. Shop Drawings: Reference Section 230500, Common Work Results for Mechanical.
1. Provide shop drawings of floor and wall based pipe support systems including weight ratings for each connection point. Reference 220548, Vibration and Seismic Controls.

- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.03 Quality Assurance

- A. Perform Work in accordance with of State of Alaska standards.

1.04 Maintenance Service

- A. Furnish the following spare parts:
 - 1. One extra set of mechanical seals for pumps.

PART 2 - PRODUCTS

2.01 Pipes and Tubes

- A. Heating Water Piping:
 - 1. Copper Tubing: ASTM B88, Type L drawn, cast brass, wrought copper, or mechanically extracted fittings, lead free solder joints.
- B. Equipment Drains and Overflows:
 - 1. Steel Pipe: ASTM A53/A53M, Grade B, Schedule 40 black steel, malleable iron or forged steel fittings, threaded or welded joints.
 - 2. Copper Tubing: ASTM B88, Type L, drawn, cast brass, wrought copper fittings, lead free solder joints.
 - 3. PVC Pipe: ASTM D1785, Schedule 40, or ASTM D2241, SDR 21 or 26, PVC fittings, solvent weld joints.

2.02 Pipe Hangars And Supports

- A. Conform to MSS SP 69.
- B. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Carbon steel, adjustable swivel, split ring.
- C. Hangers for Cold Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- D. Hangers for Hot Pipe Sizes 2 to 4 inches: Carbon steel, adjustable, clevis.
- E. Multiple or Trapeze Hangers for Pipe Sizes to 4 inches: Steel channels with welded spacers and hanger rods.
- F. Wall Support for Pipe Sizes to 3 inches: Cast iron hooks.
- G. Floor Support for Hot Pipe Sizes to 4 Inches: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- H. Copper Pipe Support: Copper-plated, carbon steel ring.

2.03 Valves

- A. Ball Valves:

1. Bronze or stainless steel one piece body, chrome plated brass ball, Teflon seats and stuffing box ring, lever handle, solder or threaded ends.
- B. Butterfly Valves:
 1. Bronze body, stainless steel disc, resilient replaceable seat, threaded ends, extended neck, lever handle.
- C. Swing Check Valves:
 1. Bronze body and swing disc, solder or threaded ends.
- D. Relief Valves:
 1. Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated capacities ASME certified and labeled.

2.04 Piping Specialties

- A. Flanges, Unions, and Couplings:
 1. Malleable iron unions for threaded ferrous piping; bronze unions for copper pipe, soldered joints.
 2. Dielectric Connections: Provide dielectric nipples or flanges. Dielectric unions are not allowed.
- B. Strainers:
 1. All strainers to be able to receive blow-down ball valve connections.
 2. Threaded brass or iron body for 175 psig working pressure, Y pattern with 1/32 inch stainless steel perforated screen.
- C. Flexible Connectors:
 1. Corrugated stainless steel hose with single layer of stainless steel exterior braiding, minimum 9 inches long with copper tube ends; for maximum working pressure 300 psig.
- D. Air Vents:
 1. Manual Type: Short vertical sections of 2 inch diameter pipe to form air chamber, with 1/8 inch brass needle valve at top of chamber.
 2. Float Type: Brass or semi-steel body, copper, polypropylene, or solid non-metallic float, stainless steel valve and valve seat; suitable for system operating temperature and pressure; with isolating valve.
- E. Pressure Gages:
 1. Gage: ASME B40.1, UL 393 with bourdon tube, rotary brass movement, brass socket, front calibration adjustment, black scale on white background.
 - a. Case: Steel.
 - b. Bourdon Tube: Phosphor bronze.

- c. Dial Size: 3-1/2 inch diameter.
- d. Mid-Scale Accuracy: One percent.
- e. Scale: Psi.
- f. Range: Selected for mid-range at normal operating conditions for the application.

F. Thermometers:

- 1. Adjustable angle, digital display, light powered, ABS case with enamel finish, cast aluminum adjustable joint with positive locking device.
 - a. Size: 7-inch case
 - b. Power source: Photovoltaic cells requiring 10 lux of illumination for operation.
 - c. Display: 9/16 inch LCD, 4 digits, 1/10 degree resolution. switchable between F and C, updated every 10 seconds.
 - d. Stem: Aluminum, 3/4 inch NPT, 3-1/2 inch long, with glass passivated thermistor.
 - e. Range: Minus 40 to 300 degrees F (minus 40 to 150 degrees C)
 - f. Accuracy: 1 percent or 1 degree F, whichever is greater

2.05 HVAC Piping Specialties

A. Diaphragm-Type Expansion Tanks

- 1. Manufacturers:
 - a. Amtrol.
 - b. Taco.
 - c. Substitutions: Permitted.
- 2. Construction: Welded steel, rated for working pressure of 100 psig, with flexible butyl/EPDM diaphragm sealed into tank and steel support stand.
- 3. Accessories: Pressure gage and air-charging fitting, tank drain; pre-charge to 12 psig.

B. Air Separators:

- 1. Manufacturers:
 - a. Spirotherm.
 - b. Substitutions: Permitted.
- 2. In-line Air Separators: Welded Steel; designed and constructed for 150 psig working pressure.
 - a. Woven copper wire and copper tube internal element to remove entrained air and to coalesce and remove microbubbles.

2.06 HVAC Pumps

- A. Manufacturers:
 - 1. Grundfos.
 - 2. Taco.
 - 3. Substitutions: Permitted.
- B. System Lubricated Circulators
 - 1. Type: Horizontal shaft, single stage, direct connected with multiple speed wet rotor motor for in-line mounting, for 140 psig maximum working pressure, 230 degrees F maximum water temperature.
 - 2. Construction: Cast iron casing flanged pump connections, stainless steel impeller, shaft, and rotor, impedance protected motor.
- C. Variable Speed Wet Rotor Circulators
 - 1. Type: In-line wet rotor design. The pump, motor, and variable speed drive shall be an integral product.
 - 2. The pump shall be labeled on the nameplate as having an Energy Efficiency Index (EEI) of no greater than 0.20.
 - 3. Construction: Cast iron housing, stainless steel impellers and shaft, carbon graphite thrust bearing, EPDM O-rings.,
 - 4. Motor: 4-pole permanent-magnet motor, cooled by the fluid, self-ventilating, Minimum Class F insulation.
 - 5. Operating Modes:
 - a. Back-Up Operation: Two pumps, operated in a primary/back-up configuration shall communicate wirelessly to one another. One pump shall operate at a time with the other pump turning on automatically if the primary pump fails.
 - 6. Controls: Operator interface, integral sensor, one analog input, three digital inputs, two outlet relays.
 - 7. Add-On Modules:
 - a. Modbus

2.07 Glycol Makeup System

- A. Packaged glycol makeup system: Polyethylene solution container sized as noted on the drawings, complete with lid, glycol charging pump, strainer and shut-off valve. Removable lid shall have a hole to accommodate system safety relief valve discharge pipe in such a way that lid remains removable for filling and mixing without modifying the piping.
- B. Pumping Assembly: The pressurization assembly shall consist of a pressurization pump with pressure controls, a pre-pressurized storage tank, a PRV, and pressure

gauge to continuously monitor PRV outlet pressure. Pump shall be set to maintain glycol system pressure of 12 psig, adjustable between 8 psig and 25 psig.

2.08 Glycol Solution

- A. Manufacturers:
 - 1. Dow Chemical Co.
 - 2. Substitutions: Permitted.
- B. Inhibited propylene glycol and water solution mixed 50 percent glycol / 50 percent water, suitable for operating temperatures from minus 40 degrees F to 250 degrees F.

PART 3 - EXECUTION

3.01 Examination

- A. Verify excavations are to required grade, dry, and not over-excavate.

3.02 Preparation

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside piping before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.03 Installation – Piping System

- A. Install heating water piping in accordance with ASME B31.9.
- B. Install dielectric connections wherever jointing dissimilar metals.
- C. Install unions downstream of valves and at equipment or apparatus connections.
- D. Route piping parallel to building structure and maintain gradient.
- E. Install piping to maintain headroom. Group piping to conserve space. Group piping whenever practical at common elevations.
- F. Slope piping and arrange systems to drain at low points.
- G. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- H. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- I. Sleeve pipe passing through partitions, walls and floors.
- J. Install piping system allowing clearance for installation of insulation and access to valves and fittings.
- K. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

3.04 Installation – Module Construction

- A. Provide removable pipe sections at module seams with unions or flanges.
 - 1. Pipe sections to be installed during initial testing.
 - 2. Pipe sections are then to be removed, drained, sealed, and packaged for shipment. Label the pipe sections to identify exact location for field reinstallation.
 - 3. Piping is then to be reinstalled after field assembly of the modules.
 - 4. Final installation is then to be tested, sterilized, and final insulation and pipe identifications added as needed.

3.05 Installation – Pipes And Supports

- A. Support horizontal piping as scheduled.
- B. Install hangers with minimum 1/2 inch space between finished covering and adjacent work.
- C. Place hangers within 12 inches of each horizontal elbow.
- D. Use hangers with 1-1/2 inch minimum vertical adjustment.
- E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
- F. Support vertical piping at every other floor. Support vertical cast iron pipe at each floor at hub.
- G. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.
- H. Support riser piping independently of connected horizontal piping.
- I. Provide copper plated hangers and supports for copper piping.
- J. Design hangers for pipe movement without disengagement of supported pipe.

3.06 Installation - Valves

- A. Install valves with stems upright or horizontal, not inverted.
- B. Install gate, ball or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- C. Install globe, ball or butterfly valves for throttling, bypass, or manual flow control services.
- D. Provide lug end butterfly valves adjacent to equipment when functioning to isolate equipment.
- E. Install 3/4 inch ball drain valves with hose thread adapter and cap at low points of piping, and at equipment.

3.07 Installation – Piping Specialties

- A. Install one pressure gage for each pump, locate taps before strainers and on suction and discharge of pump; pipe to gage.
- B. Install pressure gages with pulsation dampers. Provide needle valve or ball valve to isolate each gage. Extend nipples to allow clearance from insulation.
- C. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inches for installation of thermometer sockets. Allow clearance from insulation.
- D. Install gages and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.
- E. Adjust gages and thermometers to final angle, clean windows and lenses, and calibrate to zero.
- F. Install manual air vents at system high points.
- G. Provide drain and hose connection with valve on strainer blow down connection.
- H. Select system relief valve capacity greater than make-up pressure reducing valve capacity. Select equipment relief valve capacity to exceed rating of connected equipment. Install piping from relief valve outlet to nearest floor drain.
- I. Pipe relief valve outlet to nearest floor drain, or to glycol fill system as shown.
- J. Support piping adjacent to pump so no weight is carried on pump casings. For close coupled or base mounted pumps, install supports under elbows on pump suction and discharge line sizes 4 inches and over.
- K. Support tanks inside building from building structure.

3.08 Field Quality Control

- A. Pressure test piping in accordance with the International Mechanical Code.
 - 1. Piping to be tested at 50% above operating pressure or 50 psi at a minimum.
 - 2. Do not install pressure gauges until after the test.
 - 3. Isolate sensitive equipment, such as the boilers, when completing the test.

3.09 Cleaning – Heating Piping

- A. Prior to starting work, verify system is complete, flushed and clean.
- B. Add to the hydronic system one pound of Trisodium Phosphate for each sixty gallons of system capacity.
- C. Boil out system for four hours at a minimum temperature of 195 degrees F.
- D. After boil out, completely drain and flush system including low points.
- E. Clean strainers and remove construction strainers.

- F. Fill system with glycol where indicated.
- G. Test for strength of glycol and water solution and submit written test results.

3.010 Schedules

- A. Adjust hanger spacing based on module roof loading.
- B. Copper and Steel Pipe Hanger Spacing:

PIPE SIZE Inches	COPPER TUBING MAXIMUM HANGER SPACING Feet	STEEL PIPE MAXIMUM HANGER SPACING Feet	COPPER TUBING HANGER ROD DIAMETER Inches	STEEL PIPE HANGER ROD DIAMETER Inches
1/2	5	7	3/8	3/8
3/4	5	7	3/8	3/8
1	6	7	1/2	1/2
1-1/4	7	7	1/2	1/2
1-1/2	8	9	1/2	1/2
2	8	10	1/2	1/2

END OF HVAC PIPING AND PUMPS

SECTION 23 31 00 HVAC DUCTS AND CASINGS

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Duct Materials.
2. Ductwork fabrication.
3. Ductwork accessories.

1.02 Performance Requirements

- A. Variation of duct configuration or sizes other than those of equivalent or lower loss coefficient is not permitted except by written permission.

1.03 Submittals

- A. Shop Drawings: Duct fabrication drawings, drawn to scale not smaller than 1/4 inch equals 1 foot, on drawing sheets same size as Contract Documents, indicating:

1. Fabrication, assembly, and installation details, including plans, elevations, sections, details of components, and attachments to other Work.
2. Duct layout, indicating pressure classifications and sizes in plan view. For exhaust duct systems, indicate classification of materials handled as defined in this Section.
3. Fittings.
4. Reinforcing details and spacing.
5. Seam and joint construction details.
6. Hangers and supports, including methods for building attachment, vibration isolation, and duct attachment.

- B. Product Data: Duct materials.

1.04 Closeout Submittals

- A. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

1.05 Quality Assurance

- A. Perform Work according to SMACNA - HVAC Duct Construction Standards - Metal and flexible.
- B. Construct ductwork to NFPA 90A and NFPA 90B standards.
- C. Passivate stainless steel welds per ASTM A967. Confirm absence of free iron in heat affected zone using ASTM A967, Copper Sulfate Test, Practice C.

1.06 Environmental Requirements

- A. Do not install duct sealant when temperatures are less than those recommended by sealant manufacturers.
- B. Maintain temperatures during and after installation of duct sealant.

1.07 Field Measurements

- A. Verify field measurements prior to fabrication.

PART 2 - PRODUCTS

2.01 Duct Materials

- A. Galvanized Steel Ducts: ASTM A653/A653M galvanized steel sheet, lock-forming quality, having G90 zinc coating in conformance with ASTM A90/A90M.
- B. Stainless Steel Ducts: ASTM A240, Type 304 or ASTM A666, Type 304L where fabrication is by welding.
- C. Fasteners: Stainless steel bolts, or stainless steel sheet metal screws.
- D. Hanger Rod: ASTM F593; stainless steel, threaded both ends, threaded one end, or continuously threaded. Zinc plated hardware will not be accepted.

2.02 Ductwork Fabrication

A. General:

- 1. Fabricate and support rectangular ducts according to SMACNA HVAC Duct Construction Standards - Metal and Flexible. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- 2. Construct T's, bends, and elbows with minimum radius 1-1/2 times centerline duct width. Where not possible and where rectangular elbows are used, provide turning vanes. Where acoustical lining is indicated, furnish turning vanes of perforated metal with glass fiber insulation.
- 3. Seal joints between duct sections and duct seams with welds, gaskets, mastic adhesives, mastic plus embedded fabric systems, or tape.
 - a. Sealants, Mastics and Tapes: Conform to UL 181A. Provide products bearing appropriate UL 181A markings.
 - b. Do not provide sealing products not bearing UL approval markings.

2.03 Flexible Duct Connections

- A. Fabricate according to SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. Connector: Fabric crimped into metal edging strip.
 - 1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric conforming to NFPA 90A, minimum density 30 oz per sq yd.
 - 2. Net Fabric Width: Approximately 4 inches wide.

3. Metal: 3 inch wide, 24 gage galvanized steel.

2.04 Balancing Dampers

- A. Fabricate according to SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. Single Blade Dampers: Fabricate for duct sizes up to 6 x 30 inch.
 1. Material: Same gage as duct to 24 inches size in both dimensions, and two gages heavier for sizes over 24 inches.
 2. End Bearings: Except in round ductwork 12 inches and smaller, furnish end bearings.
 3. Quadrants:
 - a. Furnish locking, indicating quadrant regulators.
 - b. On insulated ducts mount quadrant regulators on standoff mounting brackets, bases, or adapters.

PART 3 - EXECUTION

3.01 Examination

- A. Verify sizes of equipment connections before fabricating transitions.

3.02 Installation

- A. Install and seal ducts according to SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. During construction, install temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- C. Install duct hangers and supports as required.
- D. Use double nuts and lock washers on threaded rod supports.
- E. Exhaust Outlet Locations:
 1. Minimum Distance from Building Openings: 3 feet.
 2. Minimum Distance from Outside Air Intakes: 10 feet.

END OF HVAC DUCTS AND CASINGS

SECTION 23 33 00 AIR DUCT ACCESSORIES

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Back-draft dampers.
2. Combination fire-and-smoke dampers.
3. Duct access doors.
4. Dynamic fire dampers.
5. Static fire dampers.
6. Ceiling fire dampers.
7. Smoke dampers.
8. Volume control dampers.
9. Flexible duct connections.
10. Duct test holes.
11. Dial thermometers.
12. Static pressure gages.

1.02 Submittals

A. Product Data:

1. Shop-fabricated assemblies and hardware used.
2. Electrical characteristics and connection requirements.
3. Fire dampers including locations and ratings.
4. Smoke dampers including locations and ratings.
5. Backdraft dampers.
6. Flexible duct connections.
7. Volume control dampers.
8. Duct access doors.
9. Duct test holes.
10. Product Data: For fire dampers:
 - a. Include UL ratings, dynamic ratings, leakage, pressure drop, and maximum pressure data.
 - b. Indicate materials, construction, dimensions, and installation details.

- c. Damper pressure drop ratings based on tests and procedures performed according to AMCA 500.
- B. Manufacturer's Installation Instructions: Fire and combination smoke and fire dampers.
- C. Manufacturer's Certificate: Products meet or exceed specified requirements.
- 1.03 Quality Assurance
 - A. Test, rate, and label dampers according to latest UL requirements.
 - B. Damper pressure drop ratings based on tests and procedures performed according to AMCA 500.
 - C. Perform Work according to SMACNA standards.
 - D. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.
- 1.04 Field Measurements
 - A. Verify field measurements prior to fabrication.
- 1.05 Coordination
 - A. Coordinate Work with building control Work.
- 1.06 Warranty
 - A. Furnish five-year manufacturer warranty for duct accessories.
- 1.07 Extra Materials
 - A. Furnish two of each size and type of fusible link.

PART 2 - PRODUCTS

- 2.01 Dampers
 - A. Back-Draft Dampers:
 - 1. Product Description: Multi-Blade, back-draft dampers: Parallel-action, gravity-balanced, Galvanized 16 gage thick steel, or extruded aluminum. Blades, maximum 6 inch width, with felt or flexible vinyl sealed edges. Blades linked together in rattle-free manner with 90-degree stop, steel ball bearings, and plated steel pivot pin. Furnish dampers with adjustment device to permit setting for varying differential static pressure.
 - B. Dynamic Fire Dampers:
 - 1. Fabricate according to NFPA 90A and UL 555.
 - 2. Fire Resistance: 1-1/2 hours

3. Dynamic Closure Rating: Dampers classified for dynamic closure to 2,000 fpm and 4 inches w.g. static pressure.
 4. Construction:
 - a. Integral Sleeve Frame: Minimum 20 gage roll formed galvanized steel.
 - b. Action: Spring or gravity closure upon fusible link release.
 - c. Material: Minimum 24 gage roll formed, galvanized steel.
 - d. Closure Springs: Type 301 stainless steel, constant force type, if required.
 5. Fusible Link Release Temperature: 212 degrees F
 6. Mounting: Vertical or horizontal
 7. Duct Transition Connection, Damper Style:
 - a. A style - rectangular connection, frame and blades in air stream.
 - b. B style - rectangular connection, blades out of air stream, high free area.
 - c. G style - A style connection, grille mounting tabs at end of sleeve for grille.
 - d. CR style - round connection, sealed.
 - e. CO style - oval connection, sealed.
 - f. R style - round connection, blades in air stream, non-sealed.
 - g. LR style - round connection, blades out of air stream, non-sealed.
 - h. LO style - oval connection, non-sealed.
 8. Finish: Mill galvanized.
- C. Static Fire Dampers:
1. Fire Rating: UL 555 classified and labeled as a 1-1/2 hour static fire damper.
 2. Air Flow Rating: UL approved for dual directional air flow.
 3. Integral Sleeve Frame: Minimum 20 gage by 12 inches roll formed, galvanized steel.
 - a. Factory Sealant: Apply to dampers in HVAC systems with pressures to maximum 4 inches w.g.
 4. Blades:
 - a. Style: Curtain type, in airstream.
 - b. Action: Spring or gravity closure upon fusible link release.
 - c. Orientation: Horizontal.
 - d. Material: Minimum 24 gage roll formed, galvanized steel.

5. Closure Springs: Type 301 stainless steel, constant force type, if required.
 6. Temperature Release Device:
 - a. Fusible link 212 degrees F.
 - b. Mounting: Horizontal.
 7. Duct Transition Connection, Damper Style:
 - a. A style - rectangular connection, frame and blades in air stream.
 - b. B style - rectangular connection, blades out of air stream, high free area.
 - c. G style - A style connection, grille mounting tabs at end of sleeve for grille.
 - d. R style - round connection, blades in air stream, non-sealed.
 - e. RA style - round connection, frame and blades in air stream.
 - f. LR style - round connection, blades out of air stream, non-sealed.
 - g. LO style - oval connection, non-sealed.
 8. Finish: Mill galvanized.
 9. Picture Frame Mounting Angles:
 - a. One-piece, roll formed retaining angles.
 - b. Factory matched and shipped attached to damper.
- D. Ceiling Fire Dampers:
1. Fire Rating: UL 555C classified and labeled as a 1-1/2 hour ceiling damper.
 2. Air Flow Rating: UL approved for dual directional air flow.
 3. Frame: minimum 3 inches by minimum 20 gage galvanized steel with roll formed ridge for blade stop.
 4. Blades:
 - a. Style: Two piece, single thickness with blade insulation, hinged in center, and held open with fusible link.
 - b. Action: Butterfly.
 - c. Orientation: Horizontal.
 - d. Material: Minimum 20 gage galvanized steel.
 5. Hinge: Spring stainless steel, mechanically attached to blades.
 6. Mounting: Horizontal.
 7. Temperature Release Device: Fusible link, 212 degrees F.
 8. Finish: Mill galvanized.
 9. Performance Data:

- a. Pressure Drop: Maximum 0.1 inches w.g. at 500 fpm across 18 x 18 inch damper.

10. Fusible Volume Adjust: UL classified.

11. Extended Frame:

- a. Rectangular Dampers: 6 inches
- b. Round Dampers: 6-1/2 inches

E. Volume Control Dampers:

1. Fabricate according to SMACNA HVAC Duct Construction Standards - Metal and Flexible[, and as indicated].
2. Splitter Dampers:
 - a. Material: Same gage as duct to 24 inches size in both dimensions, and two gages heavier for sizes over 24 inches.
 - b. Blade: Fabricate of single thickness sheet metal to streamline shape, secured with continuous hinge or rod.
 - c. Operator: Minimum 1/4 inch diameter rod in self aligning, universal joint action, flanged bushing with set screw.
 - d. Single Blade Dampers: Fabricate for duct sizes up to 6 x 30 inch.
3. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 x 72 inch. Assemble center and edge crimped blades in prime coated or galvanized frame channel with suitable hardware.
4. End Bearings: Except in round ductwork 12 inches and smaller, furnish end bearings. On multiple blade dampers, furnish oil-impregnated nylon or sintered bronze bearings. Furnish closed end bearings on ducts having pressure classification over 2 inches w.g.
5. Quadrants:
 - a. Furnish locking, indicating quadrant regulators on single and multi-blade dampers.
 - b. On insulated ducts mount quadrant regulators on standoff mounting brackets, bases, or adapters.
 - c. Where rod lengths exceed 30 inches furnish regulator at both ends.

2.02 Duct Access Doors

- A. Fabricate according to SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. Fabrication: Rigid and close fitting of galvanized steel with sealing gaskets and quick fastening locking devices. For insulated ductwork, furnish minimum 1 inch thick insulation with sheet metal cover.
 1. Less than 12 inches square, secure with sash locks.

2. Up to 18 inches Square: Furnish two hinges and two sash locks.
3. Larger Sizes: Furnish additional hinge.
4. Access panels with sheet metal screw fasteners are not acceptable.

2.03 Flexible Duct Connections

- A. Fabricate according to SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. Connector: Fabric crimped into metal edging strip.
 1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric conforming to NFPA 90A, minimum density 30 oz per sq yd.
 2. Net Fabric Width: Approximately 2.
 3. Metal: 3 inch, 24 gage galvanized steel.
- C. Lead Vinyl Sheet: Minimum 0.55 inch thick, 0.87 lb per sq ft , 10 dB attenuation in 10 to 10,000 Hz range.

2.04 Duct Test Holes

- A. Permanent Test Holes: Factory fabricated, air tight flanged fittings with screw cap. Furnish extended neck fittings to clear insulation.

2.05 Dial Thermometers

- A. Thermometer: ASTM E1, stainless steel case, bimetallic helix actuated with silicone fluid damping, white with black markings and black pointer hermetically sealed lens, stainless steel stem.
 1. Size: 2 inch diameter dial.
 2. Lens: Clear Lexan.
 3. Accuracy: 1 percent.
 4. Calibration: Degrees F.

2.06 STATIC PRESSURE GAGES

- A. Dial Gages: 3-1/2 inch diameter dial in metal case, diaphragm actuated, black figures on white background, front calibration adjustment, 2 percent of full scale accuracy.
- B. Inclined Manometer: Plastic with red liquid on white background with black figures, front calibration adjustment, 3 percent of full scale accuracy.
- C. Accessories: Static pressure tips with compression fittings for bulkhead mounting, 1/4 inch diameter tubing.

PART 3 - EXECUTION**3.01 Installation**

- A. Install according to NFPA 90A, and follow SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- B. Install back-draft dampers on exhaust fans or exhaust ducts nearest to outside.
- C. Access Doors: Install access doors at following locations:
 - 1. Spaced every 50 feet of straight duct.
 - 2. Before and after each duct mounted filter.
 - 3. Before and after each duct mounted coil.
 - 4. Before and after each duct mounted fan.
 - 5. Before and after each fire damper
- D. Access Door Sizes: Install minimum 8 x 8 inch (200 x 200 mm) size for hand access, 18 x 18 inch (450 x 450 mm) size for shoulder access. Review locations prior to fabrication.
 - 1. Mark access doors for fire and smoke dampers on outside surface, with minimum 1/2 inch high letters reading: FIRE/SMOKE DAMPER, SMOKE DAMPER, OR FIRE DAMPER.
- E. Install permanent duct test holes as required for testing and balancing purposes.
- F. Install fire dampers at locations as indicated. Install with required perimeter mounting angles, sleeves, breakaway duct connections, corrosion resistant springs, bearings, bushings and hinges.
 - 1. Install smoke dampers and combination smoke and fire dampers according to NFPA 92A.
 - 2. Install dampers square and free from racking with blades running horizontally.
 - 3. Do not compress or stretch damper frame into duct or opening.
 - 4. Handle damper using sleeve or frame. Do not lift damper using blades, actuator, or jack shaft.
 - 5. Install bracing for multiple section assemblies to support assembly weight and to hold against system pressure. Install bracing as needed.
- G. Thermometers:
 - 1. Install thermometers in air duct systems on flanges.
 - 2. Where thermometers are provided on local panels, duct mounted thermometers are not required.
 - 3. Locate duct-mounted thermometers minimum 10 feet downstream of mixing-dampers, coils, or other devices causing air turbulence.

4. Install static pressure gages to measure across filters and filter banks, (inlet to outlet). On multiple banks, provide manifold and single gage.
5. Provide instruments with scale ranges selected according to service with largest appropriate scale.
6. Install thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.
7. Adjust thermometers to final angle, clean windows and lenses, and calibrate to zero.

3.02 Demonstration

- A. Demonstrate re-setting of fire dampers to Owner's representative.

3.03 Schedules

A. Dial Thermometer Location:

1. Each supply air zone.
2. Outside air.
3. Return air.
4. Mixed air.

B. Static Pressure and Filter Gages:

1. Built up filter banks.
 - a. Location:
 - b. Scale range:
2. Unitary filter sections.
 - a. Location:
 - b. Scale range:
3. Supply fan discharge.
 - a. Location:
 - b. Scale range:
4. Building static.
 - a. Location:
 - b. Scale range:

END OF AIR DUCT ACCESSORIES

SECTION 23 37 00

AIR OUTLETS AND INLETS

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Diffusers.
2. Registers
3. Grilles.
4. Door grilles.
5. Louvers.
6. Louvered penthouses.
7. Roof hoods.
8. Goosenecks.

1.02 Submittals

- A. Product Data: Sizes, finish, and type of mounting. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.
- B. Test Reports: Rating of air outlet and inlet performance.
- C. Manufacturer's Certificate: Products meet or exceed specified requirements.

1.03 Closeout Submittals

- A. Project Record Documents: Record actual locations of air outlets and inlets.

1.04 Quality Assurance

- A. Test and rate diffuser, register, and grille performance according to ASHRAE 70.
- B. Test and rate louver performance according to AMCA 500.
- C. Perform Work according to SMACNA standards.
- D. Manufacturer: Company specializing in manufacturing products specified in this Section with three years' experience.

1.05 Warranty

- A. Furnish five-year manufacturer's warranty for air outlets and inlets.

PART 2 - PRODUCTS**2.01 Rectangular Ceiling Diffusers**

- A. Type: Square and rectangular, multi-louvered diffuser to discharge air in three-way and four-way pattern.
- B. Frame: Surface mount.
- C. Fabrication: Steel or Aluminum with baked enamel finish.
- D. Accessories: Radial opposed-blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

2.02 Modified Light Troffer Diffusers

- A. Type: Single plenum constructed independent of light troffer with volume and pattern controllers, round or oval top or side. Match diffusers to light troffer for airtight connection without tools.
- B. Fabrication: Galvanized steel with welded or soldered joints and finish matte black inside.

2.03 Ceiling Linear Exhaust And Return Registers/Grilles

- A. Type: Streamlined blades with 90 degree two-way deflection, 1/8 x 3/4 inch on 1/2 inch o.c.
- B. Frame: 1 inch margin with concealed mounting.
- C. Fabrication: Steel with 20 gage minimum frames and 22 gage minimum blades, steel and aluminum with 20 gage minimum frame, or aluminum extrusions, with factory baked enamel finish.
- D. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

2.04 Wall Exhaust And Return Registers/Grilles

- A. Type: Streamlined blades, 3/4 inch minimum depth, 3/4 inch maximum spacing, with spring or other device to set blades, horizontal face.
- B. Frame: 1 inch margin with concealed mounting.
- C. Fabrication: Steel and aluminum with 20 gage (0.90 mm) minimum frame, with factory baked enamel finish.
- D. Damper: Integral, gang-operated, opposed-blade type with removable key operator, operable from face.
- E. Gymnasiums: Furnish front pivoted or welded in place blades, securely fastened to be immobile.

PART 3 - EXECUTION**3.01 Examination**

- A. Verify inlet and outlet locations.
- B. Verify systems are ready for installation.

3.02 Installation

- A. Install diffusers to ductwork with airtight connection.
- B. Install balancing dampers on duct take-off to diffusers, grilles, and registers, whether or not dampers are furnished as part of diffuser, grille, and register assembly.
- C. Do not locate air registers, diffusers or grilles in floors of toilet or bathing rooms.

3.03 Interface With Other Products

- A. Check location of outlets and inlets and make necessary adjustments in position to conform to architectural features, symmetry, and lighting arrangement.

END OF AIR OUTLETS AND INLETS

SECTION 23 52 23 CAST IRON BOILERS & ACCESSORIES

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Cast-iron boilers.
2. Boiler controls.
3. Fuel oil fired burner.
4. Breeching and chimneys.

1.02 Submittals

- A. Product Data: Capacities and accessories included with boiler. Include general layout, dimensions, size and location of water, fuel, electric and vent connections, electrical characteristics, weight and mounting loads.
- B. Test Reports: Indicate boilers meet or exceed specified performance and efficiency. Submit results of combustion test.
- C. Manufacturer's Installation Instructions: Assembly, support details, connection requirements, and include start-up instructions.
- D. Manufacturers Field Reports: Indicate condition of equipment after start-up including control settings and performance chart of control system.

1.03 Closeout Submittals

- A. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, cleaning procedures, replacement parts list, and maintenance and repair data.
- B. Provide combustion test results of final installation.

1.04 Quality Assurance

- A. Conform to ASME Section IV and UL 726 for construction of boilers. Provide boilers registered with National Board of Boiler and Pressure Vessel Inspectors.
- B. Unit Certification: UL certified.
- C. Conform to applicable code for internal wiring of factory-wired equipment.
- D. Products Requiring Electrical Connection: Listed and classified by testing firm acceptable to authority having jurisdiction as suitable for purpose specified and indicated.
- E. Manufacturer: Company specializing in manufacturing products specified in this Section with ten years' experience, and with service facilities within the State of Alaska.

- F. Installer: Company specializing in performing Work of this Section with three years' experience.

1.05 Field Measurements

- A. Verify field measurements prior to fabrication and indicate on Shop Drawings.

PART 2 - PRODUCTS

2.01 Cast-Iron Boilers

A. Manufacturers:

1. Weil McLain
2. Burnham
3. DeDietrich
4. Substitutions: Permitted.

- B. Product Description: Cast-iron boilers with natural draft, insulated jacket, sectional cast iron heat exchanger, fuel oil burning system, refractory, controls and boiler trim.

- C. Furnish water wall design consisting of water backed combustion area with water circulating around firebox. Refractory chamber or separate base not required.

D. Boiler Fabrication:

1. Assembly:
 - a. Cast iron sections.
 - b. ASME Section IV rating.
 - c. Factory assembled with push nipples or gaskets and draw rods.
 - d. Manufacturer's steel skid.
 - e. Fire Tested prior to shipping from the factory.
2. Furnish access for flue passages for cleaning and flame observation ports.
3. Jacket: Glass fiber insulated steel jacket, finished with factory applied baked enamel.

E. Boiler Fuel Burning System:

1. Burner Operation: ON - OFF with low fire position for ignition.
2. Oil Burner: High pressure atomizing type for No. 2 fuel oil with combustion air blower, fuel pump, hinged flame inspection port, cadmium sulfide flame sensor, electrodes, ignition transformer, and oil nozzle, fuel filter.
3. Oil Burner Safety Controls: Energize burner motor and electric ignition, limit time for establishment of main flame, monitor flame continuously during burner operation and stop burner on flame failure with manual reset

necessary, solenoid oil delay valve opens after burner motor energized and closes when de-energized.

4. Controls: Pre-wired, factory assembled electronic controls in control cabinet with flame scanner or detector, programming control, relays, and switches. Furnish pre-purge and post-purge ignition and shut down of burner in event of ignition pilot and main flame failure with manual reset.

F. Boiler Performance: As scheduled on the drawings.

2.02 Breeching

A. Fabricate of ASTM A569 carbon steel. Weld longitudinal seams. Fabricate joints by welding, lapping and bolting, or with companion flanges.

2.03 Double Wall Metal Stacks

A. Manufacturers:

1. Selkirk Corporation, Ultra-Temp HT
2. Substitutions: Permitted.

B. Tested and UL listed to UL103HT.

C. One inch insulation between walls:

1. Inner Jacket: Type 304 stainless steel.
2. Outer Jacket: Type 304 stainless steel.

D. Clearance from combustibles: 2 inches.

E. Accessories:

1. Note drawings for all accessories.
2. Barometric damper.
3. Famco, stainless steel wind directional cap.

PART 3 - EXECUTION

3.01 Installation

A. Provide factory assembled boiler. Perform pressure test on boiler after installation according to following:

1. Pressure test before connecting fuel oil piping, electrical connections, and controls.
2. Install boiler drain and pressure gage.
3. Plug remaining openings.
4. Fill boiler with water and vent air.
5. Pressure test to 1-1/2 times working pressure for 10 minutes with no leaks.

6. Repair leaks and retest.
 7. After successful test, drain and remove plugs from openings to be used for piping connections and controls.
- B. Install boilers plumb and level, to plus or minus 1/16 inch over boiler base.
 - C. Maintain manufacturer's recommended clearances around and over boilers.
 - D. Lag bolt boiler skid securely to structural floor members. Provide attachments in accordance with the seismic restraint specification Section 01 88 15.
 - E. Connect fuel oil piping according to NFPA 31.
 - F. Connect fuel oil piping to boiler. Arrange piping with clearances for burner removal and service.
 - G. Connect hot water piping to supply and return boiler connections.
 - H. Install discharge piping from relief valves full size of valve outlet routed to glycol mix tank with a maximum of 4 elbows and pitched down to outlet. Install hose thread adapter and cap on drain valves.
 - I. Install boiler trim and accessories furnished loose for field mounting.
 - J. Install electrical devices furnished loose for field mounting.
 - K. Coordinate wiring with emergency boiler shut-off switches.
 - L. Install control wiring between boiler control panel and field mounted control devices.
 - M. Connect flue to boiler outlet, full size of outlet.

3.02 Field Quality Control

- A. Perform combustion test including boiler firing rate, over fire draft, gas flow rate, heat input, burner manifold gas pressure, percent carbon monoxide, percent oxygen, percent excess air, flue gas temperature at outlet, ambient temperature, net stack temperature, percent stack loss, percent combustion efficiency, and heat output. Perform test at minimum, and high fire.
- B. Arrange with local authorities having jurisdiction for inspection of boiler, piping, and for certificate of operation.

3.03 Manufacturer's Field Service

- A. Start-up boilers according to manufacturer's start-up instructions and in presence of boiler manufacturer's representative or factory trained personnel.
- B. Test controls and demonstrate compliance with requirements.
- C. Replace damaged or malfunctioning controls and equipment.

3.04 Adjusting

- A. Complete combustion testing and adjust burner for maximum burning efficiency.

1. Combustion tests and adjustments to be completed at final installation location.

B. Submit combustion test results with Close-Out Documents.

3.05 Cleaning

- A. Flush and clean boilers upon completion of installation, according to manufacturer's start-up instructions.

3.06 Demonstration

- A. Demonstrate operation and maintenance procedures.
- B. Furnish services for manufacturer's technical representative for one day to instruct Owner's personnel in operation and maintenance of boilers. Schedule training with Owner, and provide at least seven days' notice to Engineer of training date.

END OF CAST-IRON BOILERS & ACCESSORIES

SECTION 23 73 00

INDOOR CENTRAL-STATION AIR-HANDLING UNITS

PART 1 - GENERAL

1.01 Summary

- A. Section includes modular factory fabricated air-handling units and accessories.

1.02 Submittals

- A. Shop Drawings: Indicate assembly, unit dimensions, weight loading, required clearances, construction details, field connection details, electrical characteristics, and connection requirements.
- B. Product Data: Submit following:
1. Published Literature: Indicate capacities, ratings, gages and finishes of materials, electrical characteristics, and connection requirements.
 2. Filters: Data for filter media, filter performance data, filter assembly, and filter frames.
 3. Fans: Performance and fan curves with specified operating point plotted, power, RPM.
 4. Sound Power Level Data: Fan outlet and casing radiation at rated capacity.
 5. Dampers: Include leakage, pressure drop, and sample calibration curves. Indicate materials, construction, dimensions, and installation details.
 6. Electrical Requirements: Power supply wiring including wiring diagrams for interlock and control wiring. Indicate factory installed and field installed wiring.
- C. Samples: Submit two of each type of replacement filter media with frame.
- D. Manufacturer's Installation Instructions: Submit.
- E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.03 Closeout Submittals

- A. Operation and Maintenance Data: Submit instructions for lubrication, filter replacement, motor and drive replacement, spare parts lists, and wiring diagrams.

1.04 Quality Assurance

- A. Outside Damper Leakage: Test according to AMCA 500.
- B. Maintain one copy of each document on Site.

1.05 Delivery, Storage, And Handling

- A. Accept units and components on Site in factory protective containers, with factory shipping skids and lifting lugs. Inspect for damage.

- B. Protect units from weather and construction traffic by storing in dry, roofed location.

1.06 Warranty

- A. Furnish five-year manufacturer warranty for air handling units.

PART 2 - PRODUCTS

2.01 Air Handling Units

- A. Configuration: Fan section and coil section plus accessories, including:

- 1. Heating coil.
- 2. Filter section.

- B. Performance Base: Sea level pressure or altitude.

- C. Fabrication: Conform to AMCA 99.

2.02 Casing

- A. Channel base of welded steel. Assemble sections with gaskets and bolts.

- B. Outside Casing:

- 1. Aluminum: 0.063 inch thick.

- C. Inside Casing:

- 1. Aluminum: Solid 0.32 inch thick.

- D. Insulation: Neoprene coated, glass fiber, applied to internal surfaces with adhesive with exposed edges of insulation coated with adhesive.

- E. Finish: Baked enamel.

- F. Inspection Doors: 10 by 10 inches of galvanized steel for flush mounting, with gasket, latch, and handle assembly.

2.03 Fans

- A. Type: Forward curved type fan.

- B. Performance Ratings: Conform to AMCA 210 and label with AMCA Certified Rating Seal.

- C. Sound Ratings: AMCA 301, tested to AMCA 300 and label with AMCA Certified Sound Rating Seal.

- D. Bearings: Self-aligning, grease lubricated, ball or roller bearings with lubrication fittings extended to exterior of casing with aluminum tube and grease fitting rigidly attached to casing.

- E. Mounting: Locate fan and motor internally on welded steel base coated with corrosion resistant paint. Factory mount motor on slide rails. Furnish access to motor, drive, and bearings through removable casing panels or hinged access doors.

F. Flexible Connection: Separate unit from connecting ductwork.

2.04 MOTORS

A. Motor Type: NEMA MG 1 Type 1

2.05 Bearings And Drives

A. Bearings: Pillow block type, self-aligning, grease-lubricated ball bearings.

B. Shafts: Solid, hot-rolled steel, ground and polished, with key-way, and protectively coated with lubricating oil.

C. V-Belt Drive: Cast iron or steel sheaves, dynamically balanced, bored to fit shafts, and keyed. Variable and adjustable pitch sheaves for motors 15 hp and under selected so required rpm is obtained with sheaves set at mid-position; fixed sheave for 20 hp and over, matched belts, and drive rated as recommended by manufacturer or minimum 1.5 times nameplate rating of motor.

D. Belt Guard: Fabricate to SMACNA Standard; 0.106 inch (2.6 mm) thick, 3/4 inch (20 mm) diamond mesh wire screen welded to steel angle frame or equivalent, prime coated. Secure to fan or fan supports without short circuiting vibration isolation, with provision for adjustment of belt tension, lubrication, and use of tachometer with guard in place.

2.06 Coils

A. Casing with access to both sides of coils. Enclose coils with headers and return bends fully contained within casing. Slide coils into casing through removable end panel.

B. Air Coils: Certify capacities, pressure drops, and selection procedures according to ARI 410.

C. Fabrication:

1. Tubes: 5/8 inch (16 mm) OD seamless copper expanded into fins, brazed joints.

2. Fins: Aluminum.

3. Casing: Die formed channel frame of galvanized steel.

D. Water Heating Coils:

1. Headers: Cast iron, seamless copper tube, or prime coated steel pipe with brazed joints.

2. Configuration: Drainable, with threaded plugs for drain and vent; serpentine type with return bends on smaller sizes and return headers on larger sizes.

2.07 Filters

A. Filter Box: Section with filter guides, access doors from both sides, for face loading with gaskets and blank-off plates.

B. Filter Media: UL 900 listed, Class I.

- C. Angle: 2 inches deep disposable panel filters.
- D. Filter Gauges: 2-inch diameter diaphragm actuated dial in metal case with static pressure tips.

2.08 Dampers

- A. Face and Bypass Dampers: Factory mount in casing with access doors, of galvanized steel blades, galvanized steel frame, and axles in self-lubricating nylon bearings. Arrange to match coil face with top bypass, blank-off and division sheets, internal linkage, access doors, and adjustable resistance plate.

PART 3 - EXECUTION

3.01 Installation

- A. Install according to ARI 430.
- B. Install flexible connections between unit and inlet and discharge ductwork. Install metal bands of connectors parallel with minimum 1 inch (25 mm) flex between ductwork and fan while running. Refer to Section 233000.
- C. Install assembled units with vibration isolators. Install isolated fans with resilient mountings and flexible electrical leads. Install restraining snubbers as required..
- D. Install floor mounted units on concrete housekeeping pads at least 3-1/2 inches high and 6 inches (150 mm) wider than unit.
- E. Provide sheaves required for final air balance.
- F. Insulate coil headers located outside airflow as specified for piping. Refer to Section 230700.
- G. Connect humidifiers to water supply. Install gate valve on water supply piping. Install 3/4 inch (20 mm) hose bibb accessible from interior. Pipe drain and overflow to nearest floor drain.

3.02 Installation Hot Water Heating Coils

- A. Make connections to coils with unions or flanges.
- B. Connect water supply to leaving airside of coil (counter flow arrangement).
- C. Locate water supply at bottom of supply header and return water connection at top.
- D. Install water coils to allow draining and install drain connection at low points.
- E. Install following piping accessories on hot water piping connections.
 - 1. On Supply:
 - a. Thermometer well and thermometer.
 - b. Shutoff valve.
 - c. Strainer.

- d. Control valve.
 - e. Pressure gage.
- 2. On Return:
 - a. Thermometer well and thermometer.
 - b. Well for control system temperature sensor.
 - c. Pressure gage.
 - d. Shutoff valve.
 - e. Balancing valve.
- F. Install automatic air vents at high points complete with shutoff valve.

END OF INDOOR CENTRAL-STATION AIR-HANDLING UNITS

SECTION 26 00 00 ELECTRICAL WORK, GENERAL

PART 1 - GENERAL

1.01 The Requirement

- A. The CONTRACTOR shall provide electrical work, complete and operable, in accordance with the Contract Documents.
- B. The provisions of this Section apply to all sections in Division 26 and Division 40, except as indicated otherwise.
- C. The WORK of this Section is required for operation of electrically-driven equipment provided under specifications in other Divisions. The CONTRACTOR's attention is directed to the requirement for proper coordination of the WORK of this Section with the WORK of equipment specifications, and the WORK of instrumentation sections.
- D. Concrete, excavation, backfill, and steel reinforcement required for encasement, installation, or construction of the WORK of the various sections of Division 26 is included as a part of the WORK under the respective sections, including duct banks, manholes, handholes, equipment housekeeping pads, and light pole bases.
- E. The CONTRACTOR shall coordinate with the OWNER and serving utility as necessary for all work to be done in modification of the existing electrical service. The CONTRACTOR shall coordinate with United Utilities, Inc., for disconnection and reconnection of electrical service; application and permit requirements are part of the WORK.
- F. All required utility fees shall be paid for by the CONTRACTOR including connect/disconnect fees and new service charges. Contract adjustment will be made based on actual charges.

1.02 Reference Standards

- A. The WORK of this Section and all sections in Division 26 shall comply with the following, as applicable:

NEC (NFPA 70)	National Electrical Code – latest adopted version
NETA	International Electrical Testing Association
NEMA 250	Enclosure for Electrical Equipment (1000 Volts Maximum)
ANSI	American National Standards Institute
UL	Underwriters Laboratories (UL-508A or 913 for intrinsically safe)

- B. All electrical equipment shall be listed by and shall bear the label of Underwriters' Laboratories, Inc. (UL) or other State of Alaska recognized testing laboratory.
- C. Installation of electrical equipment and materials shall comply with OSHA Safety and Health Standards, state building standards, and applicable local codes and regulations.
- D. Where the requirements of the specifications conflict with UL, NEMA, NFPA, or other applicable standards, the more stringent requirements shall govern.

1.03 Signage

- A. Local Disconnect Switches:
 - 1. Each local disconnect switch for motors and equipment shall be legibly marked to indicate its purpose, unless the purpose is indicated by the location and arrangement.
- B. Isolating Switches: Isolating switches not interlocked with an approved circuit interrupting device shall be provided with a sign warning against opening them under load.

1.04 Public Utilities Requirements

- A. The Public Electrical Utility associated with this project is Alaska Village Electric Cooperative (AVEC). The CONTRACTOR shall coordinate all requirements with the Utility as required.
- B. The CONTRACTOR shall contact the serving utility and verify compliance with requirements before construction. The CONTRACTOR shall coordinate schedules and payments for work by all utilities.
- C. Electrical service shall be as indicated and be as required by the serving utility.
- D. The CONTRACTOR shall verify and provide all service conduits, fittings, grounding devices, and all service wires not provided by the serving utility.
- E. The CONTRACTOR shall verify with the utility the exact location of each service point, type of service, and shall pay all charges levied by the serving utilities as part of the WORK.

1.05 Permits And Inspection

- A. All electrical permits shall be obtained and inspection fees shall be paid by the CONTRACTOR.
- B. The CONTRACTOR shall pay all electrical utility line extension, service upgrade, equipment, connection and turn-on service charges required by the utility company.

1.06 Contractor Submittals

- A. Furnish submittals in accordance with Section 01 33 00 Submittals Procedure.
- B. Shop Drawings: Include the following:

1. Complete material lists stating manufacturer and brand name of each item or class of material.
 2. Shop Drawings for all grounding WORK not specifically indicated.
 3. Front, side, rear elevations, and top views with dimensional data.
 4. Location of conduit entrances and access plates.
 5. Component data.
 6. Connection diagrams, terminal numbers, internal wiring diagrams, conductor size, and cable numbers.
 7. Method of anchoring, seismic requirements, weight.
 8. Types of materials and finish.
 9. Nameplates.
 10. Temperature limitations, as applicable.
 11. Voltage requirement, phase, and current, as applicable.
 12. Front and rear access requirements.
 13. Test reports.
 14. Grounding requirements.
- C. Catalog cuts of applicable pages of bulletins or brochures for mass produced, non-custom manufactured material. Catalog data sheets shall be stamped to indicate the project name, applicable Section and paragraph; and shall be clearly marked to indicate exact model number, and options being provided.
- D. Shop Drawings shall be custom prepared. Drawings or data indicating "optional" or "as required" equipment are not acceptable. Options not proposed shall be crossed out or deleted from Shop Drawings.
- E. Materials and Equipment Schedules: The CONTRACTOR shall deliver to the ENGINEER within 30 days of the commencement date in the Notice to Proceed, a complete list of all materials, equipment, apparatus, and fixtures proposed for use. The list shall include type, sizes, names of manufacturers, catalog numbers, and other such information required to identify the items.
- F. Owner's Manuals: Complete information in accordance with Section 01 33 00.
- G. Record Drawings: The CONTRACTOR shall show invert and top elevations and routing of all duct banks and concealed below-grade electrical installations. Record Drawings shall be prepared, be available to the ENGINEER, and be submitted according to Section 01 33 00.

1.07 Area Designations

- A. General:
1. Raceway system enclosures shall comply with Section 26 05 33 – Electrical Raceway Systems.

2. Electrical WORK specifically indicated in sections within any of the Specifications shall comply with those requirements.
3. Electrical WORK in above ground indoor areas shall be NEMA 1 unless otherwise indicated.
4. Electrical WORK in damp or wet locations shall be NEMA 3R unless otherwise indicated.
5. Electrical WORK in below ground facilities and outdoors shall be NEMA 4X unless otherwise indicated.
6. Installations in hazardous locations shall conform strictly to the requirements of the Class, Group, and Division required.

B. Material Requirements:

1. NEMA 4X enclosures shall be stainless steel, Type 304 or 316.

1.08 TESTS

- A. The CONTRACTOR shall be responsible for factory and field tests required by specifications in Division 26 and by the ENGINEER or authority having jurisdiction. The CONTRACTOR shall furnish necessary testing equipment and pay costs of tests, including all replacement parts and labor, due to damage resulting from damaged equipment or from testing and correction of faulty installation.
- B. Where test reports are indicated, proof of design test reports for mass-produced equipment shall be submitted with the Shop Drawings, and factory performance test reports for custom-manufactured equipment shall be submitted and be approved prior to shipment. Field test reports shall be submitted for review prior to Substantial Completion.
- C. Equipment or material which fails a test shall be removed and replaced.
- D. Cable Testing: Cables and conductors shall be tested in accordance with Section 26 05 19.
- E. Test Ground Fault Interrupter (GFI) receptacles and circuit breakers for proper operation by methods sanctioned by the receptacle manufacturer.
- F. A functional test and check of all electrical components is required prior to performing subsystem testing and commissioning. Compartments and equipment shall be cleaned as required by other provisions of these Specifications before commencement of functional testing. Functional testing shall comprise:
 1. Visual and physical check of cables, circuit breakers, transformers and connections associated with each item of new and modified equipment.
 2. Circuit breakers that have adjustable time or pick-up settings for ground current, instantaneous overcurrent, short-time overcurrent, or long-time overcurrent, shall be field-adjusted by a representative of the circuit breaker manufacturer. Setting shall be tabulated and proven for each

circuit breaker in its installed position. Test results shall be certified by the person performing the tests and be transmitted to the ENGINEER.

- G. Complete ground testing of grounding electrodes per requirements prior to operating the equipment.
- H. Subsystem testing shall occur after the proper operation of alarm and status contacts has been demonstrated or otherwise accepted by the ENGINEER and after process control devices have been adjusted as accurately as possible. It is intended that the CONTRACTOR will adjust instruments to their operating points prior to testing and will set pressure switches, flow switches, and timing relays as dictated by operating results.
- I. After initial settings have been completed, each subsystem shall be operated in the manual mode and it shall be demonstrated that operation is in compliance with the Contract Documents. Once the manual mode of operation has been proven, automatic operation shall be demonstrated through coordination with the Owner to verify such items as proper start and stop sequence of pumps, proper operation of valves, proper speed control, etc.

1.09 Demolition And Related Work

- A. The CONTRACTOR shall perform electrical demolition WORK as indicated on the electrical drawings and in parts of this Specification Section. The CONTRACTOR is cautioned that demolition WORK may also be indicated on non-electrical drawings and other Specification Sections. Coordinate electrical de-energization, disconnection, and removal with all trades and the overall sequence of construction.

1.010 Construction Sequencing

- A. The CONTRACTOR shall carefully examine all work to be done in, on, or adjacent to existing equipment. Work shall be scheduled, subject to the OWNER's approval, to minimize equipment shutdown time. The CONTRACTOR shall submit a written request including sequence and duration of activities to be performed prior to any facility shutdown.
- B. All switching, safety tagging, etc., required for process or equipment shutdown or to isolate existing equipment shall be performed by the CONTRACTOR. In no case shall the CONTRACTOR begin any work in, on, or adjacent to existing facility without written authorization by the OWNER or the ENGINEER.
- C. Extreme caution shall be exercised by the CONTRACTOR in order not to damage existing utilities. Cost of repairs of damages caused during construction shall be the CONTRACTOR's responsibility without any additional compensation from the OWNER.

1.011 Installation Of New Equipment:

- A. The CONTRACTOR will install and terminate the new panelboards, control panels, junction boxes, conduits, cables, and instruments, etc. in accordance with the agreed schedule. The CONTRACTOR shall provide a list, daily, of the points that are ready for service as they are connected, calibrated, and tested. The CONTRACTOR shall only connect to equipment that is new or is out of service, unless otherwise directed by the ENGINEER or OWNER.

PART 2 - PRODUCTS

2.01 General

- A. Equipment and materials shall be new, shall be listed by UL, and shall bear the UL label where UL requirements apply; other Nationally Recognized Testing Agencies recognized by state of Alaska Mechanical Inspections Division will be considered equivalent to UL. Equipment and materials shall be the products of experienced and reputable manufacturers in the industry. Similar items in the WORK shall be products of the same manufacturer. Equipment and materials shall be of industrial grade standard of construction.
- B. Where a NEMA enclosure type is indicated in a non-hazardous location, the CONTRACTOR shall utilize that type of enclosure, despite the fact that certain modifications, such as cutouts for control devices, may negate the NEMA rating.
- C. On devices indicated to display dates, the year shall be displayed as 4 digits.

2.02 Mounting Hardware

- A. Miscellaneous Hardware:
 - 1. Hot-dipped galvanized nuts, bolts and washers may be used with galvanized rigid conduit (GRC) and enclosures.
 - 2. Hot-dipped galvanized hardware may be used with GRC.
 - 3. Strut for mounting of raceways and equipment shall be galvanized or stainless steel as required by the area classification. Where contact with concrete or dissimilar metals may cause galvanic corrosion, suitable non-metallic insulators shall be utilized to prevent such corrosion. Strut shall be as manufactured by Unistrut, B-Line, or equal.
 - 4. Anchors for attaching equipment to concrete walls, floors and ceilings shall be stainless steel expansion anchors, such as "Rawl-Bolt," "Rawl-Stud" or "Lok-Bolt" as manufactured by Rawl; similar by Star, or equal. Wood plugs shall not be used.

2.03 Electrical Identification

- A. Nameplates: Nameplates shall be fabricated from white-letter, black-face laminated plastic engraving stock, Formica type ES-1, or equal. Each shall be fastened securely, using fasteners of brass, cadmium-plated steel, or stainless steel, screwed into inserts or tapped holes, as required. Engraved characters shall

be block style, with no characters smaller than 1/8-inch in height, unless otherwise noted.

- B. Conductor and Equipment Identification: Conductor and equipment identification devices shall be heat-shrink plastic tubing with machine printing. Lettering shall read from left to right and shall face toward the front of the panel.

PART 3 - EXECUTION

3.01 General

- A. Incidentals: The CONTRACTOR shall provide all materials and incidentals required for a complete and operable system, even if not required explicitly by the contract documents. Typical incidentals are terminal lugs not furnished with vendor-supplied equipment, compression connectors for cables, splices, junction and terminal boxes, and control wiring required by vendor-furnished equipment to connect with other equipment indicated in the Contract Documents.
- B. Field Control of Location and Arrangement: The Drawings diagrammatically indicate the desired location and arrangement of outlets, conduit runs, equipment, and other items. Exact locations shall be determined by the CONTRACTOR in the field, based on the physical size and arrangement of equipment, finished elevations, and other obstructions. Locations on the Drawings, however, shall be followed as closely as possible.
 - 1. Where raceway development drawings, or "home runs," are shown, the CONTRACTOR shall route the raceways in accordance with the indicated installation requirements.
 - 2. Conduit and equipment shall be installed in such a manner as to avoid all obstructions and to preserve headroom and keep openings and passageways clear. Lighting fixtures, switches, convenience outlets, and similar items shall be located within finished rooms as indicated. Where the Drawings do not indicate exact locations, the ENGINEER shall determine such locations. If equipment is installed without instruction and must be moved, it shall be moved without additional cost to the OWNER. Lighting fixture locations shall be adjusted slightly to avoid obstructions and to minimize shadows.
 - 3. Wherever raceways and wiring for lighting and receptacles are not indicated, it shall be the CONTRACTOR's responsibility to provide all lighting and receptacle-related conduits and wiring as required, based on the actual installed fixture layout and the circuit designations as indicated. Wiring shall be #12 AWG minimum, and conduits shall be 3/4-inch minimum, unless otherwise indicated. Where circuits are combined in the same raceway, the CONTRACTOR shall de-rate conductor ampacities in accordance with NEC requirements.
- C. Workmanship: Materials and equipment shall be installed in strict accordance with printed recommendations of the manufacturer. Installation shall be

accomplished by workers skilled in the work. Installation shall be coordinated in the field with other trades to avoid interferences.

- D. Protection of Equipment and Materials: The CONTRACTOR shall fully protect materials and equipment against damage from any cause. Materials and equipment, both in storage and during construction, shall be covered in such a manner that no finished surfaces will be damaged, marred, or splattered with water, foam, plaster, or paint. Moving parts shall be kept clean and dry. The CONTRACTOR shall replace or refinish damaged materials or equipment, including faceplates of panels and switchboard sections, as part of the WORK.
- E. Incoming utility power equipment shall be provided in conformance with the utility's requirements.

3.02 Core Drilling

- A. The CONTRACTOR shall perform core drilling required for installation of raceways through concrete walls, floors and handholes. Locations of floor penetrations, as may be required, shall be based on field conditions. Verify all exact core drilling locations based on equipment actually furnished, as well as exact field placement. To the extent possible, identify the existence and locations of encased raceways and other piping in existing walls and floors with the OWNER prior to any core drilling activities. Damage to any encased conduits, wiring, and piping shall be repaired as part of the WORK.
- B. All penetrations required to extend raceways through concrete walls, roofs, and floors or masonry walls shall be core drilled.

3.03 Equipment Anchoring

- A. Floor supported, wall-, or ceiling-hung equipment and conductors shall be anchored in place by methods that will meet seismic requirements in the area where the project is located. Wall-mounted panels that weigh more than 500 pounds, or which are within 18 inches of the floor, shall be provided with fabricated steel (stainless steel in designated areas) support pedestals. If the supported equipment is a panel or cabinet enclosed within removable side plates, it shall match supported equipment in physical appearance and dimensions. Transformers hung from 4-inch stud walls and weighing more than 300 pounds shall have auxiliary floor supports.
- B. Anchoring methods and leveling criteria in the printed recommendations of the equipment manufacturers are a part of the WORK of this Contract. Such recommendations shall be submitted as Shop Drawings under Section 01 33 00.
- C. Panels, raceways, and other equipment shall be anchored and supported for Seismic requirements.

3.04 Equipment Identification

- A. General: Equipment and devices shall be identified as follows:

1. Nameplates shall be provided for all switchboards, panelboards, control and instrumentation panels, starters, switches, and pushbutton stations. In addition to nameplates, control devices shall be equipped with standard collar-type legend plates.
2. Control devices within enclosures shall be identified as indicated. Identification shall be similar to the subparagraph above.
3. Equipment names and tag numbers, where indicated on the Drawings, shall be utilized on all nameplates.
4. The CONTRACTOR shall furnish typewritten circuit directories for panelboards; circuit directory shall accurately reflect the equipment connected to each circuit.

3.05 Cleaning

- A. Before final acceptance, the electrical WORK shall be thoroughly cleaned. Exposed parts shall be thoroughly clean of cement, plaster, and other materials. Oil and grease spots shall be removed with a non-flammable cleaning solvent. Such surfaces shall be carefully wiped and all cracks and corners cleaned out. Touch-up paint shall be applied to scratches on panels and cabinets. Electrical cabinets or enclosures shall be vacuum-cleaned.
- B. CONTRACTOR shall group, coil, and tie wrap all spare cables at the bottom of the Local Control Panels. The wires shall be grouped according to the device, control panel, or MCC section they originate from. Cable groups shall be tagged according to their point of origin.
- C. All debris shall be removed from the void below the panels.

END OF ELECTRICAL WORK, GENERAL

SECTION 26 05 19 WIRE AND CABLES

PART 1 -- GENERAL

1.01 The Requirement

- A. The CONTRACTOR shall provide wires and cable, complete and operable, in accordance with the Contract Documents.

1.02 Contractor Submittals

- A. The CONTRACTOR shall submit Shop Drawings in accordance with Section 01 33 00 and 26 00 00 – Electrical Work, General.

PART 2 -- PRODUCTS

2.01 General

- A. Conductors, including grounding conductors, shall be copper. Aluminum conductor wire and cable will not be permitted. Insulation shall bear the label of Underwriters' Laboratories, Inc. (UL), the manufacturer's trademark, and identify the type, voltage, and conductor size. All conductors except flexible cords and cables, fixture wires, and conductors that form an integral part of equipment, such as motors and controllers, shall conform to the requirements of Article 310 of the National Electrical Code, latest edition, for current carrying capacity. Flexible cords and cables shall conform to Article 400, and fixture wires shall conform to Article 402. Wiring shall have wire markers at each end.

2.02 Low Voltage Wire And Cable

A. Power and Lighting Wire

1. Power and lighting wire shall be No. 12 copper AWG minimum size.
2. Wire rated for 600 volts in duct or conduit for all power shall be:
 - a. In above grade interior locations: Type THWN-2
 - b. In exterior, underground, and below grade installations: Type XHHW-2
3. Wiring for 600 volt class power and lighting shall be as manufactured by General Cable, Okonite, Rome Cable or equal.

B. Control Wire

1. Control wire in duct or conduit shall be the same type as power and lighting wire indicated above.
2. Control wiring shall be: No.14, 19-strand copper AWG.

C. Instrumentation Cable

1. Instrumentation cable shall be rated at 600 volts.
 2. Individual conductors shall be No. 18 AWG stranded, tinned copper. Insulation shall be color-coded polyethylene: black-red for two-conductor cable, and black-red-white for three-conductor cable.
 3. Instrumentation cables shall be composed of the individual conductors, an aluminum polyester foil shield, a No. 18 AWG stranded, tinned copper drain wire, and a PVC outer jacket with a thickness of 0.048-inches.
 4. Single pair, No. 18 AWG, twisted, shielded cable shall be Belden Part No. 9341, or equal.
 5. Single triad, No. 16 AWG, twisted, shielded cable shall be Belden Part No. 1119A, or equal.
- D. Multi-pair Control Cable – Multi-pair control cable shall be 6-pair, 600V, No. 16 AWG, twisted, shielded, direct burial rated Belden Part No. 1040A, or equal.
- E. Cat 6 Cable: Cat 6 patch cable shall be 4-pair 24-gauge twisted pair rated to TIA/EIA 568-C.2 Category 6 and UL-listed. The CONTRACTOR shall install RJ-45 connectors as required.
- F. Fire Alarm Cable: Fire Alarm Cable shall be as recommended by the Fire Alarm Control Panel manufacturer or the Fire Alarm Device manufacturer.

2.03 Cable Terminations

- A. Pre-insulated, pressure type, twist-on connectors for conductors #10 AWG and smaller shall be 3M Company "Scotchlok" or Ideal Industries, Inc. "Super Nut" or equal.
- B. Compression connectors shall be Burndy "Hi Lug", Thomas & Betts "Sta-Kon," or equal. Threaded connectors shall be split bolt type of high strength copper alloy.
- C. Pre-insulated fork tongue lugs shall be Thomas & Betts, Burndy, or equal.
- D. General purpose insulating tape shall be Scotch No. 33, Plymouth "Slip-knot," or equal. High temperature tape shall be polyvinyl as manufactured by Plymouth, 3M, or equal.
- E. Labels for coding 600-volt wiring shall be heat-shrink plastic tubing type with machine print. Lettering shall read from left to right and face the front of the panel. Field wires terminating at a Control Panel shall be labeled with the wire number shown on the Control Panel wiring diagrams. The CONTRACTOR shall mark all as-built drawings with wire labels.

PART 3 -- EXECUTION

3.01 General

- A. The CONTRACTOR shall provide and terminate all power, control, and instrumentation conductors, except where indicated.

3.02 Installation

- A. Conductors for feeders as defined in Article 100 of the NEC shall be sized to prevent a voltage drop exceeding 2 percent at the farthest point of power distribution, and where the maximum total voltage drop on both feeders and branch circuits to the farthest connected load does not exceed 5 percent.
- B. Conductors for branch circuits as defined in Article 100 of the NEC, shall be sized to prevent a voltage drop exceeding 3 percent at the farthest connected load or combinations of such loads, and where the maximum total voltage drop on both feeders and branch circuits to the farthest connected load does not exceed 5 percent.
- C. Conductors shall not be pulled into raceway until raceway has been cleared of moisture and debris.
- D. Pulling tensions on raceway cables shall be within the limits recommended by the cable manufacturer. Wire pulling lubricant, where needed, shall be UL-approved for the cables/wires being pulled.
- E. The following wiring shall be run in separate raceways:
 - 1. 24 VDC discrete signal and instrument power supply.
 - 2. 4-20 mA analog signal.
 - 3. All AC circuits.
 - 4. Intrinsically safe circuits.
 - 5. Fire alarm signaling line circuits
- F. Wire in panels, cabinets, and wireways shall be neatly grouped using nylon tie straps and shall be fanned out to terminals.

3.03 Splices And Terminations

- A. General
 - 1. No splicing or taps will be permitted in either feeder or branch circuits except at outlet or accessible junction boxes. Utilize compression type solderless connectors when making splices or taps in conductors # 8 AWG or larger. Utilize pre-insulated connectors, 3M Company "Scotchlok" or Ideal Industries, Inc. "Super Nut" for splices and taps in conductors # 10 AWG and smaller. Tape all splices and joints with Scotch #88 plastic tape to secure insulation strength equal to that of the conductors joined.
 - 2. There shall be no cable splices in underground conduits, manholes or pullboxes.
 - 3. Stranded conductors shall be terminated directly on equipment box lugs, making sure that all conductor strands are confined within the lug. Use forked-tongue lugs where equipment box lugs have not been provided.

4. Excess control and instrumentation wire shall be properly taped and terminated as spares.
 - B. Control Wire and Cable
 1. Control conductors shall be spliced or terminated only on terminal strips in panels or vendor-furnished equipment.
 2. In terminal cabinets, junction boxes, motor control centers, and control panels, control wire and spare wire shall be terminated to terminal strips.
 - C. Instrumentation Wire and Cable
 1. Shielded instrumentation cables shall be grounded at one end only, the receiving end (i.e., in the control panel) on a 4-20 mA system.
 - D. Power Wire and Cable
 1. No branch circuit conductors may be spliced unless the CONTRACTOR can convince the ENGINEER that they are essential, and the ENGINEER gives written permission.
- 3.04 Cable Identification
- A. General: Wires and cables shall be identified for proper control of circuits and equipment and to reduce maintenance effort.
 - B. Identification Numbers: The CONTRACTOR shall assign to each control and instrumentation wire and cable a unique identification number. Numbers shall be assigned to all conductors having common terminals and shall be shown on "as built" drawings. Identification numbers shall appear within 3 inches of conductor terminals. "Control Conductor" shall be defined as any conductor used for alarm, annunciator, or signal purposes.
 1. Multiconductor cable:
 - a. Assign a number that shall be attached to the cable at intermediate pull boxes and at stub-up locations beneath freestanding equipment.
 - b. Cable number shall form a part of the individual wire number.
 - c. Individual control conductors and instrumentation cable shall be identified at pull points as described above.
 - d. The instrumentation cable numbers shall incorporate the loop numbers assigned in the Contract Documents.
 2. All 120/240-volt system feeder cables and branch circuit conductors shall be color-coded as follows:
 3. The 120/240-volt system conductors shall be color-coded as follows:
 - a. Line 1 - Black
 - b. Line 2 - Red

- c. Neutral - White
- 4. Color-coding tape shall be used where colored insulation is not available.
 - a. Branch circuit switch leg shall be Yellow.
 - b. Insulated ground wire shall be Green.
 - c. Neutral shall be White or Gray as indicated above.
- 5. Color coding and phasing shall be consistent throughout the Site, bus bars at panelboards, switchboards, and motor control centers shall be connected Phase A-B-C, top to bottom, or left to right, facing connecting lugs.
- 6. General purpose AC control cables shall be Red.
- 7. General purpose DC control cables shall be Blue.
- 8. Spare cable shall be terminated on terminal screws and shall be identified with a unique number as well as with destination.
- 9. Terminal strips shall be identified by computer-printable, cloth, self-sticking marker strips attached under the terminal strip.

3.05 Testing

- A. Cable Assembly and Testing: Cable assembly and testing shall comply with applicable requirements of ICEA Publication No. S-68-516 - Ethylene-Propylene-Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. Factory test results shall be submitted in accordance with Section 013000 – Contractor Submittals, prior to shipment of cable. The following field tests shall be the minimum requirements:
 - 1. Power cable rated at 600 volts shall be tested with a 1000-volt megohm meter for insulation resistance between phases and from each phase to a ground using a megohmmeter. Tests shall be performed on all feeders as well as branch circuits serving motors or major pieces of equipment.
 - 2. Field testing shall be done after cables are installed in the raceways.
 - 3. Field tests shall be performed by a certified test organization acceptable to the cable manufacturer. Test results shall be submitted to the ENGINEER for review and acceptance.
 - 4. Cables showing less than 100 megohm resistance shall be replaced with a new cable or be repaired. Repair methods shall be as recommended by the cable manufacturer and shall be performed by persons certified by the industry.
- B. Continuity Test: Control and instrumentation cables shall be tested for continuity, polarity, undesirable ground, and origination. Such tests shall be performed after installation and prior to placing all wires and cables in service.

END OF WIRES AND CABLES

SECTION 26 05 26 GROUNDING

PART 1 - GENERAL

1.01 The Requirement

- A. The CONTRACTOR shall provide the electrical grounding system, complete and operable, in accordance with the Contract Documents.
- B. The requirements of Section 26 00 00 – Electrical Work, General apply to this Section.
- C. Single Manufacturer: Like products shall be the end product of one manufacturer in order to achieve standardization of appearance, operation, maintenance, spare parts and manufacturer's services.

1.02 Contractor Submittals

- A. Furnish submittals in accordance with Section 01 33 00 and Section 26 00 00 – Electrical Work, General.
- B. Shop Drawings: Manufacturer's product information for connections, clamps, and grounding system components, showing compliance with the requirements of this Section.

PART 2 - PRODUCTS

2.01 General

- A. Components of the grounding electrode system shall be manufactured in accordance with ANSI/UL 467 - Standard for Safety Grounding and Bonding Equipment, and shall conform to the applicable requirements of National Electrical Code Article 250 and local codes.

2.02 Grounding System

- A. Grounding loop conductors shall be bare annealed copper conductors suitable for direct burial. Conductors shall be No. 2/0 for 100A services, or No. 4/0 for all other service sizes, unless indicated otherwise.
- B. Ground Rods
 - 1. Unless indicated otherwise, ground rods shall be a minimum of 3/4-inch in diameter, 10 feet long, and have a uniform covering of electrolytic copper metallically bonded to a rigid steel core. The copper to steel bond shall be corrosion resistant.
 - 2. Conform to ANSI/UL 467.
 - 3. Sectional type joined by threaded copper alloy couplings.
- C. Buried cable-to-cable and cable-to-ground rod connections shall be made using exothermic welds by Cadweld, Enrico Products, or equal.

- D. Exposed grounding connectors shall be of the compression type (connector to cable), made of high copper alloy, and be manufactured specifically for the particular grounding application. The connectors shall be Burndy, O.Z. Gedney, or equal.
- E. Grounding clamps shall be used to bond each separately derived system to the grounding electrode conductors.
- F. Equipment Grounding Circuit Conductors
 - 1. These conductors shall be the same type and insulation as the load circuit conductors. The minimum size shall be as outlined in Table 250.122 of the National Electrical Code, unless indicated otherwise.
 - 2. Metallic conduit systems shall have equipment grounding wires as well as being equipment grounding conductors themselves.
- G. Ground clamps in concrete shall be rated for use with rebar and embedded in concrete.
- H. Manufacturers of grounding materials shall be Copperweld, Blackburn, Burndy, or equal.

PART 3 - EXECUTION

3.01 Grounding

- A. Provide a separate grounding conductor, securely grounded in each raceway independent of raceway material.
- B. Provide a separate grounding conductor for each motor and connect at motor box. Do not use bolts securing motor box to frame or cover for grounding connectors.
- C. Size in accordance with the NEC-Article 250 and local amendments.
- D. Route conductors inside raceway.
- E. Provide a green insulated wire as grounding jumper from the ground screw to a box grounding screw and, for grounding type devices, to equipment grounding conductor.
- F. Provide a separate grounding conductor in each individual raceway for parallel feeders.
- G. Bond metallic cold water pipe systems and metallic building structure per NEC. Bond ALL metallic water pipe penetrations.
- H. Measure ground impedance in accordance with IEEE STD 81 after installation but before connecting the electrode to the remaining grounding system.
- I. Low Voltage Grounded System (600-volt or less): A low voltage grounded system is a system where the local power supply is a transformer with the transformer secondary grounded.
 - 1. Grounding system connections for a premises wired system supplied by a grounded AC service shall have a grounding electrode connector

- connected to the grounded service conductor at each service, in accordance with the NEC.
2. The grounded circuit conductor shall not be used for grounding non-current carrying parts of equipment, raceways, and other enclosures except where specifically listed and permitted by the NEC.
- J. Embedded Ground Connections
1. Underground and grounding connections embedded in concrete shall be UL listed compression type ground grid connectors.
 2. The connection shall be made in accordance with the manufacturer's instructions.
 3. The CONTRACTOR shall not conceal or cover any ground connections until the ENGINEER or authorized representative has established that every grounding connection conforms to the Contract Documents and has given the CONTRACTOR written confirmation.
- K. Ground Rods
1. Locations shall be as determined in the field.
 2. Rods forming an individual ground array shall be equal in length.
 3. Rod spacing shall be a minimum of the rod length.
- L. Shield Grounding
1. Shielded instrumentation cable shall have its shield grounded at one end only unless Shop Drawings indicate the shield will be grounded at both ends.
 2. The grounding point shall be at the control panel or otherwise at the receiving end of the signal carried by the cable.
 3. Termination of shield drain wire shall be on its own terminal screw.
 4. Terminal screws shall be jumpered together using manufactured terminal block jumpers.
 5. Connection to the ground bus shall be via a minimum green No. 12 conductor to the main ground bus for the panel.

END OF GROUNDING

SECTION 26 05 33 ELECTRICAL RACEWAY SYSTEMS

PART 1 -- GENERAL

1.01 The Requirement

- A. The CONTRACTOR shall provide electrical raceway systems, complete and in place, in accordance with the Contract Documents.
- B. In addition to NEC requirements, provide an equipment grounding conductor run with or enclosing the circuit conductors in all raceways. The equipment grounding conductor shall be one or more or a combination of the following:
 - 1. A copper, or copper-clad aluminum conductor.
 - 2. This conductor shall be solid or stranded; insulated, covered, or bare; and in the form of a wire or a bus bar of any shape.

1.02 DEFINITIONS

- A. Raceway System – raceway system consists of conduits, wireways, fittings, junction and pull boxes, supports and labels complete and ready for conductors.

PART 2 -- PRODUCTS

2.01 General

- A. Conduits, wireways, fittings, supports, labels, junction and pull boxes, and other indicated enclosures which are dedicated to the raceway system, shall comply with the requirements of this Section.

2.02 Conduit

- A. Galvanized Rigid Steel Conduit (GRC)
 - 1. Rigid steel conduit shall be mild steel, hot-dip galvanized inside and out.
 - 2. Rigid steel conduit shall be manufactured in accordance with ANSI C80.1 - Rigid Steel Conduit, Zinc Coated, and UL-6.
 - 3. Manufacturers, or Equal
 - a. LTV Steel;
 - b. Triangle;
 - c. Wheatland Tube.
 - 4. GRC shall be used in damp, wet or exterior exposed locations and in process areas.
- B. Liquidtight Flexible Conduit (LFMC)
 - 1. Liquidtight flexible conduit (LFMC) shall be constructed of a flexible galvanized metal core with a sunlight-resistant thermoplastic outer jacket.

2. LFMC shall be manufactured in accordance with UL-360 - Steel Conduits, Liquid-Tight Flexible.
 3. Manufacturers, or Equal
 4. Anaconda, "Sealtite";
 5. Electriflex, "Liquatite".
- C. Electrical Metallic Tubing (EMT)
1. Electrical metallic tubing shall be mild steel, hot-dip galvanized tubing complying with ANSI C80.3 and Fed.Spec. WWC-563 and shall be UL listed.
 2. Elbows, bends, and fittings shall be made from full weight materials complying with the above and shall be coated the same as electrical metallic tubing.
 3. EMT connectors and couplings shall be compression type with insulated throat. Set screw type not allowed. Fittings shall comply with UL514B.
 4. Electrical metallic tubing shall be manufactured by Allied Tube and Conduit Corp., Triangle PWC, Inc., or approved equal.
 5. EMT conduit may be used in dry interior, non-process locations only.

2.03 Fitting And Boxes

- A. General:
1. Pressed or stamped steel boxes shall be used with EMT.
 2. Cast and malleable iron fittings for use with metallic conduit shall be the threaded type with 5 full threads.
 3. Fittings and boxes shall have neoprene gaskets and non-magnetic stainless steel screws. All covers shall be attached by means of holes tapped into the body of the fitting. Covers for fittings attached by means of clips or clamps will not be acceptable.
 4. Boxes larger than standard cast or malleable types shall be 304 stainless steel, NEMA 4X.
 5. In outdoor areas, raceways shall be terminated in raintight hubs as manufactured by Myers, O.Z. Gedney, or equal. In other than outdoor areas, sealed locknuts and bushings shall be used.
 6. Fittings and boxes in hazardous locations shall be suitable for the Class and Division indicated or required by code.
- B. Cast Aluminum Fittings and Boxes
1. Cast aluminum boxes and fittings shall have less than 0.40 percent copper content.
 2. Manufacturers, or Equal

3. O.Z. Gedney;
 4. Appleton;
 5. Crouse-Hinds.
- C. Malleable Iron Fittings and Boxes
1. Fittings and boxes for use with galvanized steel conduit shall be of malleable iron or gray-iron alloy with zinc plating with same finish as the conduit.
 2. Manufacturers, or Equal
 - a. O.Z. Gedney;
 - b. Crouse-Hinds;
 - c. Appleton.
- D. Stainless Steel Boxes
1. Stainless steel boxes shall be NEMA 4X, Type 304.
 2. Stainless steel shall be a minimum 14-gauge thickness, with a brushed finish.
 3. Doors shall have full-length stainless steel piano hinges. Non-hinged boxes are not acceptable.
 4. Manufacturers, or Equal
 - a. Hoffman;
 - b. Rohn;
 - c. Hammond.

2.04 Cable Trays

- A. Cable trays are not to be used.

PART 3 -- EXECUTION

3.01 General

- A. All wiring shall be run in raceway unless indicated otherwise.
- B. Raceways shall be installed between equipment as indicated. Raceway systems shall be electrically and mechanically complete before conductors are installed. Bends and offsets shall be smooth and symmetrical, and shall be accomplished with tools designed for this purpose. Field bends are required on conduits up to 2". Factory elbows may be utilized on raceways over 2". All fittings and connections shall be made tight.
- C. Separate raceway systems shall be provided for:
1. Signal wiring

- 2. 120 VAC and higher wiring
- 3. Intrinsically safe wiring
- D. Where raceway routings are indicated on plan views, follow those routings to the extent possible.
- E. Routings shall be adjusted to avoid obstructions. Coordinate between trades prior to installation of raceways. Lack of such coordination shall not be justification for extra compensation, and removal and re-installation to resolve conflicts shall be by the CONTRACTOR as part of the WORK.
- F. Support rod attachment for ceiling-hung trapeze installations shall meet the seismic requirements.
- G. Exposed raceways shall be installed parallel or perpendicular to structural beams.
- H. Install expansion fittings with bonding jumpers wherever raceways cross building expansion joints.
- I. Exposed raceways shall be installed at least 1/2-inch from walls or ceilings except that at locations above finished grade where damp conditions do not prevail, exposed raceways shall be installed 1/4-inch minimum from the face of walls or ceilings by the use of clamp backs or struts.
- J. In underground facilities or NEMA 4X areas, all raceway penetrations in panels shall be bottom entry.
- K. Wherever contact with concrete or dissimilar metals can produce galvanic corrosion of equipment, suitable insulating means shall be provided to prevent such corrosion.
- L. To facilitate future expansion, boxes and fittings are to be installed when indicated on the drawings. Unused hubs are to be plugged with proprietary devices. Raceways that include future expansion provision are to be sized to accommodate any such specified wiring without exceeding the requirements of this specification.

3.02 Raceways

- A. Exposed raceway systems shall be of the type specified for the area installed as identified herein.
- B. Raceways concealed, or encased in concrete shall be PVC-Coated GRC. Conduit shall emerge from the concrete perpendicular to the surface whenever possible.
- C. Exposed conduit shall be 3/4-inch minimum trade size. Supports shall be installed at distances required by the NEC.
- D. Conduit shall not be encased in the bottom floor slab below grade.
- E. Concrete cover for conduit and fittings shall not be less than 1-1/2 inches for concrete exposed to earth or weather, or less than 3/4-inch for concrete not exposed to weather or in contact with the ground.

- F. Raceways passing through a slab, wall, or beam shall not impair significantly the strength of the construction.
- G. Raceways embedded within a slab, wall, or beam (other than those merely passing through) shall satisfy the following:
 - 1. Conduits with their fittings embedded within a column shall not displace more than 4 percent of the gross area of cross section.
 - 2. Conduits shall not be larger in outside dimension than one third the overall thickness of slab, wall, or beam in which embedded.
 - 3. Raceways shall not be spaced closer than 3 outside diameters on centers.
- H. Raceways shall be placed so that cutting, bending, or displacing reinforcement from its proper location will not be required.
- I. Threads shall be coated with a conductive lubricant before assembly.
- J. Joints shall be tight, thoroughly grounded, secure, and free of obstructions in the pipe. Conduit shall be adequately reamed to prevent damage to the wires and cables inside. Strap wrenches and vises shall be used to install conduit to prevent wrench marks on conduit. Conduit with wrench marks shall be replaced.
- K. Wherever raceways enter substructures below grade, the raceways shall be sloped to drain water away from the structure. Extreme care shall be taken to avoid pockets or depressions in raceways.
- L. Connections to motors and other equipment subject to vibration shall be made with LFMC not exceeding 36 inches in length. Equipment subject to vibration that is normally provided with wiring leads shall be provided with a cast junction box for the make-up of connections. The junction box is to be independently supported and not left free to hang from the equipment.
- M. Raceways passing through walls or floors shall have plastic sleeves. Core drilling shall be performed in accordance with Section 26 00 00.
- N. Conduit, fittings, and boxes required in hazardous classified areas shall be suitably rated for the area and shall be provided in strict accordance with NEC requirements.
- O. Empty raceways shall be tagged at both ends to indicate the final destination. Where it is not possible to tag the raceway, destination shall be identified by a durable marking on an adjacent surface. A pull-cord shall also be installed in each empty conduit. This shall apply to conduits in floors, panels, manholes, equipment, etc.
- P. Where an underground raceway enters a structure through a concrete roof or a membrane waterproofed wall or floor, core-drill the entrance and provide a Link-Seal, or equal, sealing device. The sealing device shall be utilized with PVC-coated GRC/rigid steel conduit.

- Q. Final connections to heaters, instruments, motors, limit switches, and any equipment subject to vibration shall be made with LFMC and approved fittings. Maximum length of LFMC shall be 36 inches.
- R. Connections to solenoid valves, pilot actuators, etc. shall be made with LFMC and approved fittings to a cast box with screw cover (GUA type), independently and securely supported. In no case is the device to support the cast box.

3.03 Cable Trays

- A. Cable trays are not to be used.

END OF ELECTRICAL RACEWAY SYSTEMS

SECTION 26 24 16 PANELBOARDS

PART 1 - GENERAL

1.01 The Requirement

- A. The CONTRACTOR shall provide panelboards complete and operable, in accordance with the Contract Documents.
- B. Single Manufacturer: Like products shall be the end product of one manufacturer in order to achieve standardization of appearance, operation, maintenance, spare parts, and manufacturer's services.

1.02 Contractor Submittals

- A. General: Submittals shall be in accordance with Division 01 specification requirements and Section 26 00 00 – Electrical Work, General.
- B. Shop Drawings
 - 1. Breaker layout drawings with dimensions and nameplate designations
 - 2. Component list
 - 3. Drawings of conduit entry/exit locations
 - 4. Assembly ratings including:
 - a. Trip
 - b. Interrupting
 - c. Voltage
 - d. Continuous current
 - 5. Cable terminal sizes
 - 6. Descriptive bulletins
 - 7. Product sheets
 - 8. Installation information
 - 9. Seismic certification and equipment anchorage details

PART 2 - PRODUCTS

2.01 Panelboards

- A. Panelboards shall be dead front factory assembled. Panelboards shall comply with NEMA PB-1-Panelboards, as well as the provisions of UL 50 – Safety Enclosures for Electrical Equipment and UL 67 – Safety Panelboards. Panelboards used for service equipment shall be UL labeled for such use.

Panelboards shall be rated for 120/208-volt, 3-phase operation or 120/240-volt for single phase operation as indicated.

- B. The manufacturer of the panelboard shall be the manufacturer of the major components within the assembly, including circuit breakers.
- C. Ratings
 - 1. Panelboards rated 240 VAC or less shall have short circuit ratings not less than 10,000 amps RMS symmetrical or as indicated on the plans.
 - 2. Panelboards shall be labeled with a UL ampere interrupting rating. Series ratings are not acceptable.
 - 3. Service entrance panelboards (panels connected to transfer switches or power meters) rated 240 VAC or less shall have short-circuit rating not less than 22,000 amps RMS symmetrical.
 - 4. The VFD circuit breakers shall be time-delay units, shall be UL-listed for VFD loads, and approved by the VFD manufacturer for protection of their drives.
- D. Construction
 - 1. All lighting and power distribution panels shall have copper bus bars.
 - 2. Breakers shall be one, two, or three pole as indicated, with ampere trip ratings as required by the equipment. Breakers shall be quick-make and quick-break, inverse time trip characteristics, to trip free on overload or short circuit, and to indicate trip condition by the handle position. Breakers shall be of the bolt-on type.
 - 3. The panels shall have hinged doors with combination catch and latch. The front panels shall be so arranged that when the plates are removed, the gutters, terminals and wiring will be exposed and accessible. The doors shall have inner doors within the plates to have only the breaker operating mechanism exposed when they are opened. Live conductors and terminals shall be concealed behind the plates.
 - 4. All panelboards shall be rated for the intended voltage.
 - 5. All circuit breakers shall be interchangeable and capable of being operated in any position as well as being removable from the front of the panelboard without disturbing adjacent units. No plug-in circuit breakers will be acceptable.
 - 6. Lighting and power distribution panels which are not part of a motor control center shall be constructed in accordance with Section 26 05 00 – Electrical Work, General. Panels shall have the necessary barriers, supports, and liberal wiring gutters. Trim screws shall be stainless steel. All panelboard parts of metal other than copper, aluminum, or stainless steel shall be cadmium plated. Panelboards shall be manufactured by **Square D / Schneider Electric or equal.**

7. Panelboards shall be UL listed except for special enclosures which are not available with UL listing.
8. Panelboards shall be suitable for use as service entrance as indicated or as otherwise required by the NEC.

PART 3 - EXECUTION

3.01 General

- A. All WORK of this Section shall be installed as indicated in Section 26 00 00 – Electrical Work, General.

END OF PANELBOARDS

SECTION 26 27 26 WIRING DEVICES

PART 1 - GENERAL

1.01 The requirement

- A. The CONTRACTOR shall provide all wiring devices, plates, and nameplates in accordance with the Contract Documents.
- B. The requirements of Section 26 00 00 – Electrical General Requirements apply to this Section.
- C. Single Manufacturer: Like products shall be the end product of one manufacturer in order to achieve standardization of appearance, operation, maintenance, spare parts, and manufacturer's services.

1.02 Contractor Submittals

- A. Furnish submittals in accordance with Section 01 33 00.
- B. Shop Drawings
 - 1. Complete catalog cuts of switches, receptacles, enclosures, covers, and appurtenances, marked to clearly identify proposed materials.
 - 2. Documentation showing that proposed materials comply with the requirements of NEC and UL.
 - 3. Documentation of the manufacturer's qualifications.

PART 2 - PRODUCTS

2.01 General

- A. All devices shall carry the UL label.
- B. General purpose duplex receptacles and toggle switch handles shall be brown everywhere except in finished rooms where they shall be ivory. Special purpose receptacles shall have a body color as indicated. Receptacles and switches shall conform to Federal Specifications W-C-596E and W-S-896E, respectively.

2.02 Lighting Switches

- A. Local branch switches shall be toggle type, rated at 20 amps, 120-277 VAC, and shall be General Electric Cat. No. GE-5951-1 for single pole, GE-5953-1 for 3-way and GE-5954-1 for 4-way, or similar types as manufactured by Hubbell, or equal.

2.03 General Purpose Receptacles

- A. Duplex receptacles rated 120-volt, 20 amps shall be polarized 3-wire type for use with 3-wire cord with grounded lead and 1 designated stud shall be permanently grounded to the conduit system (NEMA 5-20R). Duplex 120-volt receptacles

shall be G.E. 5362, Hubbell 5362, or equal. Simplex receptacles shall be G.E. 4102, Hubbell 4102, or equal.

- B. Ground-fault circuit interrupting receptacles (GFCI's) shall be installed at the locations indicated. GFCI's shall be rated 125-volt, 20 amps and shall be Hubbell GFTR20, or equal. Downstream GFCI protection through the use of feed-thru receptacles is not acceptable.

2.04 Special Receptacles

- A. Dryer receptacle (NEMA 14-30R), 30 amp. 250VAC, 3-pole, 4-wire. Verify requirements with installed equipment.

2.05 Enclosures And Covers

- A. Interior mounted switches and receptacles shall have steel device covers of the size required.
- B. In exterior or wet location areas, FS or FD type cast boxes shall be used, switch and receptacle covers shall be Crouse-Hinds, Hubbel or equal.
- C. Receptacles in exterior locations shall be provided with cover/enclosure marked "Suitable for Wet Locations when in use" and "UL Listed." There shall be a gasket between the enclosure and the mounting surface and between the hinged cover and mounting plate/base. The cover shall be weatherproof and of 'While-In-Use' type, specification grade, of metallic construction. TayMac or equal.

2.06 Nameplates

- A. Provide nameplates or equivalent markings on switch enclosures to indicate ON and OFF positions of each switch. ON and OFF for 3-way or 4-way switches is not acceptable. Provide receptacles for special purposes with nameplates indicating their use. Conform to requirements of Section 26 00 00 – Electrical Work, General.

PART 3 - EXECUTION

3.01 Connection

- A. Securely fasten nameplates using stainless steel screws, bolts, or rivets centered under or on the device, unless otherwise indicated.

3.02 Grounding

- A. Ground all devices, including switches and receptacles, in accordance with NEC Article 250 and Section 26 05 26 – Grounding.
- B. Ground switches and associated metal plates through switch mounting yoke, outlet box, and raceway system.

- C. Ground flush receptacles and their metal plates through positive ground connections to outlet box and grounding system. Maintain ground to each receptacle by spring-loaded grounding contact to mounting screw or by grounding jumper, each making positive connection to outlet box and grounding system at all times.

3.03 Field Testing

- A. Provide checkout, field, and functional testing of wiring devices in accordance with Section 26 00 00 – Electrical Work General Requirements.
- B. Test each receptacle for polarity and ground integrity with a standard receptacle tester.

END OF WIRING DEVICES

SECTION 26 28 16

SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.01 Summary

- A. This Section describes general requirements, products, and methods of execution relating to overcurrent protective devices approved for use on this project. Type, duty rating and characteristics, fault interrupting capability and coordination requirements shall be determined from the plans.

1.02 Related Work

- A. The work of the following Sections is related to the work of this Section. Other Sections, not referenced below, may also be related to this work. It is the Contractor's responsibility to perform all the work required by the Contract Documents.

- 1. Division 26 00 00 – Electrical General Requirements

1.03 Submittals

- A. In accordance with the requirements of Section 01 33 00, submit the following Project Data:

- 1. Descriptive literature bulletins, and catalog cuts of the equipment.
 - 2. Materials of construction.
 - 3. Complete wiring diagrams.
 - 4. Complete installation instructions, with points of electrical connection requirements clearly shown.
 - 5. Performance curves.

1.04 Quality Assurance

- A. Devices shall be the latest approved design as manufactured by a nationally recognized manufacturer and in conformity with applicable standards and UL listed.

PART 2 - PRODUCTS

2.01 Molded Case Circuit Breakers

- A. Molded case circuit breakers shall be suitable for individual as well as panelboard mounting. They shall be bolt-on type, unless "plug-on" type specifically allowed.
- B. The breakers shall meet NEMA and/or UL specifications as applicable to frame and size, standard rating and interrupting capability. Breakers installed in panelboards shall have short circuit interrupt ratings that match those of the panelboard.
- C. The breakers shall be one-, two-, or three-pole as scheduled, operate manually for normal ON-OFF switching and automatically under overload and short circuit conditions.

- D. Operating handle shall open and close all poles simultaneously on a multi-pole breaker. Operating mechanism shall be trip-free so that contacts cannot be held closed against abnormal overcurrent or short circuit condition.

2.02 Acceptable Manufacturer's

- A. Square D / Schneider Electric
- B. Or approved equal

PART 3 - EXECUTION

3.01 Installation

- A. Size devices as required by the load being served or as shown on the drawings.

END OF SWITCHES AND CIRCUIT BREAKERS

SECTION 26 36 05 HEAVY-DUTY SAFETY SWITCHES

PART 1 - GENERAL

1.01 The Requirement

- A. Furnish and install heavy-duty, double-throw safety switches for manual transfer of loads between alternate sources of supply and single-throw safety switches for motor disconnect.

1.02 Codes And Standards

- A. The heavy-duty safety switches shall conform to the requirements of:
 - 1. UL 98 – Enclosed Switches

1.03 Submittals

- A. Provide outline drawings with dimensions, and equipment ratings for voltage, amperage, and short circuit in accordance with Section 01 33 00 and Section 26 00 00 – Electrical Work, General.

PART 2 - PRODUCTS

2.01 Safety Switch

- A. The safety switches used as transfer switches shall be heavy-duty, manually operated, single-throw or double-throw switches, full load make or break rated. Switches shall include a normally open contact that is made in the A and B position.
- B. Switch shall be UL listed for use as service equipment and is to be labeled for this application.
- C. Switch shall have switch blades which are visible when the switch is OFF and the cover is open.
- D. Lugs shall be front removable and UL listed for aluminum or copper.
- E. All current carrying parts shall be plated to resist corrosion.
- F. The UL listed short circuit current rating of the double throw switch shall be suitable for the available short-circuit current at the location installed.
- G. Provisions for padlocking the switch in the OFF position shall be provided.

2.02 Enclosure

- A. The safety switch shall be furnished in a NEMA Type 1 enclosure with gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated galvanized steel.

- B. The enclosure shall be supplied with a metal nameplate which includes ON-OFF-ON markings.

2.03 Manufacturers

- A. Safety switches shall be manufactured by Square D, Allen-Bradley, or equal.

PART 3 - EXECUTION

3.01 Installation

- A. The safety switch shall be installed in accordance with the Manufacturer's requirements and recommendations.

END OF HEAVY-DUTY SAFETY SWITCHES

SECTION 26 50 00 LIGHTING

PART 1 - GENERAL

1.01 The Requirement

- A. The CONTRACTOR shall provide lighting fixtures, supports, lamps, and accessories, complete and operable, in accordance with the Contract Documents.

1.02 Contractor Submittals

- A. If the CONTRACTOR proposes to install equivalent equipment to that suggested, then he shall furnish the following product information in accordance with Division 01.

1. Interior luminaires

- a. Catalog data sheets and pictures.
- b. Luminaire finish and metal gauge.
- c. Lens material, pattern, and thickness.
- d. Candle power distribution curves in two or more planes.
- e. Candle power chart 0 to 90 degrees.
- f. Lumen output chart.
- g. Average maximum brightness data in foot lamberts.
- h. Coefficients of utilization for zonal cavity calculations.
- i. Mounting or suspension details.
- j. Heat exchange and air handling data.

2. Exterior luminaires

- a. Catalog data sheets and pictures.
- b. Luminaire finish and metal gauge.
- c. Lens material, pattern, and thickness.
- d. IES lighting classification and isolux diagram.
- e. Fastening details to wall or pole.
- f. Ballast type, location, and method of fastening.
- g. For light poles, submit wind loading, complete dimensions, and finish.

3. Lamps

- a. Voltages.
- b. Colors.

- c. Approximate life (in hours).
 - d. Approximate initial lumens.
 - e. Lumen maintenance curve.
 - f. Lamp type and base.
- 4. Ballasts/Drivers
 - a. Type.
 - b. Wiring diagram
 - c. Nominal watts and input watts.
 - d. Input voltage and power factor.
 - e. Starting current, line current, and restrike current values.
 - f. Sound rating.
 - g. Temperature rating.
 - h. Efficiency ratings.
 - i. Low temperature characteristics.
 - j. Emergency ballasts/drivers rating and capacity data.

PART 2 - PRODUCTS

2.01 Fixtures - General

- A. Luminaires: Specific requirements relative to execution of WORK of this Section are located in the Luminaire Schedule on Contract Drawings.
- B. All fixtures shall be pre-wired with leads of 18-AWG, minimum, for connection to building circuits.

2.02 Exterior Fixtures

- A. Exterior fixtures in combination with their mounting pole and bracket shall be capable of withstanding 100 MPH winds without damage. Exterior fixtures shall have corrosion-resistant hardware and hinged doors or lens retainer. Fixtures specified to be furnished with integral photo-electrical control shall be of the fixture manufacturer's standard design.

2.03 Interior Fixtures

- A. Interior fixtures without diffusers shall be furnished with end plates. Where diffusers are required, they shall be of high molecular strength acrylic. Minimum thickness of the acrylic shall be 0.125 inches for all diffusers, except that those on 4-foot square fixtures shall be 0.187 inches thick.
- B. Interior fixtures within the chemical room shall be suitable for installation in this area.

C. Emergency Exit Signs

1. Internally illuminated.
2. Universal mounting type.
3. Internal 6-volt nickel cadmium battery, 90 minutes capacity to emergency lamps.
4. Two-rate regulated battery charger to minimize energy consumption. Filtered charger output to minimize voltage ripple and extend battery life. Thermal protection and current-limiting charger circuitry to prevent overheating and charger failure.
5. 19,000 hours expected lamp life.
6. Press to test button.
7. Directional arrows.
8. Red letters on a white panel, 6 inches high.

2.04 Photo-Electric Cells

- A. Photoelectric cells for control of multiple fixtures shall be self-contained, weatherproof type, rated for 1800 va 120-volt, single pole, single throw, and shall be provided with time-delay features. Photoelectric cell shall be **Tork Model 2101**, or equal.

2.05 Light Fixture Control Relays

- A. Relays for light fixtures control shall be mechanically held. Such relays shall be based-mounted, single-purpose units, i.e., not attachments to a multi-purpose solenoid operation.
- B. If not indicated otherwise, coil voltage shall be 115 VAC with contacts rated at 20 amps. Relays shall be **ASCO Series 166, Zenith Series MSC**, or equal.

2.06 Fixture Types

- A. Specific requirements are located in the Lighting Fixture Schedule on the Contract Drawings.

PART 3 - EXECUTION

3.01 Luminaires

- A. Install in accordance with manufacturer's recommendations.
- B. Provide necessary hangers, pendants, and canopies.
- C. Provide additional ceiling bracing, hanger supports, and other structural reinforcements to building required to safely mount.
- D. Install plumb and level.

- E. Locate luminaires to avoid both conflict with other building systems and blockage of luminaire light output.

3.02 Cleaning Following Installation

- A. Remove all labels and other markings, except UL listing mark.
- B. Wipe luminaires inside and out to remove construction dust.
- C. Clean luminaire plastic lenses with antistatic cleaners only.
- D. Touch up all painted surfaces of luminaires and poles with matching paint ordered from manufacturer.
- E. Replace all defective light sources at time of Substantial Completion.

END OF LIGHTING

SECTION 31 20 00 EARTH MOVING

PART 1 - GENERAL

1.01 Summary

- A. This section covers the furnishing of materials, labor, equipment, and supervision required to complete the site earthwork construction including roadway, walkway, parking lot, and building excavation, fill, backfill, site grading, and drainage as shown on the contract Drawings.

1.02 Testing

- A. Where compaction requirements are specified, the maximum soil density shall be determined by one of the laboratory procedures listed below. The particle size distribution of the soil dictates which laboratory procedure should be used.
1. Soils meeting the following gradation requirement and having cohesionless, free-draining characteristics should be tested in accordance with ASTM D 4253 "Maximum Index Density and Unit Weight of Soils Using a Vibratory Table."

<u>U.S. Std. Sieve Size</u>	<u>Percent Passing by Weight</u>
3"	100*
1-1/2"	70-100
No. 200	0-15

2. Soils which do not meet the gradation requirement presented in Item 1 above and which do meet the following gradation requirement should be tested in accordance with ASTM D 1557 "Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lb/ft³ (2,700 kN-m/m³)]."

The oversize fraction (retained on the No. 4, three-eighth inch, or three-fourth inch sieve, as appropriate) should not be used in performing the D 1557 compaction test. The modified maximum dry unit weight of soils that contain more than five percent oversize should be corrected in accordance with ASTM D 4718, "Correction of Unit Weight and Water Content for Soils Containing Oversize Particles."

<u>U.S. Std. Sieve Size</u>	<u>Cumulative Percent Passing by Weight</u>
3"	100*
3/4"	70-100

3. Soils that do not meet the gradation requirements presented in Items 1 and 2 above should be tested in accordance with one of the methods listed above that have been modified with the concurrence of the project geotechnical engineer.

* The field sample may contain up to 10% cobbles, which should be discarded prior to testing.

- B. The in-place soil density shall be determined in accordance with:

ASTM D 6938 In-place Density and Water Content of Soil and Soil Aggregate by Nuclear Methods (Shallow Depth).

- C. In-place density tests shall be taken on each lift of fill or backfill at the rate of one test per 5,000 square feet of compacted work area. Failing test areas shall be recompact and retested until the compaction requirements are met. The Contractor shall perform a new gradation and hydrometer test for each 2,000 cubic yards of furnished material and each time the furnished material changes from that which was previously approved.

1.03 Submittals

- A. Contractor shall submit a gradation test in accordance with ASTM D 422 on each type and source of material used in fills and backfills. If material is to be non-frost susceptible (NFS), hydrometer tests shall be performed in accordance with ASTM D 422.

- B. Contractor shall submit a circuit and wiring diagram for each thaw wire installation.

1.04 Definitions

- A. NFS Material: NFS material is sand, gravel, crushed stone, or mixtures thereof, which contains no more than three percent particles finer than 0.02 mm by weight.
- B. Structural Fill: Structural fill is defined as load-bearing fill placed under footings, building foundations, structural slabs, roads, and parking areas. All structural fill should consist of NFS material and contain no lumps, frozen material, organic matter, or other deleterious matter. Structural fill shall meet the following gradation requirements. Other fill material, which does not meet this gradation requirement, may be acceptable for use. However, the gradation of such material should be evaluated by the project geotechnical engineer prior to its use.

<u>U.S. Std. Sieve Size</u>	<u>Cumulative Percent Passing by Weight</u>
3"	100*
1-1/2"	70-100
3/4"	30-100
1/2"	25-100
#4	20-49
#40	0-25
#200	0-6
0.02mm	0-3

* The field sample may contain up to 10% cobbles, which should be discarded prior to testing.

- C. D-1 Base Course: NFS, unfrozen, inorganic soils meeting the following gradation requirements for the minus three-inch fraction.

<u>U.S. Std. Sieve Size</u>	<u>Cumulative Percent Passing by Weight</u>
1"	100
3/4"	70-100
3/8"	50-80
No. 4	35-65
No. 8	20-50
No. 50	6-30
No. 200	0-6

- D. Classified Material: NFS, unfrozen, inorganic soils meeting the following gradation requirements for the minus three-inch fraction.

<u>Sieve Size</u>	<u>Cumulative Percent Passing by Weight</u>
3"	100*
1-1/2"	70-100
3/4"	30-100
1/2"	25-100
No. 4	20-49
No. 40	0-25
No. 200	0-6
0.02 mm	0-3

- E. Pipe Bedding Material: The coarse aggregate material conforming to the requirements specified below shall have a percentage of wear not to exceed thirty (30) after five hundred (500) revolutions, as determined by the current requirements of ASTM C-131.

<u>U.S. Std. Sieve Size</u>	<u>Cumulative Percent Passing by Weight</u>
2"	100
1/2"	40-100
#4	20-75
#10	12-60
#40	2-30
#200	0-6

In addition to the grading limits listed above, the fraction of material passing the #200 sieve shall not be greater than twenty (20%) percent of that fraction passing the #4 sieve. The bedding material shall not include mechanically fractured materials.

* The field sample may contain up to 10% cobbles, which should be discarded prior to testing.

- F. Unclassified Material: Inorganic soils free of trash, peat, volcanic ash, debris, or frozen clods, which are capable of being satisfactorily compacted as required by the plans and these specifications.
- G. Unsuitable Material: Soil materials that do not qualify as “classified” or “unclassified” materials.
- H. General Excavation: Any excavation of any type of material, including rock and frozen material, within the limits of excavation as shown on the Drawings or called for in the specifications.
- I. Over-Excavation: Any excavation beyond limits of the contract that has been done without the written authorization of the Owner’s Representative.
- J. Subgrade: The surface upon which classified or unclassified material is placed.
- K. Area Grading: Area grading consists of the excavation and fill work along the perimeter of the site necessary for a smooth transition from the design site grades to the grade(s) of the adjacent properties. This work is also commonly called “site grading” or “overlot grading.”
- L. Work Area: For purposes of determining the number of required in-place density tests, work area is defined as the location where fill is being actively placed at any one time. The work area could be the entire site or a small fraction of the site depending on how the earthwork is performed.

PART 2 - PRODUCTS

2.01 Material Source and Handling

- A. When the quantity of classified and unclassified soils required for the work exceeds that available from excavated materials, the additional material shall be from Contractor-furnished borrow areas. The Contractor shall locate, obtain, develop, and process classified and unclassified materials to complete the requirements of work.
 - 1. No soils materials that have ever been contaminated with petroleum or hazardous substances shall be *incorporated* into the work without prior written approval of the Owner. The Contractor shall furnish evidence that the borrow source(s) has been evaluated for the presence of petroleum or hazardous substances as defined in EPA Publication 9345.00-01A, *Guidance for Performing Preliminary Assessments Under CERCLA*, dated September 1991. An Abbreviated Report of Preliminary Assessment, as defined in EPA Publication 9345.0-01A, shall be submitted to the Owner for each proposed borrow site. The report shall identify any petroleum or hazardous substance, currently or previously at the site, that presents a potential threat to the environment whether or not a release has occurred. Where a release of hazardous substances has occurred, the use of the borrow source will not be allowed. The Preliminary Assessment shall be performed independent of the Contractor, under the direct supervision of a person actively practicing environmental science or engineering, geology, hydrology or a related environmental field and having a minimum of three years experience in performing Preliminary Assessments. The qualifications of the independent person performing the Preliminary Assessment shall be included with the report.

The Preliminary Assessment Report shall be submitted a minimum 30 days prior to use of the borrow material in the work. The Owner reserves the right to independently sample and test the borrow material for conformance with this specification prior to delivery to the site and during placement of the borrow material at the site.

2. Borrow material previously contaminated with a petroleum substance that has been processed or recycled to remove the petroleum contamination may be used only with written approval of the Owner. A request for approval to use processed or recycled material shall be submitted a minimum 30 days prior to use of the material in the work and shall include a detailed description of the history of the material, analytical results of sampling of the material conducted before and after processing or recycling, and a Quality Control Plan describing a program to ensure that the material is transported and placed on the site in an environmentally safe manner. The Quality Control Plan shall include the location(s) on the site the material will be used, the quantity of material proposed to be used at each location, any mixing of the processed or recycled material that may occur, and any safeguard used to protect the environment from being impacted by the material. The request to use processed or recycled material must also show the economic benefit to the Owner for allowing the use of the processed or recycled material.
- B. When the soils into which the excavation will penetrate and/or when the backfill soils are sensitive to erosion, sloughing under seepage forces, softening during soaking, and/or repeated loading of heavy equipment, the Contractor shall take all necessary steps to protect the work at no expense to the Owner. This may include, but is not limited to:
1. Sloping the excavation to drain and/or dewatering from inside the excavation with sumps and/or pumps or from outside the excavation with well-points or other means;
 2. Limiting construction traffic to designated and maintained construction roads and placing additional temporary fill as necessary to support the traffic loads;
 3. Developing alternate access routes; and,
 4. Excavating with a backhoe with a smooth blade from outside the excavation.
- C. If the subgrade or backfill soils are disturbed by surface runoff, ponding, seepage, and/or construction traffic, the disturbed soils shall be regraded and densified to the density requirements specified herein or completely removed and replaced with classified materials compacted to the density requirements specified herein. The Contractor shall perform corrective work at no expense to the Owner.

PART 3 - EXECUTION

3.01 Construction Staking

- A. The Contractor shall furnish the following surveys for construction staking:

1. Grade stakes shall be placed to show cuts or fills to finish grade. These may be preserved or referenced by the Contractor to serve for both excavation and subsequent backfill operations.
2. Areas to be excavated under a cubic yard pay unit shall be cross-sectioned after clearing and before any earthwork has commenced. Large areas shall be sectioned on a 50-foot or closer grid and streets and parking lots shall be sectioned at 50-foot stations or closer. After each predetermined area of earthwork is excavated to subgrade or to bottom of organics, the area shall be cross-sectioned again to determine excavation quantities. When possible, measurements shall be made on the same lines or grids used in the previous cross-section. The work shall be scheduled to allow sufficient time for the survey crew to take measurements before additional earthwork takes place.
3. If utilities such as storm drains, sanitary sewers, and water systems are to be constructed as part of the project, areas to be excavated shall be cross-sectioned after utilities are installed and trenches backfilled and compacted to subgrade elevation. After each predetermined area of earthwork is excavated to subgrade or bottom of organics, the area shall be cross-sectioned again to determine excavation quantities.

3.02 Excavation

A. General

1. Excavation consists of the removal and reuse or disposal of all materials encountered to obtain the required subgrade elevations and to remove organics.
2. Classified and unclassified excavated materials shall not be removed from the site unless they are surplus to the requirements of the work and then only with the written approval of the Owner's Representative. Excess material not incorporated in the work and unsuitable material shall be transported to the Contractor's off-site disposal area. The Drawings indicate the extent of the excavation required.
3. The Contractor shall conform to the elevations and dimensions shown on the Drawings, within a tolerance of 0.10 feet for roads, parking areas, walkways, and 0.05 for building areas. Over excavation for the purpose of obtaining materials for use elsewhere in the work is not permitted without written approval.
4. The excavation shall be shaped to drain and shall be maintained in a dry condition, free of puddles or holes where water may accumulate. The Contractor shall plan his operation in a sequence that will provide drainage at all times. Any areas that cannot be so drained shall be kept free of standing water by pumping, if necessary.
5. Excavation shall be performed in a manner that will not endanger adjacent structures or improvements.
6. If hazardous materials of any kind are encountered in the excavation, Contractor shall immediately notify the Owner's Representative and stop excavation until the Owner has determined how to deal with it.

7. When permanently frozen soils are encountered, place fill or backfill materials in a timely manner, as directed, to minimize degradation of the foundation material. Do not place fill or backfill over seasonally frozen ground unless authorized in writing.
8. Thaw and drain frozen material deemed acceptable for fill before placing in the embankment. Frozen cuts may require stage excavation: remove thawed material and allow the cut to thaw while work continues on some other portions of the project. After the material in the cut has thawed to a sufficient depth, remove the thawed material. Repeat this operation until all frozen material is removed or the cut is excavated to grade.

B. Roadways, Parking Areas, Walkways

1. Excavation shall be carried to the subgrade elevations required for the placement of classified material and to such additional depths as required to remove all unsuitable material as directed by the Engineer.

C. Over Excavation

1. Over excavation shall be restored by the Contractor by backfilling with classified material and compacting to 95 percent of the maximum density at no cost to the Owner.

D. Stability of Sides

1. The Contractor shall slope the sides of excavations to the angle required for safety or shore and brace where sloping is not possible either because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in a safe condition until completion of backfilling by scaling, benching, shelving, or bracing. Take precautions to prevent slides or cave-ins when excavations are made in locations adjacent to backfilled excavations and when sides of excavations are subjected to vibrations from vehicular traffic or the operation of machinery or any other source. In all cases the sides of all excavations shall be constructed to satisfy the requirements set forth in the local, state, and federal safety regulations regarding shoring and slope angle.

E. Cold Weather Protection

1. The subgrade must be kept from freezing from the time earthwork begins until final acceptance of the work, unless specified otherwise in writing by the Owner's Representative.
2. All subgrade that is allowed to freeze shall be thawed and redensified to 95 percent of the maximum density by the Contractor at no expense to the Owner, unless specified otherwise in writing by the Owner's Representative.

3.03 Fill and Backfill

A. General

1. Fill and backfill consists of the placement of classified and/or unclassified material in layers to the required elevations.

2. All excavated materials meeting the requirements for classified and unclassified materials shall be incorporated into the work unless they are surplus to the requirements of the work and the Owner's Representative has given written approval not to use the material.
3. The Contractor shall keep all fills and backfill well shaped, drained, and maintained.

B. Roads, Parking Areas, Walkways

1. Fills and backfills shall be constructed of classified materials in all areas except as indicated on the Project Drawings.
2. The top six inches shall have a maximum particle size of 3 inches.
3. Fills and backfills shall be constructed in lifts of 12-inch maximum thickness, [six-inch maximum thickness if hand-operated compactors are used] and compacted to not less than 95 percent of maximum density. The finished surface of fills and backfills shall be smooth with no soft or yielding areas and shall be graded to not more than 0.05 feet above or below the design grade.
4. The Contractor shall backfill excavations as promptly as the work permits, but not until completion of the following:
 - a. Owner's acceptance of construction below finish grade such as culverts, subdrains, and other utilities.
 - b. Inspection, testing, approval, and recording locations of underground utilities.
 - c. Removal of shoring and bracing and backfilling of any resulting voids with satisfactory materials. Cut off temporary sheet piling driven below the bottom of structures and remove in a manner to prevent settlement of the structure or utilities; or leave in-place if required.
 - d. Removal of trash and debris.
 - e. Placement of permanent or temporary horizontal bracing on earth retaining walls.

C. Cold Weather Protection

1. The fill and backfill must be kept from freezing from the time earthwork begins until final acceptance of the work, unless specified otherwise in writing by the Owner's Representative.
2. All fill and backfill which is allowed to freeze shall be thawed and redensified to 95 percent of the maximum density by the Contractor at no expense to the Owner, unless specified otherwise in writing by the Owner's Representative.

3.04 Area Grading

- A. The top six inches shall have a maximum particle size of six inches. The fill material shall be placed in lifts of [12-inch maximum thickness][six-inch maximum thickness if hand-operated compactors are used] and shall be compacted to not less than 90

percent of maximum density. The finished surface of the fill shall be smooth with no soft or yielding areas and shall be graded to not more than 0.10 feet above or below the design finish grade. In those areas where the grade at the limit of grading is above or below the elevation of the adjoining natural surface, the design finish grade shall be maintained to the limit of grading and the edge of the cut or fill feathered off to make a smooth transition to the adjoining natural surface.

3.05 Measurement and Payment

- A. All work included under this section is incidental and shall not be measured separately.

END OF EARTH MOVING

SECTION 31 62 16
HELICAL ANCHORS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Helical piers shall be screw anchors manufactured from steel pipe specifically for foundation applications, with helical bearing plates welded to them, installed by being advanced into the soil using a rotating motion, and are used to resist applied axial (compression or tension), lateral loading and overturning moments from structures, within designed settlement, uplift, or deformation tolerances. All materials, labor equipment and tools necessary to furnish and install the helical piers shall be provided by the Contractor.
- B. Contractor shall be prepared to handle on-site soil conditions, including but not limited to organic silt, silt, and sand, in all of which permafrost can be present throughout the Project area. Contractor shall perform such work as necessary to accommodate soil conditions. No additional payment shall be allowed for such work.

1.02 SUBMITTALS

- A. Contractor shall submit a helical pier installation plan detailing equipment and methodology for installation of the helical piers.
- B. Pier installation torque measurement and calibration records shall be submitted to Engineer within 24 hours of each completed piers.

PART 2 - PRODUCTS

2.01 ROUND PIPE SHAFT HELICAL ANCHOR ASSEMBLIES

- A. Anchor Length:
 - 1. The minimum installed length of the pier from the helix to top of helical pier shall be such that the required installation depth is achieved and such that the tops of the installed helical piers extend to the height above the ground surface as shown in the Plans for the specific application.
 - 2. Helical piers leads shall be a minimum 7 feet long from the pointed to the end of the upper coupling with the upper helix a minimum of 3.5 feet from the upper coupling.
 - 3. Helical extensions shall be a minimum of 7 feet long.
- B. Piling Capacity: Helical piers shall provide a minimum axial load-carrying capacity of 45,000 pounds each.
- C. Helical Pier Shaft:
 - 1. Cold formed, welded, or seamless steel pipe conforming to ASTM A53.
 - 2. Minimum Yield Strength: 35 ksi
 - 3. Shaft end connections between sections shall be via square shaped coupling weld to each end.
- D. Helices:
 - 1. Helices shall have a minimum thickness of 3/8-inch and provide a 3-inch pitch.

2. Steel shall conform to ASTM A1018 with 55 ksi minimum yield strength.
 3. Helices shall be welded to pipe sections using a continuous fillet weld on both sides of the helix-to-pipe connection. Leading edge of helices shall be sharpened to minimize soil disturbance during installation.
 4. For dense or frozen soils, the contractor can use a reduced area helix plate on the lead section such as a V-Style plate manufactured by Supportworks or a Seashell plate manufactured by Chance/Atlas Pier.
- E. Connection Hardware:
1. Bolts: ASTM A325 Grade L-7 or approved equal.
 2. Nuts: ASTM A563
- F. Finish
1. All helical pier anchor surfaces (exterior, interior of pipe, etc.), adaptors, extensions, couplings, fittings, bolts, attachment assemblies and all other appurtenances shall be hot-dipped galvanized in accordance with ASTM A123, and ASTM A153.
 2. No substitutions of protective coating shall be considered.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Installation Damage: Helical pier that are damaged as a result of exceeding the maximum allowable torque rating during installation or helical pile that is suspected of being damaged as a result of poor workmanship or improper installation techniques shall be removed and replaced at Contractor's expense. Contractor shall repair damage to ground surfaces and vegetation caused as a result of construction activities.
- B. Equipment:
1. Helical pier installation equipment shall be of a rotary type, either truck or track mounted, with forward and reverse capability, electric or hydraulic powered and equipped with a torque monitoring device able to provide installation torque reading on a continuous basis.
 2. The equipment shall be capable of positioning and maintaining the helical pier at the designed angle, with minimum drive equipment rating to equal or exceed the maximum torque rating of the specified helical pile.
 3. All the required equipment shall be supplied by Contractor.
- C. Measure installation torque using torque monitoring instrumentation as part of the installation unit or as a separate in-line device. Calibrated torque monitoring data shall be submitted for review by Engineer. Torque shall be monitored and logged during the entire installation for each helical pier at increments outlined below in "Pier Installation Records." Engineer will not be on-site for all installations and will require installation records.
- D. Position helical piers as indicated in the Plans. Establish the proper alignment at station of installation.

-
- E. Helical pier shall be constructed and installed round, plumb, and true to the required location. Helical piers shall be installed in a manner that does not destroy the soil strength characteristics as they are installed. The helices shall be advanced so that the helix screws or threads into the soil matrix rather than augering through the soil matrix, which would result in heavily damaged auger cuttings around the helix.
 - F. Helical piers shall be held securely and accurately in position while installing to ensure they are within specified tolerances. Safe and secure connections shall be provided to helical piles and extensions at all times.
 - G. Sufficient downward pressure shall be applied as to advance helical piers. Under no circumstances shall the helical pier be pushed directly into the soil.
 - H. Installation shall be executed in a smooth, continuous threading manner, at the rate of advancement equal to one pitch per revolution as to minimize disturbance to the soil during installation. The maximum rate of rotation shall not exceed 20 revolutions per minute.
 - I. Engineer shall be notified in the event that any obstructions are encountered during installation. The encountered obstructions shall be removed, or the helical and adjacent helical piers relocated as directed by the Engineer.
 - J. Installation Tolerances of Helical Piers:
 - 1. Maximum Variation from True Location at Ground Surface: ½-inch after installation is completed, non-cumulative.
 - 2. Maximum Variation from Plumb: ½-inch per 10 feet, non-cumulative.
 - 3. Pier caps shall be installed level.
 - 4. In final position, helical piling joints and any other protruding features of the pier assembly shall not be located within the seasonal active layer of the ground.
 - 5. Required Installation Depth: The horizontal centerline of the lower helix of each pier shall be embedded to the minimum depths below the existing ground surface as shown in the Plans.
 - 6. Contractor may need to pilot drill prior to pile installation if permafrost is encountered before required embedment is reached. Hole cut by pilot drill shall not exceed the shaft diameter of the helical pile.
 - 7. Based on torque readings provided by Contractor, Engineer will provide direction to Contractor in the event that sufficient installation torque is not attained at the design embedment depth. Engineer may request field load testing or deeper helical pile installation on any helical pile which, if required, will be negotiated as separate cost items with the Contractor.
 - K. At no additional cost to Owner, Contractor shall withdraw damaged or defective piles and piles driven outside of the specified tolerances, install new piles within driving tolerances and fill holes left by withdrawn piles as directed by Engineer. Engineer reserves the right to accept or reject questionable installation of helical piles.
 - L. Pier Installation Records: Maintain accurate installation records of each pier, compiled and attested to by a qualified professional engineer. Include the following data:
 - 1. Project name and number.
-

2. Name of Contractor.
 3. Pier dimensions.
 4. Pier identification number.
 5. Date and time of installation.
 6. Weather conditions and ambient air temperature.
 7. Depth of pre-drilling, auger diameter, and if other methods such as heat are used.
 8. Final pier embedment depth.
 9. Installation torque measurements shall be recorded for each 3 feet of each helical pier embedment from the ground surface. At deepest 3-feet of embedment, torque measurements shall be recorded for every 1-foot of embedment depth.
- M. Helical piers installed with a separation greater than ½-inch but less than 1-inch between the riser shaft and the soil require backfilling and densification with a sand and potable water slurry. The slurry shall be a thawed mineral sand mixed with potable water to a fully saturated state. The slurry shall be placed in fully thawed state in the annular space in nominal 12-inch lifts and hand densified. Hand densification shall be conducted until the slurry no longer settles within the annular space and the slurry is dense and firm. Hand densification may include rod tamping, vibrating the helical anchor riser shaft, ground surface vibration adjacent to the helical pier riser or other means developed by the Contractor. The Engineer shall approve the slurry, slurry placement, and densification methods proposed by the Contractor prior to use.

3.02 QUALITY ASSURANCE

- A. All helical pier installations are subject to the Approval of the Engineer. Contractor shall use a Differential Pressure Torque Indicator, Mechanical Dial Torque Indicator, Shear Pin Torque Limiter, or another Approved device for measuring torque. Owner's Representative will not be on-site for all installations and shall approve reports based on the torque recorded by the approved device.
- B. Contractor shall prepare a form for each installation which shows depth and torque. Spreadsheet shall show each installation meets the specifications and details. Each installation will be reviewed and Approved by the Engineer. At the request of the Contractor, the Engineer may furnish a pre-approved form.

3.03 CLEAN UP

- A. The construction site shall be restored to its original condition. All underbrush or trees damaged during the drilling operation shall be completely removed and properly disposed of. All drill tailings shall be removed from the site or buried, and the surface profile shall be restored to its original grade.

END OF SECTION 31 62 16

SECTION 32 31 13 CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 Description

- A. This section covers all plant, labor, equipment and material, and performing all operations in connection with the construction of chain link fencing as shown on the Drawings and covered by this Specification.

1.02 Submittals

- A. The Contractor shall submit for approval manufacturer's specifications, drawings, and recommendations for all materials incorporated into the project. The submittal shall include manufacturer's published data, engineering data, letter of certification or certified test laboratory report indicating that each material complies with specified standards and other requirements. Shop drawings shall be submitted for all fabricated work.

PART 2 - PRODUCTS

2.01 Fencing Materials

- A. Materials used in the construction of chain link fencing shall be in accordance with the requirements of "Chain Link Fence Manufacturers Institute", as described below:
 - 1. General: Posts, gate frames, braces, rails, stretcher bars, and truss rods shall be of steel; reinforcing wires shall be of high carbon steel; and gate hinges, post caps, barbed wire supporting arms, stretcher bar bands, and other parts shall be of steel, malleable iron, ductile iron or equal except ties and clips may be aluminum.
 - a. Workmanship shall be good quality. Parts shall be formed accurately to dimension. Zinc-coated surfaces shall be free from imperfectly coated spots, bruised or scaled coating, drops of zinc, and sal ammoniac spots.
 - b. Posts, gate frames, rails, and braces shall conform to dimensions and weights shown in Table No. 1.
 - 2. Zinc Coating: All steel and iron parts shall be zinc-coated after fabrication, using zinc grade "E" in accordance with Federal Specification QQ-7-351. Weight of zinc coating per square foot of actual surface shall average not less than 1.2 ounces and no individual specimen shall show less than 1.0 ounce.
 - 3. Gates: Shall be swing, sliding or truss cantilever, single or double, as specified complete with latches, stops, keepers and hinges, roller assemblies and roller tracks with provisions for three strands of barbed wire above is specified.
 - a. Gate frames shall be constructed of tubular members, such as to provide a rigid frame of ample strength free from sag and twist.
 - b. Fabric shall be zinc coated by hot-dip process after fabrication. Coating shall be commercially uniform. It shall not have less than 1.2 ounces per square foot when tested. The fabric shall be attached securely to the gate frame at intervals not exceeding 15 inches. Fabric shall be nine-gauge two-inch mesh.

**Table No. 1: Dimensions and Weights
Posts-Rails-Braces**

Use	Section	Outside Diameter or Dimensions, Nominal (inches)	Weight Per Foot, Nominal (pounds)
End, corner, and pull posts (tubular) for fabric heights:			
less than 6 feet	Round	2.375	3.65
6 feet or over	Round	2.875	5.79
Gate posts for nominal width of gate, single, or one leaf of double:			
4 feet and less	Round	2.875	5.79
4 feet to 10 feet	Round	4.000	9.10
10 feet to 15 feet	Round	6.625	18.97
over 15 feet	Round	8.625	24.70
Gates - exterior frames for fabric heights:			
6 feet and less	Round	1.660	1.806
over 6 feet	Round	1.900	2.805
Interior bracing (tubular) for fabric heights:			
less than 6 feet	Round	1.315	1.055
6 feet and over	Round	1.660	1.806
Rails and post braces (tubular):	Round	1.660	1.806
Intermediate posts for fabric heights:			
less than 6 feet (tubular)	Round	1.900	2.72
6 feet and over (tubular)	Round	2.375	3.65

- c. Hinges shall be heavy pattern, of adequate strength for gate, with large bearing surfaces for clamping them in position. They shall not twist or turn under the action of the gate. Gates shall be capable of being opened and closed by one person.
- d. Latches, stops, and keepers shall be provided on all gates. Latches shall be the ice-free type shown on the Drawings, except for single gates with openings less than 10-feet wide, a forked latch may be provided. Latches shall be arranged for locking, keepers shall consist of a mechanical device for securing the free end of gate when in the full open position.
4. Posts shall be of the lengths specified and shall be tubular.
5. Post braces shall be provided for each gate, corner, pull, and end post for use with fabric five feet or more in height, and consist of a round tubular brace extending to each adjacent line post at mid-height of the fabric, and a truss consisting of a rod not less than three-eighths inch nominal diameter from line post back to gate, corner, pull, or end post, with a turnbuckle or other equivalent provision for adjustment.
6. Post tops shall consist of ornamental tops. Tops shall be provided with a hole suitable for through passage of the top rail. Post tops shall fit over the outside of the posts and shall exclude moisture.
7. Top rails shall be round (tubular), in lengths not less than 18 feet and fitted with couplings for connecting lengths into a continuous run. Couplings shall not be less than six inches long, provide a substantial connection, and shall allow for expansion and contraction of rail.

8. Tension bars shall not be less than three-sixteenths of an inch by three-fourths inch and of lengths one-inch less than the full heights of the fabric with which they are to be used. The tension bars shall be arranged for attaching the fabric to all terminal posts by threading through the fabric, by bands, or by other positive mechanical means. One tension bar shall be provided for each gate, and post, and two for each corner and pull post.
9. Ties or clips of adequate strength shall be provided in sufficient number for attaching the fabric to all line posts at intervals not exceeding 15 inches.
10. Bands or clips of adequate strength shall be provided in sufficient number for attaching the fabric and stretcher bars to all terminal posts at intervals not exceeding 15 inches.
11. Tension wire shall be galvanized seven-gauge coil spring steel.
12. Barbed wire shall consist of 12-gauge minimum galvanized steel wire, double strand, twisted, with four point barbs closely spaced. Barbs should be placed staggered from adjacent wires.
13. Support arms shall face outward at a 45-degree angle. The overhanging supporting arms of the top guard will be of sufficient length to increase the overall height of the fence by at least one-foot and provide support for three evenly barbed wires. The arm shall be provided with a hole suitable for through passage of the top rail. The supports shall fit over the end of the posts and shall preclude the entry of moisture.
14. Fabric shall be zinc coated by hot-dip process after fabrication. Coating shall be commercially uniform. It shall not have less than 1.2 ounces per square foot when tested. The fabric shall be attached securely to the gate frame at intervals not exceeding 15 inches. Fabric shall be nine-gauge two-inch mesh.

PART 3 - EXECUTION

3.01 Fence Construction

- A. All posts shall be set in 3,000 psi Portland Cement Concrete footings unless posts are in areas where peat is three feet or deeper. Tops of the footings shall be level with ground, crowned to provide drainage and shall be troweled smooth. Dimensions of footings shall be as shown on Drawings. Footings shall be allowed to cure for at least seven days before attaching fabric. In peat areas (over three feet deep), posts shall be driven to one-foot below bottom of peat or a maximum of 10 feet.
- B. Posts shall be set vertical and of uniform and equal heights above ground with a maximum horizontal spacing of 10 feet center to center.
- C. The posts shall be set at grade breaks as required to allow fabric to be attached without creating a gap greater than four inches between fabric and grade.
- D. Fabric shall be stretched taut and securely fastened to end, corner, or gate posts at the following intervals:

Top Rail	24 inches maximum on center
Posts	14 inches maximum on center
Tension Wire	24 inches maximum on center
- E. Top edge of fabric shall be fastened to top rail, lower edge of fabric shall be fastened to bottom tension wire. Sharp fabric ends shall project above the top rail on security

fencing and below tension wire on other fencing. Fabric shall be attached to posts in an even and uniform manner to follow the grade of the land. The bottom clearance of the fabric above the ground shall be two inches plus or minus.

1. All runs of fence shall present the same appearance. The product of one manufacturer only will be accepted, except for items that do not influence the appearance of completed fence. The fence shall be the product of a manufacturer who has demonstrated by actual installations of a similar nature that its product is of the type required. No used, rerolled, or open-seam steel will be permitted in posts, gate frames, rails or braces.
2. Tension bands shall be used to attach the tension bars to posts. Tension bands shall be spaced 14 inches on center.

END CHAIN LINK FENCES AND GATES

SECTION 33 07 00 HDPE PIPE AND FITTINGS

PART 1 - SUMMARY

1.01 Summary

- A. Utility piping shall be supplied as insulated pipe and fittings with heat trace channels and glycol heat trace piping as indicated on the Drawings for use in pressure pipe applications. The minimum service temperature range of all individual components and final products shall be -20 to 140°F unless otherwise specified. All pipe and fittings shall be capable of withstanding the cyclic freezing of water under its rated service pressure without breaks, leaks, gross deformities, or impaired service characteristics. The core pipe shall be factory insulated with polyurethane insulation and protected with an outer jacket of HDPE.
- B. This section covers HDPE piping and fittings used in the arctic piping system in the following services:
 - 1. Hot glycol designed for 50% to 60% propylene glycol in water. Verify compatibility of any new heat transfer fluids with existing fluids currently in use by the Owner prior to their use.
 - 2. Potable water.
 - 3. Sanitary sewer.
 - 4. Flushing and testing.
- C. All piping is above grade supported on either treated timber sleepers or helical pile supported steel framing except for short, buried sections used in road crossings, which are either direct bury crossings or are to be installed in a casing pipe. Locations where each type of support is used are shown in the Drawings.
- D. With the exception of owner procured materials, all additional HDPE pipe and fittings shall be from a single manufacturer who is fully experienced, reputable, and qualified in the manufacture of the HDPE pipe to be furnished. The pipe shall be designed, constructed, and installed in accordance with the best practices and methods standard to the industry and shall be in accordance with these specifications.

1.02 References

- A. The following specifications (current edition) are referenced in this document and shall be considered integral to this specification:

ASTM C177	Thermal transmission (guarded hot-plate apparatus)
ASTM C273	Shear properties of sandwich-core materials
ASTM C518	Thermal transmission (heat flow meter apparatus)
ASTM D1621	Compressive properties of rigid cellular plastics
ASTM D1622	Apparent density of rigid cellular plastics
ASTM D2126	Response of rigid cellular plastics to thermal humid aging (thermal dimensional stability)

- | | |
|------------|--|
| ASTM D2837 | Obtaining pressure design basis for thermoplastic pipe products |
| ASTM D2842 | Water absorption of rigid cellular plastics |
| ASTM D3350 | Specification for Polyethylene Plastic Pipe and Fittings Materials |
| ASTM E398 | Water vapor transmission rate of sheet materials (dynamic relative humidity measurement) |
| ASTM E96 | Water vapor transmission of rigid cellular plastics |
| ASTM F2164 | Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems using Hydrostatic Pressure |
| ASTM F2620 | Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings |
| ASTM F714 | Polyethylene (PE) plastic pipe (SDR-PR) – based on outside diameter |
- B. American Water Works Association:
- | | |
|-----------|---|
| AWWA C651 | Disinfecting Water Mains |
| AWWA C653 | Disinfection of Water Treatment Plants |
| AWWA C901 | Service Polyethylene Pressure Pipe and Tubing, 1/2-inch through 3-inch for Water |
| AWWA C906 | Polyethylene Pressure Pipe and Fittings, 4-inch through 63-inch for Water Distribution and Transmission |
- C. National Sanitation Foundation:
- NSF/ANSI 14 – Plastic Piping System Components and Related Materials
- NSF/ANSI 61 – Drinking Water System Components – Health Effects
- D. Plastic Pipe Institute
- TR-33 – Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe
- Plastic Pipe Institute (PPI) Handbook of Polyethylene Pipe, Chapter 2 – Inspections, Tests, and Safety Considerations
- E. Unless otherwise noted herein or on the drawings, all fittings shall be constructed utilizing core pipe of the same material, resin, and dimensions as that used for the core pipe of the straight lengths.
- 1.03 Submittals
- A. The Contractor shall furnish to the Engineer for approval one (1) electronic copy in PDF format of the submittals indicated below. No work shall commence on any item until the required shop drawing submittals have been approved. The submittals shall include:
1. Product Data: Submit manufacturer's standard printed information and literature for all materials to be incorporated in the work.

2. Shop Drawings: Submit dimensionally correct (scaled) shop drawings for all items to be fabricated prior to beginning fabrication.
3. Fabrication Procedures: Submit a written description of the methods/procedures to be used in fabricating the pipe and fitting.
4. HDPE Fusion Procedure Certifications (Butt Fusion and Electrofusion) for all personnel performing butt fusion and/or installing electrofusion couplings in the field on HDPE pipe. Contractor shall also submit evidence of experience for the installers of Fusions and Electrofusion Couplings.
5. Inspections and Testing of Pipe and Fittings:
 - a. Submit proposed hydrostatic testing procedure in compliance with ASTM F2164 for review and approval before any testing is undertaken.
 - b. Submit results of foam density tests on daily basis for all specified inspections and testing of pipe and fittings.
6. Quality Assurance program in accordance with section 1.04.
7. Laboratory Testing Results:
 - a. K-factor testing of insulation.
 - b. Core pipe/insulation bond
 - c. Density of insulation
 - d. Testing frequency shall be a minimum of one set of tests per 400 linear feet of pipe.

1.04 QUALITY ASSURANCE

- A. The manufacturer shall be experienced and regularly engaged in the production of pre-insulated piping systems. The manufacturer shall understand the system design and its intent and shall produce components suitable to accomplish that intent. Any deficiencies in the Drawings or these Specifications which may jeopardize the performance of the system shall be brought to the immediate attention of the Engineer, prior to submittal of product description and information for acceptance, whenever possible.
- B. Engineer shall have open access to the fabrication facility and any sub-tier suppliers to assure conformance with the Specifications and quality of workmanship.
- C. The Contractor shall submit to the Engineer for approval a Quality Assurance program which incorporates as a minimum the following:
 1. A description of the method of manufacture.
 2. A description of the methodology for the quality assurance program.
- D. The Contractor shall implement the Quality Assurance program to assure compliance with all requirements of this Specification.
- E. A record of all tests which were performed shall be provided to the Engineer as required. (As a minimum, all test reports shall be submitted to the Engineer upon completion of work).

- F. Where a method of testing has not been specified, the Contractor shall submit detailed test procedures for approval by the Engineer.
- G. Any deficiency found in a stick of pipe shall be cause for rejection of the entire stick of pipe. All rejected pipe shall be replaced by the Contractor at no additional cost to the Owner.
- H. All insulated pipe and fittings supplied under this specification shall utilize the same manufacturer of core pipe. Contractor shall identify the core pipe manufacturer with his submittal. Additionally, since the City of Bethel procured pipe materials ahead of the construction project, the pipe material and fittings purchased by the Contractor must be compatible with the already acquired pipe.

PART 2 - PRODUCTS

2.01 No Lead Rule

- A. All pipe, fittings, and brass components in contact with potable water are to comply with Public Law 111-380 (No Lead Rule).

2.02 Core Pipe (Water Main, Low Pressure Sewer Main, Glycol Main):

- A. All core pipe shall be made of high-density polyethylene (HDPE) that conforms to all applicable provisions and requirements of the latest revision of AWWA C901 and AWWA C906 and, by inclusion, all appropriate standards referenced therein.
- B. HDPE Plastic Pipe shall possess the following characteristics unless otherwise specified, shown, or approved by the Engineer.
 - 1. Shall have a cell classification of 345434C per ASTM D 3350.
 - 2. Nominal pipe dimensions as given on the drawings shall have actual diameter dimensions in accordance with ASTM F714. All dimensions are Iron Pipe Size (IPS).
 - 3. Shall have a maximum standard dimension ratio (SDR) of 11.0 and a minimum pressure rating of 160 psi.
 - 4. Shall maintain a pressure rating equal or above 100 psig at 140 °F.
- C. All HDPE pipe used on the project shall have the same trade name. Additionally, the manufacturer shall certify that all HDPE pipe materials are compatible.
- D. All HDPE pipe and fittings shall be fabricated from virgin PE4710 resin.
- E. All HDPE pipe mains shall be butt fusion welded per ASTM F2620. Electrofusion joints are allowed for side taps or areas where butt fusion welding is physically impossible. All planned electrofusion joints shall be identified, and a list presented to the engineer for final approval prior to fusion.

2.03 Pipe Insulation

- A. Insulation between core pipe and outer jacket of all pipe and fittings shall be low-density rigid closed-cell polyurethane insulation with a nominal thickness as shown on the drawings. It shall be applied and cured in strict accordance with the manufacturer's recommendations and good commercial practices such that the

- resulting insulation completely fills the annular space between core pipe and outer jacket and is free of defects affecting its intended purpose.
- B. Polyurethane insulation shall exhibit the following properties and characteristics specified by the referenced ASTM tests below.
- ASTM C518 or C177, Maximum K-factor, as produced: 0.22 btu·in/hr·ft²·°F
- ASTM D1622, Core Density Range: 2.0 to 4.0 lbs/ft³
- ASTM D1621, Minimum Compressive Strength: 40 psi (parallel and perpendicular to pipe axis)
- ASTM D272, Maximum Water Absorption: 2%
- ASTM D2126, Dimensional Stability: 2% (Maximum Linear Change)
- C. Exposed polyurethane insulation faces at pipe and fitting ends shall be coated to protect against physical damage, UV exposure during shipping and storage, and against water intrusion in service. The elastomeric coating shall be suitable for direct application over polyurethane insulation with no deleterious effects to the insulation or coating. The elastomeric coating shall be formulated for long-term service and retained flexibility over extended periods of exposure to sunlight, harsh weather, and saltwater spray. The strength of the adhesive bond of the coating to the insulation shall be greater than the tensile strength of the coating. In the event the coating is nicked or an edge is rolled up in handling, the coating that has been dislodged shall tear free from the coating still adhering to the insulation rather than pull the balance of the coating off as a sheet.
- D. All Federal and State regulations applicable to the type of insulation and its use shall be strictly adhered to.
- E. Insulation shall be placed into the pipe jacket by a single injection application. Fittings may be manufactured using one insulation injection for each open end of the fitting. In no case shall the jacket be drilled to perform, monitor, or inspect the injection. Pre-manufactured 4" arctic foam half-shells with rigid HDPE wrap, as described in 2.14, are the preferred method for joints and fittings.
- F. The maximum allowable void size is 0.05 in³ (for reference, a 3/8-inch cube is .05 in³).
- G. Insulation and chemicals shall not contact the end or inside of the exposed core pipe.
- H. The electric element heat trace channel shall be secured to the outside of the core pipe, parallel to the pipe axis, prior to insulating. The channel shall be flush with the insulation faces at each end of the pipe or fitting, be free of insulation residue and foreign substances, and open to the minimum cross section specified.
- I. The elastomeric coating shall be applied and cured in strict accordance with the manufacturer's recommendations and good commercial practice such that the finished product is free of defects affecting its intended purpose.

- J. The elastomeric coating material shall exhibit the following properties and characteristics:

ASTEM E398 or E 96 Maximum Water Vapor Permeance: 1.0 perm
Dry Film Thickness Range: 15 to 63 mils

2.04 Core Pipe/Insulation Bond

- A. Core pipe and fittings shall be bonded to the insulation with a minimum shear bond strength of 15 psi, or in such a manner as to produce insulation-to-insulation separation when a sample is tested in shear.
- B. The core pipe surface preparation will be performed in a manner that does not leave foreign material imbedded in the plastic. Gouges or scratches in the pipe surface that exceed the tolerance specified by the pipe manufacturer for the pipe pressure rating shall be cause for rejection.

2.05 Pipe Insulation Jacket

- A. Outer jackets for pipe and fittings shall be constructed of HDPE.
- B. The Contractor shall provide company name and production date (month and year) on the outer jacket of each pipe and fitting. Information shall be stamped onto the jacket with 1/8- inch to 1/4-inch-high lettering, within 8" of one end of the jacket.
- C. All surfaces of the outer jacket, including end-cuts and welds, shall be finished such that no jagged edges exist that could cause personal injury.
- D. The interior of the jacket shall be free of oils, grease, or other residue that could interfere with the adhesion of insulation to the outer jacket.

2.06 Electric Heat Trace Channel

- A. Electric heat trace channels shall be provided at a 45-degree angle from the bottom of the sewer service pipe, as indicated in the drawings.
- B. Heat trace channels shall be fully enclosed, in direct contact with the core pipe for its entire length, and there shall be no intrusion of insulation between the heat trace channel and the core pipe unless otherwise specified.
- C. Heat trace channels for all straight lengths of pipe shall be made of the same material as the pipe and shall be a semi-circle shape with inside dimensions of 1.5 inches and installed as shown on the drawings. The heat trace channel shall extend 2-inches past the insulation face of the pipe, with ends cleanly cut, square, smooth, and free from burrs or other protrusions that could interfere with installing the heat trace in the field.
- D. Heat trace channels installed along angular bends of fittings shall be constructed with 1.5-inch diameter flexible, liquid-tight PVC non-metallic conduit. Conduit material shall be nonconductive and non-corrosive, with a smooth interior surface that will maintain the internal diameter in tight radius bends. Conduit material shall be UL listed for outdoor use. A transition fitting shall be installed on all ends of heat trace channel that results in a channel protruding from the insulation face as specified for straight pipe channel. All transition fittings shall be constructed with smooth interiors, free from burrs or other protrusions that could interfere with installing the heat trace in the field, as shown in the drawings.

- E. Pieces of heat trace channel to fit within the joint area (jumpers) shall be provided with each piece of pipe and with each fitting. The jumpers must be sized to slip snugly over the outside of the specified straight pipe heat trace channel with an overlap of not less than 1 ½- inches on each side after a typical field fusion of individual lengths of pipe.

2.07 Glycol Heat Trace Channel

- A. Glycol heat trace channels shall be provided on the bottom of the main pipe.
- B. Channels shall be constructed of virgin PE4710 and shall be in direct contact with the core pipe for its entire length with no intrusion of insulation between the channel and the core pipe unless otherwise specified.
- C. Channels shall be sized as shown in the drawings. Alternate shapes can be submitted to Engineer for approval.

2.08 Service Pipe (Water, Sewer and Glycol)

- A. Service pipes are placed in arctic insulated carrier pipe. See drawings for sizes and configuration for the different water, sewer, and glycol service sizes and carrier pipe sizes.
- B. HDPE pipe shall be constructed of virgin PE4710 resin. All design drawings are based on DR11 HDPE piping.
- C. For gravity sewer service pipe only, PE3408 HDPE DR17 with Harco fitting shall be allowed.

2.09 Fittings

- A. Fittings
 - 1. All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe DR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor fabricated fittings shall be used unless approved by the Engineer.
 - 2. Fittings and specials shall have the same trade name or be manufactured by the same manufacturer as the HDPE pipe being supplied. The manufacturer shall certify that the fitting material is compatible with the pipe material.
 - 3. Heat Fusion Joints shall comply with ASTM F2620.
 - 4. Transition Fittings (change in pipe materials) for fittings larger than 2" shall be Victaulic (or Engineer approved equal) style clamp couplings. The style number shall be appropriate for the service using pipe manufacturer's recommended fitting for the pipe materials and sizes being used. Style 904 HDPE to Flanged, style 907 HDPE to steel, and series 2971 HDPE to PVC are all pre-approved.
 - 5. All nuts and bolts shall be Type 316 stainless steel.
 - 6. All transitions from HDPE pipe to other pipe materials and valves shall be made per the HDPE pipe manufacturer's recommendations and specifications. A molded flange connector adapter with 316 stainless steel back-up ring assembly or Victaulic (or Engineer approved equal) style 907 adaptor shall be used for pipe

type transitions. No solid sleeves shall be allowed between material transitions. Flanges shall be ANSI Class 125.

B. Fabricated Fittings

1. All fusion joints used in fabricated fittings shall be documented by a computer that records pressure and temperature applied at each fused joint. Computer printouts and electronic data for each fitting shall be made available to the owner upon request. The Contractor shall ensure that each joint is fused at the temperature and pressure recommended by the pipe manufacturer in order to achieve the maximum pressure rating for that joint.
2. All fittings for each project shall be labeled with a unique identifier that corresponds with the fusion computer printouts for each fitting.

2.10 HDPE Pipe and Fitting Manufacturing and Dimensional Tolerances

- A. Allowable offset of the centerline of the outer jacket and core pipe shall be not more than 1/4- inch at the pipe ends. Elsewhere along pipe lengths the centerline offset shall not be greater than 3/8-inch.
- B. The minimum temperature of all components used to manufacture pipe and fittings shall be 50 °F at the start of fabrication. The fabricated pipe shall be placed in a facility maintained at a temperature of 50 °F or greater for a minimum of 12 hours after fabrication.
- C. All elbows shall have a bend radius as specified in the drawings with a tolerance of + 2 degrees without reversion. All elbows must maintain normal outside diameters along their entire length without tolerance as per ASTM-F714.
- D. All branches of fabricated fittings must lie in a single plane with a maximum deviation of + 2 degrees.
- E. The length of core pipe protruding from the insulation on the ends shall be 12 inches + 1/4 -inch. The core pipe ends shall be smooth and oriented perpendicularly to the core pipe longitudinal axis + 1/8-inch.
- F. The outer jacket shall be cut in one pass perpendicular to the length of the jacket + 1 degree. The heat trace channels shall be flush with the insulation and outer jacket. The insulation profile of the coated ends shall not exceed a relief deviance of + 1/4-inch across the face.

2.11 HDPE Pipe and Fitting Production and Inspection

- A. Only finished pipe lengths and fittings that meet the requirements of these specifications and drawings shall be used for destructive testing. Should any product fail to meet the visual quality control specifications listed below, that product shall be either re-built to meet the specifications or rejected. Only those products that meet all visual quality control specifications shall be considered final products suitable for receipt by the Owner or for laboratory or other destructive testing.
 1. Visual Quality Control:
 - a. Dimensional Tolerance: Each length of pipe and each fitting will be examined by the Contractor for off-set tolerances, insulation cut-back distances, exposed

insulation face alignment and relief profile, and alignment and smoothness of core pipe ends.

- b. Insulation Integrity: Completed pipe and fitting ends shall be inspected for voids in excess of 0.05 in³ or discontinuities by the Contractor prior to coating. Any glazing left on the uncoated pipe end from the forms used during the insulating operation shall be removed before coating.

2. Laboratory Testing

- a. The density and K-factor shall be measured on insulation specimens of the appropriate size and under the specified conditions as set forth in the applicable ASTM test. Insulation specimens shall be retrieved by cutting a 12-inch section of insulated pipe from a production sample. The remaining length shall be trimmed to the dimensional tolerances of this specification to allow Owner use of that pipe section.
- b. Should the Contractor choose to test the "K" factor as outlined in ASTM C518, the testing apparatus shall be calibrated within 24 hours of the test using a calibration standard certified accurate by the National Bureau of Standards (NBS). The "K" factor test sample shall be removed from the insulated pipe, prepared for testing, and left open to the atmosphere at 70°F for a minimum of 24 hours prior to testing.
- c. In addition to the testing identified above, the following tests shall be performed to verify the quality of the finished product:
 - 1) Core pipe/insulation bond:
 - a) Two 6-inch lengths of cured insulated pipe shall be cut from one uncoated insulation face end of completed pipe length. The remaining length shall be trimmed according to the dimensional tolerances of this specification and coated to allow Owner use of that pipe section.
 - b) One specimen shall be tested at +70°F. The other specimen shall be brought to -20°F in 4 hours or less and remain there for at least 24 hours before testing. Acceptance will be indicated by a minimum shear bond strength of 15 psi and insulation-to-insulation (or insulation-to-insulation pipe surface film) separation or tearing.

2.12 HDPE Pipe and Fitting Packing

- A. The core pipe ends of all pipe and fittings shall be capped with PE pipe caps (Caplugs or approved equal) and the plugs taped to the pipe with black electrical tape (such as 3M #33+) or other approved tape after final inspection and prior to shipment. Duct tape shall not be used to secure the PE pipe caps to the pipe spigot ends.
- B. Pre-insulated pipe shall be packed in bundles with a maximum gross weight of 4,000 pounds per bundle unless otherwise specified by the Owner. The end geometry of each bundle shall be rectangular. Each layer of pipe within the bundle including the bottom layer shall rest upon a minimum of 3 each 4-inch x 4-inch cross cleats banded to that individual layer using 1 1/4-inch steel strapping. All cleats shall feature a 45-degree stop block at least nominal 4-inches high by 4-inches long fastened securely

to both ends of the cleats to prevent the pipe from rolling off the cleat when the banding is cut. The outer cross cleats shall be installed between 1 to 2-feet from the insulation face of the pipe ends with the middle cleat centered on the bundle. In addition, 1 1/4-inch steel straps shall securely fasten all the layers together to form a complete bundle. Bundles 5 pipes wide by 5 pipes high are recommended.

- C. All fittings and couplings shall be packaged in crates sheathed with minimum 1/2-inch sheathing not to exceed 4 ft x 4 ft x 8 ft. Minimum nominal 2-inch x 3-inch framing members shall be installed in all corners of the crate and fastened securely to the sheathing. On crates longer than 6- feet, framing members shall be installed along the shorter centerline of all the 4 long panels. The framing members shall be securely fastened to each other and to the sheathing. For crates 4-feet long or less, 2 each 4-inch x 4-inch cleats shall be installed on the bottom edges of the crate to provide for forklift handling. For crates longer than 4-feet, 3 cleats shall be installed, with the middle cleat centered on the crate. These cleats shall be fastened through the bottom sheathing and also banded to the crate with 1 1/4-inch-wide steel bands that wrap around the entire crate. The crates shall be designed to stack 3 crates high, provide protection to the contents during rough ocean, air freight transport, and on-site handling without damage.

2.13 HDPE Pipe and Fitting Final Inspection

- A. After completion of the quantity of pipe and fittings contracted for, the Owner may perform a final inspection at the fabrication point. The certified results of all required laboratory tests made during production by the Contractor shall be made available in report form at this time. During the final inspection, the product packing will be inspected to see that all specifications listed in section 2.11 have been met. Should any of the packing fail to meet the specifications, the Contractor shall re-pack the pipe to meet the specifications.

2.14 Joint Insulation Kit

- A. Joints between segments of insulated pipe and fittings shall be installed using 4" thick foam half-shells.
- B. After installing, foam half shells shall be covered by a protective HDPE sleeve. Where an owner-provided metal-jacketed pipe joins an HDPE-jacketed pipe, heat shrinkable sleeve specifically designed for pipes made of HDPE, Canusa K-60 or approved equal is acceptable.
- C. Joint kits shall include half shell foam insulation and rigid wrap or heat shrink to field fabricate the pipe joint.
- D. Joint kits shall be sized for 16-inch cut back (8 inches for each pipe) and 8-inch jacket overlap (4 inches for each pipe) for a total joint sleeve length of 24 inches.
- E. Manufacture to fit the fitting or the pipe joint.

2.15 Pipe Identification

- A. The following shall be continuously indent printed on the pipe or spaced at intervals not exceeding 5-feetca.
 - 1. Name and/or trademark of the pipe manufacturer.

2. Nominal pipe size.
3. Dimension ratio.
4. The letters PE followed by the polyethylene grade in accordance with ASTM D1248 followed by the hydrostatic design basis of the piping.
5. NSF-61 for all NSF-61 certified piping.
6. A production code from which the date and place of manufacture can be determined.

2.16 Electrofusion Couplings

- A. Electrofusion couplings should be avoided for fusion of HDPE pipe mains. Electrofusion couplings are allowed for branch service lines or where required in the 3" glycol circulation main in cases where butt fusion is not physically possible. Where required, couplings shall be installed by a certified technician. Electrofusion couplings shall be approved by pipe manufacturer to which they will be bonded.
- B. One-piece construction, tubular, and same material as the adjacent HDPE pipe.
- C. Couplings shall have attached around the circumference at each end a fusion wire which when energized shall provide a complete watertight fusion weld.
- D. Fusion weld wires are factory attached and with sufficient lead for connection to factory supplied power converter.
- E. Couplings shall be capable of sustaining test pressure without damage. Contractor shall supply one extra coupling per four installed for future use by Owner.
- F. Electrofusion couplings shall not be used for outer jacket sleeves or to repair damaged piping.
- G. Installation of coupling shall be in accordance with manufacturer's written instructions and using manufacturer's recommended tools and materials.

2.17 Valves

- A. Water Circulation Loop In-Line Isolation Ball Valves
 1. Valves for HDPE water mains shall be polyethylene ball valves suitable for use with piping complying with AWWA C901 and AWWA C906 as applicable.
 - a. Valves 2-inches and smaller shall have an integral stainless-steel valve stem. Valves larger than 2-inches shall have polyethylene valve stem.
 - b. Valve body shall be fully fused with no metal internal parts.
 - c. Valve shall provide full port through opening, with no flow obstructions, when in open position.
 - d. Valves shall be rated for full pressure rating of connecting pipe, 160 psi minimum.
 - e. Valves 8" and larger shall have gear operators.
 - f. Install valves using butt-fusion.
 2. Valves shall be NSF/ANSI 61 certified for use with potable water.

3. Install in main loop only for isolation as shown on plans.
 4. Manufacturer: Polyvalve, Poly-Water Valves or approved equal.
- B. Water Circulation Loop Gate Valves
1. Gate valves shall be iron body, fully bronze-mounted, double disc, parallel seat valves as manufactured by Mueller Company or approved equal and in accordance with AWWA Specification C-500-93 or C509-01. All valves shall have non-rising stem, an O-ring seal, a handwheel operator, and open counterclockwise. Valves shall have welded flanges.
 2. Gate valves are required at fire hydrants for isolation. See drawing details for location and quantity.
- C. Sewer Lateral Valves
1. Valves for HDPE sewer laterals shall be polyethylene ball valves suitable for use with piping complying with AWWA C901 and AWWA C906 as applicable.
- D. Sewer Main Isolation Ball Valves
1. Valves for HDPE sewer mains shall be polyethylene ball valves suitable for use with piping complying with AWWA C901 and AWWA C906 as applicable.
 2. Valves 2-inches and smaller shall have an integral stainless-steel valve stem. Valves larger than 2-inches shall have polyethylene valve stem.
 3. Valve body shall be fully fused with no metal internal parts.
 4. Valve shall provide full port through opening, with no flow obstructions, when in open position.
 5. Valves shall be rated for full pressure rating of connecting pipe, 160 psi minimum.
 6. Valves 8" and larger shall have gear operators.
 7. Install valves using butt-fusion or flanged connections.
 8. Install in sewer main only for isolation as shown on plans.
 9. Manufacturer: Polyvalve, Poly-Water Valves or approved equal.

2.18 Hydrants

- A. Fire hydrants shall be as shown on Construction Drawings or Approved Equal and shall conform to AWWA Specification C-502-94, "Dry Barrel Fire Hydrants." All connections shall be mechanical joint unless otherwise approved by Owner's Representative.
- B. All "single pumper" hydrants shall have two, two- and one-half inch hose connections and one four and one-half inch pumper connections. All "double pumper" hydrants shall have one, two- and one-half inch hose connection and two four and one-half inch pumper connections. All hose threads shall be National Standard threads. The working parts of all fire hydrants shall be bronze or non-corrodible metal.

- C. Painting and coating shall be in accordance with the cited AWWA specifications for dry barrel fire hydrants Section 4, Article 4.2 (Paint). Color of paint shall be red.
- D. The adjustment of hydrant barrel and valve box to the required finish grade will be at the expense of the Contractor.
- E. All hydrants shall have drain outlets at the base of the barrel. Plugs shall be removed prior to installation.
- F. Fittings for hydrants shall be Ebba Iron Megalug, Victaulic Style 907, flanged class 125, or Engineer Approved Equal. Fittings shall be fully restrained.
- G. Gate valve(s) shall be provided for isolation. Handwheels shall be provided for all gate valves.

PART 3 - EXECUTION

3.01 General

- A. Connections to the Bethel Heights Water Treatment Plant shall be coordinated with the Owner's Representative and the Owning Utility before any shutdown of existing water facilities. Maximum allowable shutdown time shall be four hours. All shutdowns shall be approved and coordinated with the City of Bethel. Public notice (if required) shall be given a minimum of 24 hours before shutting down.

3.02 Construction Staking

- A. The Contractor shall furnish the construction staking.
- B. Horizontal distances are from center to center of fitting or appurtenances unless otherwise noted.
- C. Contractor furnished survey shall be done by a qualified and registered surveyor. The Contractor shall provide a competent surveyor to maintain line and grade during all pipe-laying operations with a transit and engineer's level at no additional cost to the Owner. Accurate survey notes shall be kept in accordance with accepted survey practice. A copy of these notes shall be given to the Owner's Representative as part of the record drawing submittal.

3.03 Water Removal

- A. During any required excavation for road or access crossings, the Contractor shall remove by pumping or other approved means all water above the bottom of the trench. Contractor shall obtain all permits necessary for dewatering.

3.04 Utility Mains

- A. Install water mains on helical pile supported steel foundations or proposed timber foundation supports unless in casing pipe or direct bury.
- B. For casing pipes and in direct bury applications, minimum cover shall be as shown on the plans to the outside diameter of the pipe. The excavation and backfill as specified in Section 31 20 00 Earth Moving.
 - 1. Backfill Material shall be two inches maximum size within one foot surrounding the pipe. The Contractor shall carefully place and thoroughly compact backfill around and above pipe to minimum 95 percent density.

2. After the lines have been inspected, the trenches shall be backfilled. Backfill may be accomplished prior to testing at the Contractor's risk.
 3. Restore surface to its original elevation or finished grade as shown on the Plans.
 4. Marking tape 12" above main shall be installed in direct bury installation.
- C. Contractor shall work around, support and protect existing water and sewer mains and services as required to complete the Work.
- D. Contamination Prevention:
1. Contractor shall take particular care to keep potential sources of contamination from collecting around water mains and services.
 2. Adequate provisions shall be made to direct surface flows and other sources of potential contamination away from the work area during construction.

3.05 Core Pipe Fusion

- A. Pipe shall be protected during handling against impact shocks and free fall, and the pipe interior shall be free of extraneous material.
- B. Each pipe shall be laid accurately to the line and grade shown on the Drawings. Pipe shall be laid and centered so that the sewer has a uniformly sloping invert. As the work progresses, the interior of the water or sewer shall be cleared of all superfluous materials.
- C. Before making pipe joints, all surfaces of the portions of the pipe(s) to be joined shall be clean and dry. Lubricants, primers, and adhesives shall be used as recommended by the pipe manufacturer. The joints shall then be placed, fitted, joined, and adjusted so as to obtain the degree of water tightness required.
- D. Pipe cutting, where necessary, shall be done in a neat and workmanlike manner without damage to the pipe. Unless otherwise authorized, cutting shall be done by means of an approved type of mechanical cutter. Wheel cutters shall be used when practicable.
- E. Polyethylene Pipe: Installations and cutting of polyethylene pipe shall be in accordance with ASTM F2620, thermal butt-fusion, in strict conformance with the manufacturer's recommendations, and as detailed hereinafter.
1. Butt-fusion joining of pipe and fittings shall be performed in accordance with the procedures established by the pipe manufacturer. Joining must be conducted by personnel possessing the qualifications and certifications specified below.
 2. Butt-fusion joining of pipe and fittings shall be performed on fusion machinery approved by the pipe manufacturer. Fusion pressures, temperatures, and cycle times shall be according to pipe manufacturer's recommendations. No pipe or fittings shall be joined by any individual, unless they are adequately trained and qualified in the technique involved.
 3. Joining sites shall be cleared and graded, if necessary, to provide enough space for pipe storage and fusion. The site shall be free of rocks, stumps, and debris

which would cut, scar or gouge the pipe. The fusion machine must be mounted on a level, stable base (e.g. three- fourth inch-plywood secured on level ground) or on a sled of a design approved by the pipe manufacturer. To allow the joining operation to continue in adverse weather conditions, a shelter shall be built for the joining machine.

4. When joining new HDPE pipe to the existing sewer piping which consists of various undetermined materials, the Contractor shall use the adapters, connectors, couplings, etc. recommended by the HDPE pipe manufacturer as submitted to the Owner's Representative 30 days prior to installation.
 5. Where polyethylene is installed below grade, a detectable underground marking tape shall be installed in the pipe trench parallel and two feet above the top of the pipe.
 6. All joints shall be labeled with a unique identifier that corresponds with the fusion computer printouts for each fitting. The joint number and location shall be recorded on the record drawings
 7. Each joint shall be documented by a computer that records pressure and temperature applied at each fused joint. Computer printouts and electronic data for each joint shall be made available to the owner or inspector upon request. The Contractor shall ensure that each joint is fused at the temperature and pressure recommended by the pipe manufacturer in order to achieve the maximum pressure rating for that joint.
- F. Polyethylene Fusion Technician Qualification: The Contractor is responsible for the butt-fusion joints done by his organization and shall provide for the instruction, testing, and installation training sessions as required to obtain for his personnel, including quality control personnel, a polyethylene fusion certification and authorization issued by the manufacturer of the supplied polyethylene piping. Only certified and authorized personnel will be allowed to perform the installation, supervision or inspection of polyethylene-fusion joints. All Contractor personnel performing installation, supervision or inspection of polyethylene fusion joints shall undergo training and certification or recertification prior to beginning work on HDPE pipe. The certificate and authorization for polyethylene fusion shall be submitted to the Owner's Representative prior to any installation or work on HDPE pipe. The Contractor shall make all training sessions available to Government inspectors and quality assurance personnel at no charge to the Government and shall schedule the training sessions at a date and time agreeable to the Owner's Representative's representative.
- G. Training: The manufacturer shall assist the Contractor by training and instructing the Contractor's personnel in proper polyethylene pipe installation procedures and fusion techniques. Certification will be required in writing from the manufacturer or manufacturer's representative listing the names of those persons so qualified. The manufacturer's representative shall be a person regularly engaged in such service and shall be certified in writing by the manufacturer to be technically qualified and experienced to supervise and conduct the training. The training shall include a classroom/lab type of instruction in which personnel being certified are instructed in properties of HDPE Pipe and the proper procedures for jointing, fusion, and

installation. All personnel shall be required to operate fusion equipment and become proficient at joining HDPE pipe of the various wall thicknesses and diameters being installed on this project.

- H. Inspections: All new lines shall be left fully exposed and accessible until inspected and approved by the Owner's Representative.

3.06 Joint Insulation Kits

- A. Construct all piping, heat trace channels, and glycol heat trace before installing joint insulation kits.
- B. The City procured pipe may have damage to the insulation at the ends of the pipe. Contractor is to spray foam the damaged ends to make insulation seamless when joint kits are installed.
- C. Joint insulation kits shall only be installed on piping that has passed hydrostatic pressure test in this specification.
- D. 4" wide half shells with engineer-approved rigid HDPE sleeve are preferred by the City. Heat shrink wrap is acceptable with engineer's approval.

3.07 Glycol Pipe Installation

- A. Installation shall conform to all manufacturers' instructions and the Plastic Pipe Institute Handbook of Polyethylene Pipe, latest edition.
- B. Two-inch glycol HDPE pipes shall be installed in an arctic piping system as indicated on the Plans. The installation will be complex, and the Contractor is instructed to review the plans carefully and plan out the work in advance to ensure all required materials and tools are available at the time of construction. The 2" glycol main transitions between the water and sanitary sewer mains at multiple points in the loop.
- C. Installer shall be trained and certified by the manufacturer for fusion of HDPE pipe as previously described.
- D. Contractor to fill glycol loop with Dowfrost 50% propylene glycol per manufacturer's recommendations. Coordinate with plant operators.

3.08 Flushing

- A. The Contractor shall submit his plan for flushing to the Engineer for review and approval at least 10 days before starting flushing.
- B. The Contractor shall notify the Engineer a minimum of 48 hours before actually beginning the field flushing.
- C. A representative of the Owner and Contractor shall be present for all flushing and testing.
- D. Before the pressure or leakage tests are performed and before the system is sterilized, all newly laid mains shall be thoroughly flushed to remove all foreign materials. The Contractor shall provide for "open bore" flushing at each end of the system so that all parts will be cleaned. Flushing times shall be at the discretion of the Owner and utility. The Contractor will use the method in AWWA C651-14 "Disinfecting Water

Mains". Hydrants shall be flushed after the full bore flush to remove debris from the hydrant runs.

- E. In the event repeated flushing is necessary to approve and certify the system, such flushing shall be done at the expense of the Contractor.

3.09 Testing

- A. Pressure testing shall be conducted per Manufacturer's recommendations and as approved by the Engineer.
- B. The Contractor shall submit his plan for testing to the Engineer for review and approval at least 10 days before starting testing.
- C. The Contractor shall notify the Engineer a minimum of 48 hours before actually beginning field testing.
- D. All HDPE mains shall be field-tested. Contractor shall supply all labor, equipment, material, gages, pumps, meters, and incidentals required for testing. Pressure testing shall be completed once all service connection boxes have been assembled and with all water and sewer service isolation valves fully closed.
- E. Water Main
 - 1. All water mains shall be tested to 120 psi with 73°F or lower water unless otherwise approved by the Engineer.
 - a. Should a leak be found in a section of existing piping that was not modified during Contractor's operations, coordinate with Engineer to determine method for repairing the damaged piping. Owner will pay for cost of repairs.
 - b. Should a leak be found in a section of new piping or at a new joint in a section of existing piping the damaged piping shall be repaired at the Contractor's expense.
 - 2. Pressure testing procedure shall be as follows:
 - a. Restrain pipeline against movement in event of catastrophic failure. Leave joints exposed for leakage examination.
 - b. Isolate section of piping to be tested.
 - c. Fill line slowly with water. Maintain flow velocity less than 2 feet per second.
 - d. Expel air completely from the line during filling and again before applying test pressure. Air should be expelled by air release valves.
 - e. Pressurize pipeline to test pressure and add make-up test water as required to maintain maximum test pressure of 120 psi for four hours.
 - f. After four-hour expansion phase, reduce pressure by 10 psi to target test pressure of 110 psi.
 - g. The final test pressure shall be within 5% of the target pressure at the end of one hour.
 - h. Upon completion of the test, the pressure shall be bled off from a location other than the point where the pressure is monitored. The pressure drop shall

be witnessed by the Engineer at the point where the pressure is being monitored.

3. If the final test pressure is within 5% of the target test pressure at the end of the test period and there are no visual leaks the installed pipe shall be considered to have passed.
4. All visible leaks are to be repaired regardless of the amount of leakage.

F. Glycol Heating Loop

1. All glycol mains shall be tested to 100 psi with 80-90°F water or glycol solution unless otherwise approved by the Engineer.
 - a. Should a leak be found in a section of new piping or at a new joint in a section of existing piping the damaged piping shall be repaired at the Contractor's expense.
2. Pressure testing procedure shall be as follows:
 - a. Leave joints exposed for leakage examination. Pipe shall be tested after inserting into glycol heat trace channel.
 - b. Isolate section of piping to be tested.
 - c. Fill line slowly with water. Maintain flow velocity less than 2 feet per second.
 - d. Expel air completely from the line during filling and again before applying test pressure. Air should be expelled by air release valves.
 - e. Pressurize pipeline to test pressure and add make-up test water or glycol solution as required to maintain maximum test pressure of 100 psi for four hours.
 - f. The final test pressure shall be within 5% of the target pressure at the end of one hour.
 - g. Upon completion of the test, the pressure shall be bled off from a location other than the point where the pressure is monitored. The pressure drop shall be witnessed by the Engineer at the point where the pressure is being monitored.
3. If the final test pressure is within 5% of the target test pressure at the end of the test period and there are no visual leaks the installed pipe shall be considered to have passed.
4. All visible leaks are to be repaired regardless of the amount of leakage.

G. Sewer Main

1. All sewer mains shall be tested to 45 psi unless otherwise approved by the Engineer.
 - a. Should a leak be found in a section of existing piping that was not modified during Contractor's operations, coordinate with Engineer to determine method for repairing the damaged piping. Owner will pay for cost of repairs.
 - b. Should a leak be found in a section of new piping or at a new joint in a section

of existing piping the damaged piping shall be repaired at the Contractor's expense.

2. Pressure testing procedure shall be as follows:
 - a. Restrain pipeline against movement in event of catastrophic failure. Leave joints exposed for leakage examination.
 - b. Isolate section of piping to be tested.
 - c. Fill line slowly with water. Maintain flow velocity less than 2 feet per second.
 - d. Expel air completely from the line during filling and again before applying test pressure. Air should be expelled by air release valves.
 - e. Pressurize pipeline to test pressure and add make-up test water as required to maintain maximum test pressure of 45 psi for one hour.
 - f. The final test pressure shall be within 5% of the target pressure at the end of one hour.
 - g. Upon completion of the test, the pressure shall be bled off from a location other than the point where the pressure is monitored. The pressure drop shall be witnessed by the Engineer at the point where the pressure is being monitored.
3. If the final test pressure is within 5% of the target test pressure at the end of the test period and there are no visual leaks the installed pipe shall be considered to have passed.
4. All visible leaks are to be repaired regardless of the amount of leakage.

3.10 Disinfection and Testing

- A. Refer to Section 33 13 00 for water main disinfection procedures.

3.11 Existing Utilities

- A. Contractor is responsible for the protection of all existing underground, surface and overhead utilities, and for the protection of adjacent structures. Plan locations of existing underground facilities are to be considered approximate only and shall be verified with the owning utility by the Contractor. The methods used to protect existing utilities, appurtenances, structures, etc. shall be subject to the approval of the Owner. Any damage to existing utilities should result in a stop-work and immediate repair completed to the satisfaction of the Owner and the Utility, at the expense of the Contractor.

3.12 Record Drawings

- A. Contractor shall provide staking notes and a redlined drawing prior to final payment showing record information on the following:
 1. Horizontal location and elevation at least every 50 feet along the pipe and of all tees, bends, changes in grade, and end of the dead-end runs.
 2. Horizontal location for all valves and change in pipe size or class. In addition to stationing, location of valves shall also be shown by three swing ties from each valve to appropriate prominent features. Swing ties shall not exceed 100 feet in

length without the written consent of the Owner's Representative.

3. Horizontal and vertical location of electrofusion couplings, air releases, drain valves, repairs to leaks during testing or damaged section of pipe, and hydrants.
4. Accurate detail and location of any unique tie-ins, special combination of fittings, etc.
5. On service pit orifices, show station on mainline for corporation stop, length and size of service line, location of pit orifices by two and more swing ties and station and offset to terminus. Swing ties to be as close to 90 degrees to one another as possible and shall not exceed 100 feet in length. Swing Ties will be made to prominent permanent features such as building corners.
6. If adequate record data is not provided as defined above, the Owner may perform an as-built survey and deduct the cost from monies due the Contractor.

END OF HDPE INSULATED PIPE AND FITTINGS

SIGNATURE AND VERIFICATION OF ANTI-COLLUSION

By signing below, I hereby acknowledge the following:

1. Bidder, nor any of their representatives or third party mandated by Bidder, has attempted to contact City representatives or members of the selection committee for the purpose of influencing their choice, judgment or recommendation relating to the contract, or with members of the City Council to influence their decision.
2. Bidder has produced the bid package without collusion, communication, agreement or arrangement with a competitor with regards to price, methods, factors or formulas for setting prices, to the decision to submit a bid package or to present a bid package that does not comply, directly or indirectly, with specifications contained in the Request for Bids.
3. Neither the Bidder nor any of its representatives engaged in discrimination, intimidating measures, influence peddling or corruption or entered into any form of collusion, communication, agreement or arrangement with other suppliers or third parties relating to a contract with the City of Bethel.
4. If selected, neither Bidder nor any of its representatives will engage in discriminating against any person because of race, color, religion (creed), gender, gender expression or identity, age, national origin (ancestry), disability, marital status, sexual orientation, military status, political affiliation, or any other status protected by law.
5. Failure to complete and attach this sworn declaration shall result in automatic rejection of the bid.
6. In the event that the Bidder, or a representative or third party mandated by them, has violated any of the statements above, the Bidder's proposal shall be automatically rejected.
7. The City may cancel a contract that has been awarded if the City becomes aware, during the course of the contract, of a situation contravening any sworn statement required by this section.

Signature Date

Printed Name

ACKNOWLEDGEMENT

STATE OF ALASKA

Before me, a Notary Public, personally appeared the above named and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to me this _____ day of _____, 20____.

Notary Public Signature: _____
Commission Expires: _____

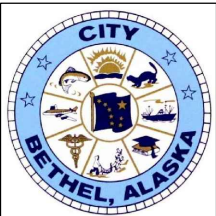
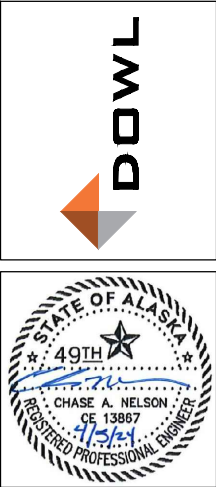
Anti-Collusion



DOG POUND FACILITY

CITY OF BETHEL

BETHEL, ALASKA



PREPARED FOR:
CITY OF BETHEL
P.O. BOX 1388
BETHEL, AK 99559



SHEET LIST

- GENERAL
G001 - COVER SHEET
- CIVIL
C100 - LEGEND, GENERAL NOTES AND ABBREVIATIONS
C101 - SURVEY CONTROL SHEET
C102 - SITE LAYOUT PLAN
C501 - SITE SECTIONS AND DETAILS SHEET
C502 - UTILITY DETAILS SHEET
- ARCHITECTURAL
A100 - GENERAL NOTES, ABBREVIATIONS, LOCATION MAP AND SHEET INDEX
A101 - FLOOR PLAN
A102 - REFLECTED CEILING PLAN
A103 - ROOF PLAN
A201 - EXTERIOR ELEVATIONS
A202 - EXTERIOR ELEVATIONS
A301 - BUILDING SECTIONS
A302 - BUILDING SECTIONS
A303 - WALL SECTIONS
A304 - RAMP AND STAIR SECTIONS
A401 - INTERIOR ELEVATIONS
A402 - INTERIOR ELEVATIONS
A403 - INTERIOR ELEVATIONS
A404 - INTERIOR ELEVATIONS
A501 - EXTERIOR WINDOW AND DOOR DETAILS
A502 - EXTERIOR WALL AND ROOF DETAILS
A503 - TYPICAL RAILING ELEVATIONS AND SECTIONS
A601 - SCHEDULES
- LS101 - LIFE SAFETY PLANS
- STRUCTURAL
S001 - GENERAL NOTES
S101 - PILE PLAN
S102 - FIRST FLOOR FRAMING PLAN
S103 - ROOF FRAMING PLAN
S501 - DETAILS
- MECHANICAL
M001 - MECHANICAL LEGEND, ABBREVIATIONS AND SCHEDULES
M002 - MECHANICAL LEGEND, ABBREVIATIONS AND SCHEDULES
M101 - VENTILATION FLOOR PLAN
M102 - UNDERFLOOR VENTILATION FLOOR PLAN
M103 - ENLARGED MECHANICAL ROOM PLAN
M201 - POTABLE WATER PIPING FLOOR PLAN
M202 - PLUMBING UNDERFLOOR PLAN
M301 - MECHANICAL DETAILS
- ELECTRICAL
E001 - ELECTRICAL LEGEND, ABBREVIATIONS AND SCHEDULES
E101 - ELECTRICAL SITE PLAN
E201 - ELECTRICAL FLOOR PLAN - LIGHTING
E202 - ELECTRICAL FLOOR PLAN - POWER
E301 - ENLARGED PROCEDURE AND MECHANICAL ROOMS
E401 - POWER ONE-LINE AND PANEL SCHEDULES
E501 - ELECTRICAL DETAILS

PREPARED BY:



BID DOCUMENTS
ISSUED FOR AGENCY REVIEW

CITY OF BETHEL
DOG POUND FACILITY
BETHEL, ALASKA

Revisions		
No.	Description	Date

Drawn by MC	Date 4/5/2024
Checked CAN	Job No. 50105.16

Sheet Contents
COVER SHEET

Sheet No.
G001

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LEGEND

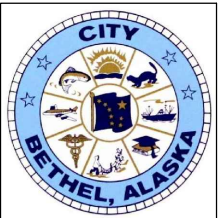
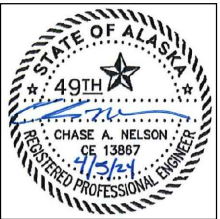
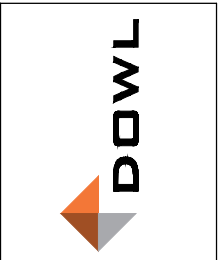
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		ROW CENTERLINE
		EASEMENT LINE
		CONTROL POINT NUMBER
		CONTROL POINT SYMBOL
		ALCAP
		TEMPORARY BENCH MARK
		SURVEY MONUMENT
		BUILDING
		CONCRETE
		EDGE OF PAVEMENT
		WATER LINE
		VALVE / KEYBOX
		FIREHYDRANT
		CAP
		SEWER LINE
		SEWER MANHOLE
		AIR RELEASE VALVE
		SEWER PLUG VALVE
		YARD DRAIN
		COMMUNICATION LINE
		COMMUNICATIONS PEDESTAL
		OVERHEAD ELECTRIC LINE
		UNDERGROUND ELECTRIC LINE
		POWER POLE / UTILITY POLE
		LIGHTPOLE
		ANCHOR
		ELECTRIC PEDESTAL
		ELECTRIC METER
		JUNCTION BOX
		BOLLARD
		MAIL BOX
		TRANSFORMER
		FENCE
		SIGN
		SHRUB
		BOULDER
		VEGETATION
		GEOTECHNICAL BORING LOCATION
		SECTION INDICATOR
		DETAIL BUBBLE
		BREAK LINE
		REVISION INDICATOR
		DEMOLITION LIMITS

GENERAL NOTES

- TOGETHER THE DRAWINGS AND CONSTRUCTION SPECIFICATIONS CONSTITUTE A COMPLETE AND INSEPARABLE SET OF CONSTRUCTION DOCUMENTS, INCLUDING ALL NECESSARY CONSTRUCTION AND MATERIALS SPECIFICATIONS TO ENSURE THE PROJECT AS CONSTRUCTED MEETS THE DESIGN INTENT. ANY CHANGES TO CONSTRUCTION MATERIALS SHALL BE APPROVED IN WRITING IN ADVANCE BY THE RESPONSIBLE REGISTERED PROFESSIONAL.
- THIS IS A STANDARD SHEET OF SYMBOLOGY AND NOT ALL SYMBOLS MAY HAVE BEEN USED IN THIS PLANSET.
- EXISTING GROUND CONTOURS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY SITE CONDITIONS.
- LOCATIONS OF UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS PRIOR TO CONSTRUCTION. EXERCISE CAUTION DURING EXCAVATION TO EXPOSE UTILITIES WITHOUT DAMAGE. CONTRACTOR SHALL CALL ALASKA DIG LINE (811) FOR UTILITY LOCATES BEFORE DIGGING PER A.S. 42.30.410.
- VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES ENCOUNTERED PRIOR TO CONSTRUCTION. REPORT DISCREPANCIES FROM PLANS IMMEDIATELY TO ENGINEER. RECORD LOCATIONS AND CHANGES TO UTILITIES IN SURVEY NOTES AND ON AS-BUILT DRAWINGS.
- RESTORE ALL DISTURBED PROPERTY OUTSIDE OF WORK LIMITS TO ORIGINAL CONDITIONS.
- THE PLAN DRAWINGS DO NOT SHOW ALL LANDSCAPING AND VEGETATION TO BE ENCOUNTERED DURING CONSTRUCTION. CONTRACTOR SHOULD HAVE A PLAN TO REMOVE AND REPLACE OR WORK AROUND ANY VEGETATION. LITTLE OR NO VEGETATION IS ANTICIPATED WITHIN THE WORK AREA.
- ALL DESIGNATED ITEMS TO BE REMOVED OR DEMOLISHED SHALL BE DISPOSED OF AT AN OFF-SITE, PERMITTED LOCATION UNLESS OTHERWISE NOTED ON THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL FOLLOW ALL CITY OF BETHEL REGULATIONS FOR NOISE, HOURS OF OPERATIONS, AND DUST CONTROL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS AS NECESSARY TO COMPLY WITH FEDERAL, STATE, AND MUNICIPAL LAWS THAT PROHIBIT UNPERMITTED DISCHARGE OF POLLUTANTS, INCLUDING SEDIMENTS, THAT ARE A RESULT OF EROSION AND OTHER CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONDUCT ALL WORK SO SEDIMENT IS NOT TRANSPORTED ONTO THE ROADWAY OR ADJACENT PROPERTY
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY DEWATERING PERMITS PRIOR TO EXCAVATION. CONTRACTOR IS RESPONSIBLE FOR THE QUALITY OF EFFLUENT FROM DEWATERING PROCESSES AND ANY CONSTRUCTION RUNOFF.
- ALL COMPACTION SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- WHERE ENCOUNTERED CONDITIONS DIFFER FROM THOSE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO THE PERFORMANCE OF WORK.
- CONSTRUCTION SAFETY AND SANITATION FACILITIES SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK IN THE AREA WITH THE PROJECT ENGINEER AND COB STAFF PRIOR TO BEGINNING WORK ON THE PROJECT.
- THE CONTRACTOR MUST COMPLY WITH ALL PERMIT CONDITIONS AND RESTRICTIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A SAFE SITE DURING BOTH WORKING AND NON-WORKING HOURS.
- REFER TO THE PROJECT SPECIFICATION FOR FACILITY SHUTDOWN ALLOWANCES AND CONSTRUCTION CONSTRAINTS.
- EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTALLATION AND STARTUP REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFICATIONS REQUIRED, IF ANY, TO ACCOMMODATE ALTERNATE EQUIPMENT.

ABBREVIATIONS

ACP	ASPHALT CONCRETE PAVEMENT	LF	LINEAR FEET
ADA	AMERICANS WITH DISABILITIES ACT	LT	LEFT
ARFS	AS REQUIRED FOR SAFETY	MAX	MAXIMUM
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	MCL	MATERIALS CERTIFICATION LIST
ATM	ALASKA TRAFFIC MANUAL	ME	MATCH EXISTING
AVAP	AS VERTICAL AS POSSIBLE	MIN	MINIMUM
AWWA	AMERICAN WATER WORKS ASSOCIATION	MJ	MECHANICAL JOINT
BLVD	BOULEVARD	N	NORTH
BOP	BOTTOM OF PIPE	NFS	NON FROST SUSCEPTIBLE
BV	BUTTERFLY VALVE	NO	NUMBER
CI	CAST IRON	NSF	NATIONAL SANITATION FOUNDATION
CL	CLASS	NTS	NOT TO SCALE
CMP	CORRUGATED METAL PIPE	O&M	OPERATION & MAINTENANCE
CO	CLEANOUT	OC	ON CENTER
COB	CITY OF BETHEL	OH	OVERHEAD
CONC	CONCRETE	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
CTE	CONNECT TO EXISTING	PCC	PORTLAND CEMENT CONCRETE
CU	COPPER	PE	PLAIN END
CY	CUBIC YARD	PI	POINT OF INTERSECTION
Ø	DIAMETER	PPI	PLASTIC PIPE INSTITUTE
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DEC	DEPARTMENT OF ENVIRONMENTAL CONSERVATION	PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE	R	RADIUS
DR	DIMENSION RATIO	R&R	REMOVE & REPLACE
EA	EACH	ROW	RIGHT-OF-WAY
EG	EXISTING GRADE	RT	RIGHT
ELEV	ELEVATION	S	SOUTH
E	EXISTING	SCH	SCHEDULE
FF	FINISH FLOOR	SS	SANITARY SEWER
F&I	FURNISH & INSTALL	STA	STATION
FL	FLANGE	STD	STANDARD
FT	FEET	T	TELEPHONE
G	GAS	TB	TEST BORING
GB	GRADE BREAK	TBD	TO BE DETERMINED
GV	GATE VALVE	TYP	TYPICAL
HDPE	HIGH DENSITY POLYETHYLENE	UG	UNDERGROUND
ID	INSIDE DIAMETER	VB	VALVE BOX
INV	INVERT	W	WEST
LB	POUNDS	W/O	WITHOUT
LC	LEVELING COURSE	WT	WEIGHT



CITY OF BETHEL
DOG POUND FACILITY
BETHEL, ALASKA

Revisions		
No.	Description	Date

Drawn by BRM	Date 4/5/2024
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Sheet Contents
LEGEND, GENERAL NOTES
AND ABBREVIATIONS

Sheet No.
C100

BID DOCUMENTS
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RIDGECREST DRIVE VICINITY

HORIZONTAL CONTROL

Coordinate System
This project is located entirely within the Kuskokwim River 2015 Low Distortion Projection (LDP) coordinate system. This LDP was developed in 2015 by the State of Alaska DOT&PF Central Region Survey Section. This LDP covers communities on and around the lower Kuskokwim River from the river's mouth to the community of Chuathbaluk. Bering Sea coastal communities from Chefnorak to Kongiganak are also included.

Basis of Coordinates
The Basis of Coordinates is NGS Station BET C (PID:DF3624). Said station is located within the fenced area of the Bethel Airport and has a NAD 83(2011) Position of Latitude 60°47'03.11084" N, Longitude 161°50'08.36533" W, Ellipsoid Height 42.527 meters. BET C has project coordinates of N 1034266.0567, E 582894.7332 U.S. Feet.

Basis of Bearings
The Basis of Bearings is a local plane bearing between NGS Station BET C (PID: DF3624) and NGS Station BET B (PID: DF3623). NGS Station BET B bears S 25°34'22.5" W a distance of 2672.876 feet from NGS Station BET C, all as determined by static GNSS techniques. NGS Station BET B has project coordinates of N 1031855.0249, E 581740.9608 U.S. Feet.

Kuskokwim River 2015 LDP Parameters
Linear Unit: U.S. Survey Feet
Datum: NAD83
Ellipsoid: GRS80
Projection: Hotine Oblique Mercator
Latitude of Center: 60°40'00" N
Longitude of Center: 162°00'00" W
Azimuth: 50°00'00"
False Northing: -15,500,000.0'
False Easting: -19,100,000.0'
Grid Scale Factor: 1.000002 (exact)

VERTICAL CONTROL

Basis of Vertical is Local Mean Tide Level, as determined from levels performed by Alaska DOT&PF between Tidal Benchmark No.6 (1970) and Tidal Benchmark No.7 (1970). A datum adjustment of -1.55 feet was applied to the published MLLW elevations per NOAA/NOS publication of 1/22/71, to arrive at project mean tide values.

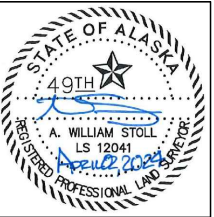
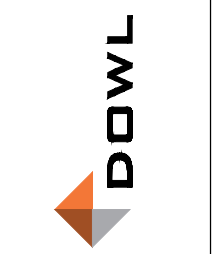
Benchmark No.6 (1970): a brass disk on copper coated rod, encased in a 4" concrete pipe broken off at cap level, is located +/-400 feet westerly along Third Avenue (Hoffman Highway) from its intersection with Main Street, +/-53 feet south of centerline, +/-20 feet south of utility pole #L1P70 and +/-15 feet north of the middle of a 2-story wood building. Project Elevation = 19.97'

Benchmark No.7 (1970): a brass disk on a copper coated rod, encased in a 4" concrete pipe broken off 0.4' below cap level, is located +/-750 feet westerly along Fourth Avenue from its intersection with Main Street and +/-8 feet north of the southeast corner of the bottom step leading to the main entrance of the National Guard Armory (under an elevated, metal grate walkway). Project Elevation = 25.57'

SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1042970.82	594484.60	36.51	ALCAP_BE-1
2	1043278.46	595742.67	39.89	ALCAP_BE-2

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CITY OF BETHEL
DOG POUND FACILITY
BETHEL, ALASKA

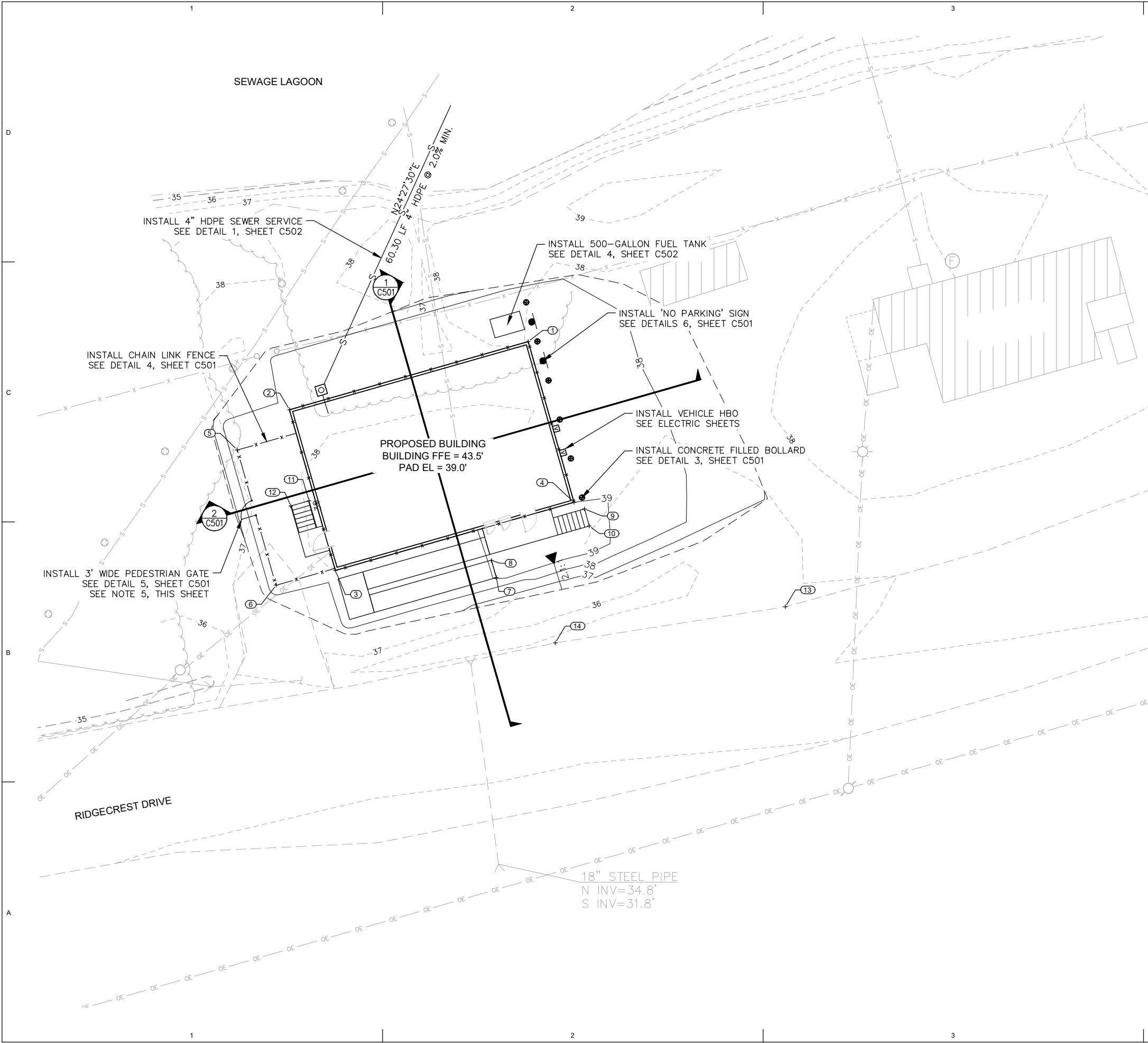
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Sheet Contents
SURVEY CONTROL SHEET

Sheet No.
C101

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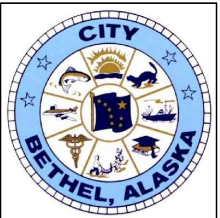
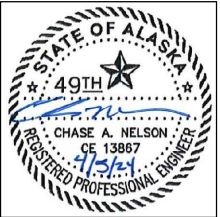
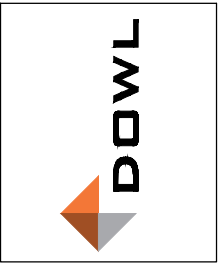


SITE PLAN NOTES

1. GRADE PAD AREA TO MAINTAIN DRAINAGE AWAY FROM BUILDING.
2. ALL GRADING WILL OCCUR WITHIN THE LIMITS OF THE EXISTING PAD.
3. SEE STRUCTURAL SHEETS FOR PILING INFORMATION.
4. CONTRACTOR IS TO DISPOSE OF EXCAVATED MATERIAL AT A PERMITTED LOCATION. IF CONTRACTOR ENCOUNTERS CONTAMINATED SOILS, MATERIAL MUST BE DISPOSED OF IN A MANNER CONSISTENT WITH ADEC REGULATIONS.
5. COORDINATE LOCATION OF MAN GATE WITH OWNER PRIOR TO CONTRACTOR INSTALLATION. FENCING ON SIDES OF EXERCISE YARD TO BE KEYED IN 1' BELOW FINISH GRADE.

POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1043186.92	594808.35	39.00	BUILDING CORNER
2	1043173.49	594761.31	39.00	BUILDING CORNER
3	1043141.84	594770.35	39.00	BUILDING CORNER
4	1043155.27	594817.39	39.00	BUILDING CORNER
5	1043165.56	594751.03	38.73	FENCE CORNER
6	1043138.99	594758.69	38.76	FENCE CORNER
7	1043140.43	594802.08	39.33	BTM RAMP
8	1043143.80	594801.12	39.33	BTM RAMP
9	1043153.95	594819.45	39.33	BTM STRS
10	1043150.59	594820.41	39.33	BTM STRS
11	1043155.57	594765.17	38.94	BTM STRS
12	1043154.54	594761.57	38.94	BTM STRS

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CITY OF BETHEL
DOG POUND FACILITY
BETHEL, ALASKA

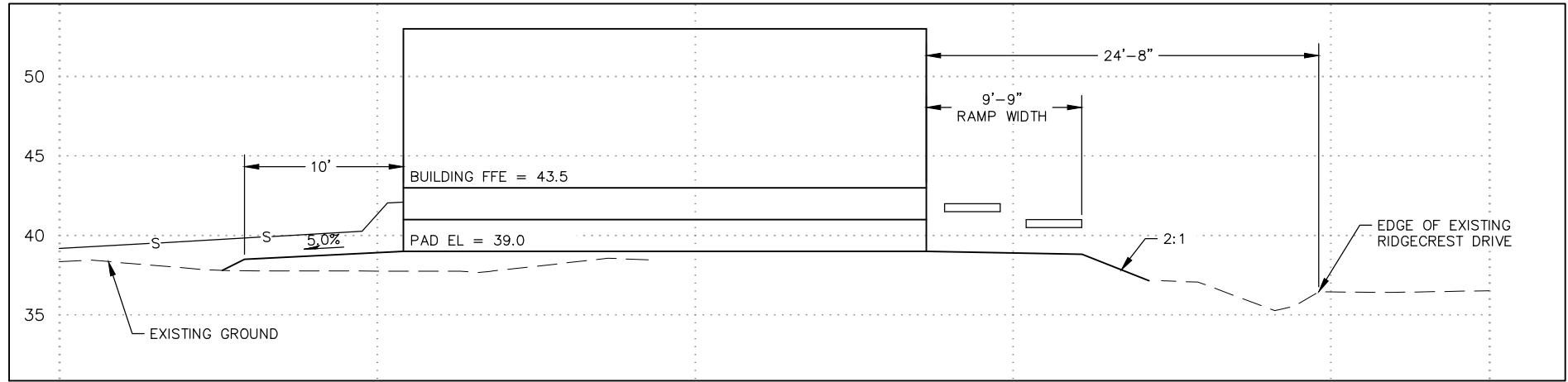
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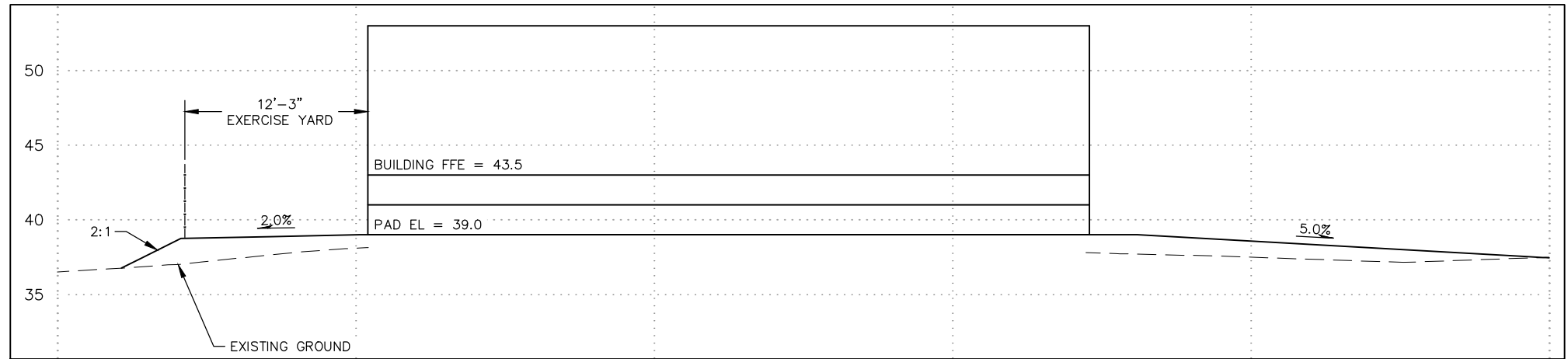
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SITE LAYOUT PLAN

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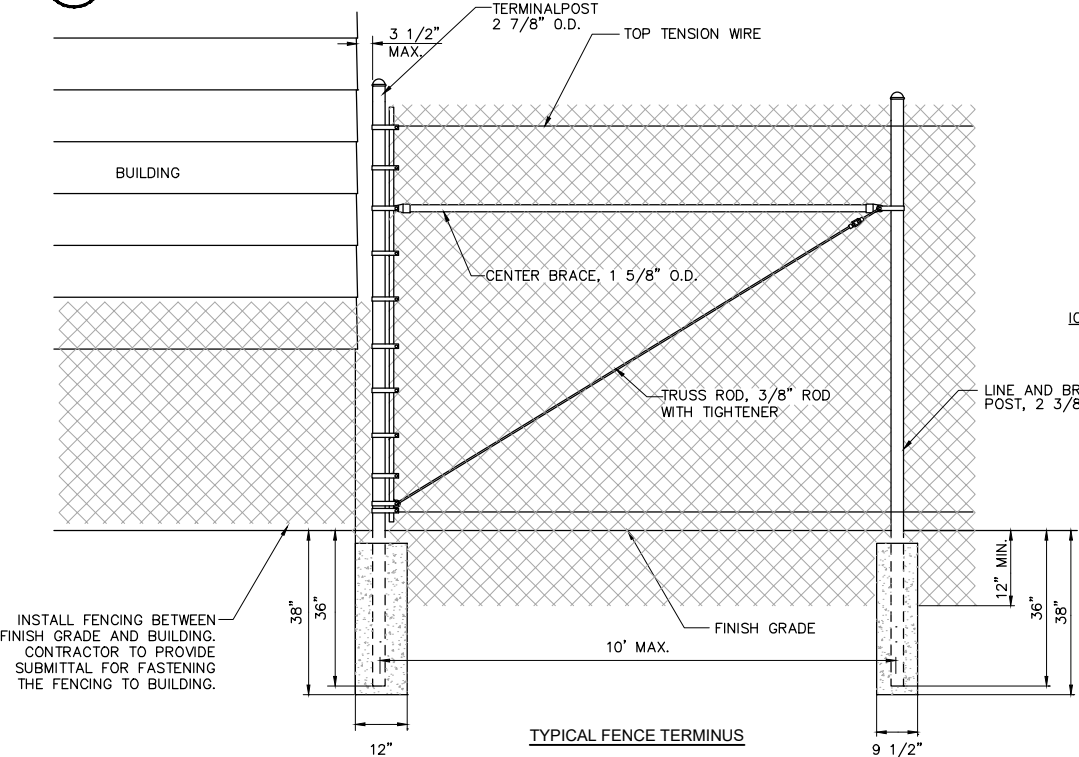
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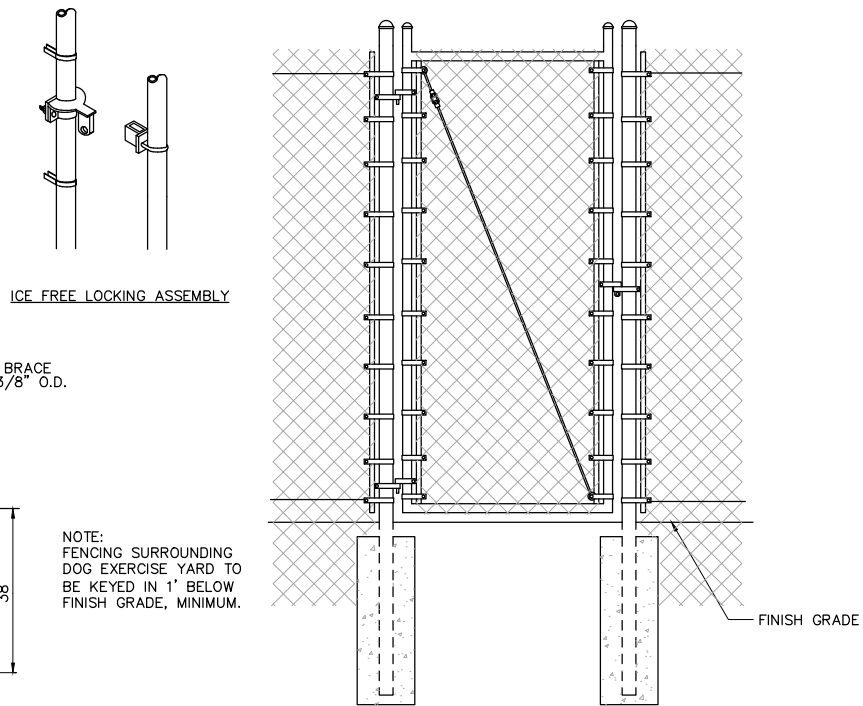
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C501
TYPICAL SECTION 1
SCALE: 1" = 5'



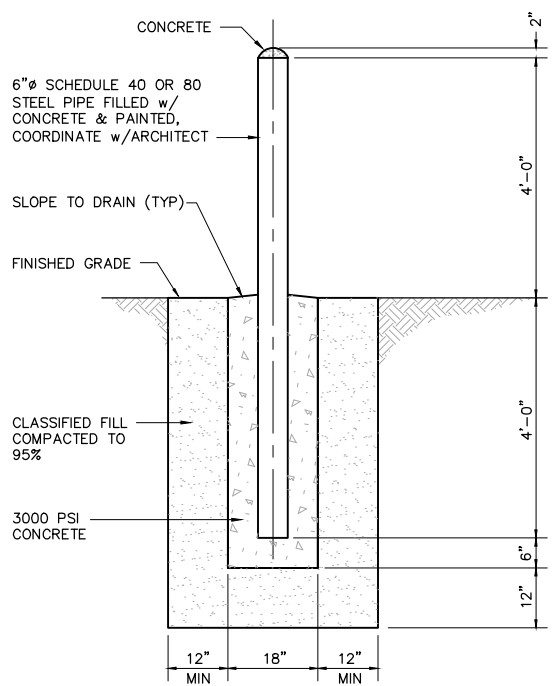
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C501
TYPICAL SECTION 2
SCALE: 1" = 5'



4
C501
FENCE DETAIL
NTS

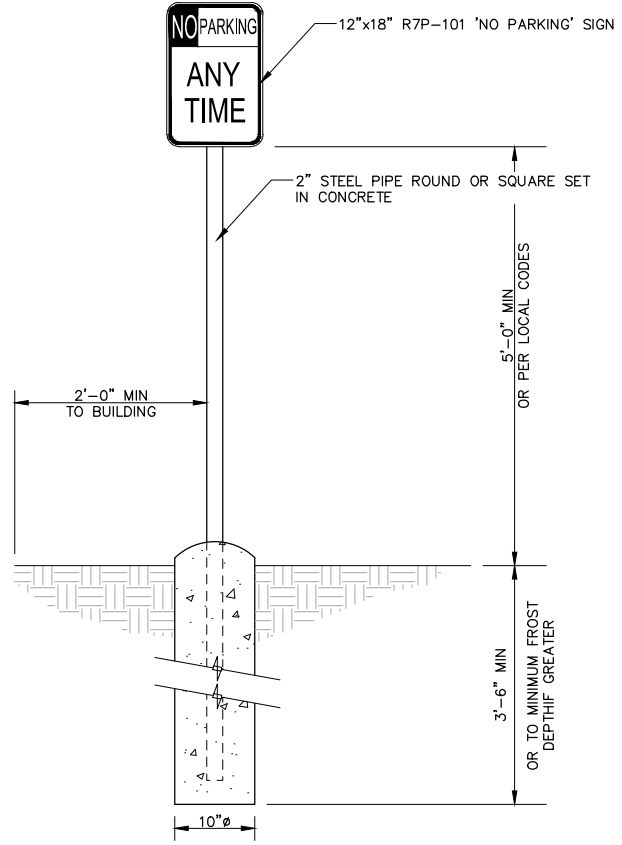


5
C501
PEDESTRIAN GATE DETAIL
NTS



NOTE:
POSTS SHALL BE PRIMED AND RECEIVE TWO COATS MINIMUM OF PAINT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. COORDINATE COLOR WITH ARCHITECT.

3
C501
CONCRETE BOLLARD DETAIL
NTS



6
C501
NO PARKING SIGN FOUNDATION
NTS

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CITY OF BETHEL
DOG POUND FACILITY
BETHEL, ALASKA

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No.	Description	Date

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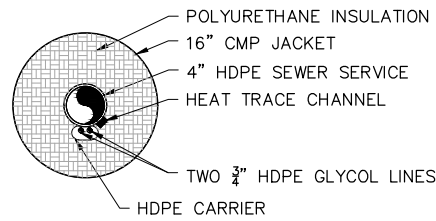
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Job No.
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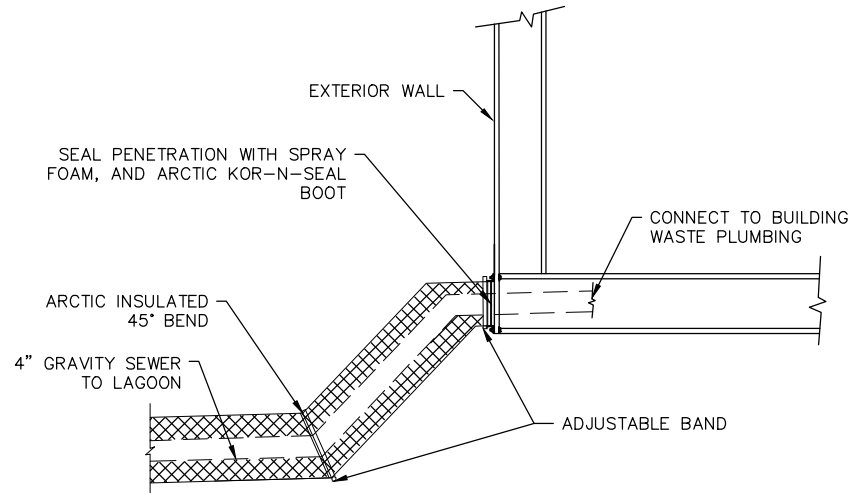
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SITE SECTIONS AND
DETAILS SHEET

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C501

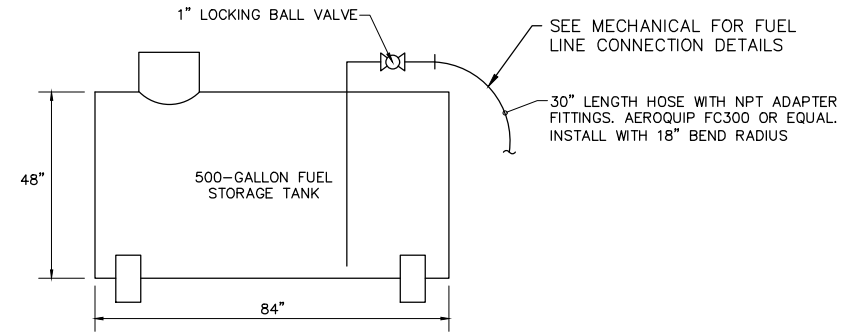
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1 GRAVITY SEWER SERVICE
C502 NTS

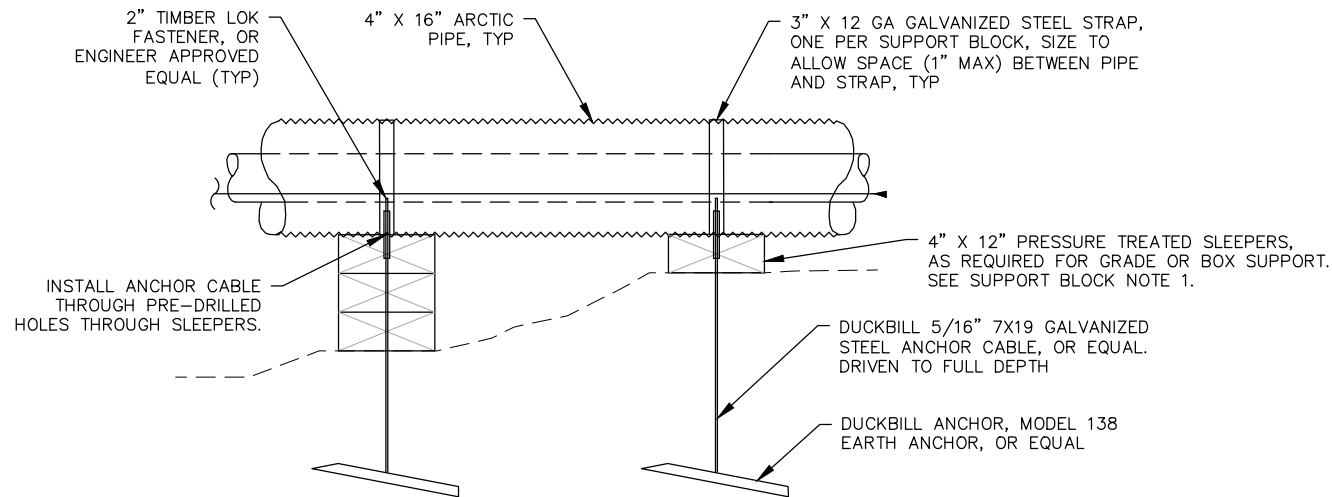


2 SEWER SERVICE CONNECTION TO BUILDING
C502 NTS

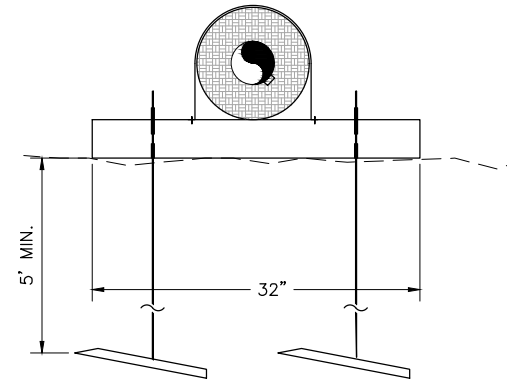


FUEL STORAGE TANK: 500 GALLON NOMINAL CAPACITY, DOUBLE-WALL, SKID-MOUNTED, UL142 LISTED. PROVIDE TAPPINGS FOR 4" FILL, NORMAL AND EMERGENCY VENTS (FOR BOTH INNER AND OUTER TANKS), AND TOP MOUNTED OUTLET AND RETURN. PROVIDE OUTLET DRAW PIPE, LOCKABLE FILL CAP, FILL CONTAINMENT BOX, FILL RISER WITH OVERFILL PROTECTION VALVE, SCREENED NORMAL VENTS, EMERGENCY VENTS, AND LOCKABLE OUTLET BALL VALVE.
TANK FOOTPRINT: 84" NOMINAL LENGTH 48" NOMINAL WIDTH

4 500-GALLON FUEL TANK
C502 NTS



3 TIMBER SUPPORT BLOCK DETAILS
C502 NTS

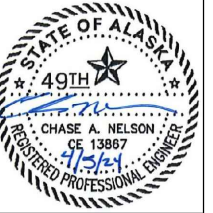


GENERAL NOTES

1. ALL METAL PARTS AND FASTENERS SHALL BE HOT DIPPED GALVANIZED. FIELD CUTS SHALL BE FIELD-TREATED WITH AN APPROVED COLD GALVANIZING PRODUCT.

SUPPORT BLOCK NOTES

1. AT THE CONTRACTOR'S OPTION, THE TOP 4"x12" PRESSURE TREATED TIMBER MAY BE PLACED ON IMPORTED GRAVEL WITH A 3:1 SLOPE ON GEOTEXTILE FABRIC, IN LIEU OF ADDITIONAL PRESSURE TREATED TIMBER SLEEPERS. PRESSURE TREATED TIMBER SLEEPERS MUST BE SECURED WITH AN ANCHOR AS SHOWN IN DETAIL 6.
2. INSTALL SUPPORT BLOCKS EVERY 10 FEET MAX. UNLESS INDICATED OTHERWISE IN NOTES.
3. SUPPORT BLOCKS SHALL BE PLACED BENEATH EACH HORIZONTAL BEND.



CITY OF BETHEL
DOG POUND FACILITY
BETHEL, ALASKA

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Sheet Contents
UTILITY DETAILS SHEET

BID DOCUMENTS
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Sheet No.
C502

Autodesk Docs://18020.11 Bethel Dog Pound Blg Replacement/18020.11 Bethel Dog Pound Blg ReplacementLvt

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ARCHITECTURAL ABBREVIATIONS					
& < @ CL o #	AND	F.O.S.	FACE OF STUD	PLYWD	PLYWOOD
	ANGLE	F.O.	FACE OF (Conc. etc.)	PR	PAIR
	AT	F.R.P.	FIBER REINFORCED PANEL	PREFAB	PREFABRICATED
	CENTERLINE	FRPF	FIREPROOFING	PRMA	PROTECTED MEMBRANE ROOF ASSEMBLY
	DEGREE	FRT	FIRE-RETARDENT TREATED	PROJ	PROJECT
	NUMBER	FT	FOOT OR FEET	PT	POINT AND PAINT
		FTG	FOOTING	P.T.	PRESERVATIVE TREATED
		FURR	FURRING	PTD	PAPER TOWEL DISPENSER
		FUT	FUTURE	PVC	POLYVINYL CHLORIDE
D	ABV	GA	GAUGE	R	RISER OR RADIUS
	AC	GAL	GALLON	R.D.	ROOF DRAIN
	ACP	GALV	GALVANIZED	REF	REFERENCE
	ACT	G.B.	GRAB BAR	REFR	REFRIGERATOR
	ACOUS	G.I.	GALVANIZED IRON	REINF	REINFORCING
	ACOUS	GL	GLASS	REQ	REQUIRED
	ADD	GT	GLASS TYPE	R.H.	RIGHT HAND
	AFF	GWB	GYPSSUM WALL BOARD	R.L.	RAIN LEADER
	AHU	GYM	GYMNASIUM	RM	ROOM
	ALT	GYP.	GYPSSUM	R.O.	ROUGH OPENING
C	ALUM	H.B.	HOSE BIB	R.O.W.	RIGHT OF WAY
	APPROX	H.C.	HOLLOW CORE	RTU	ROOF TOP UNIT
	ARCH	HDWD	HARDWOOD		
	ASPH	HDWR	HARDWARE	S	SOUTH
	AVG	H.M.	HOLLOW METAL	SAN	SANITARY
		H.M.F.	HOLLOW METAL FRAME	S.C.	SOLID CORE
		HORIZ	HORIZONTAL	SCHED	SCHEDULE
		H.P.	HIGH POINT	SE	SOUTHEAST
		HR	HOUR	SECT	SECTION
		HT	HEIGHT	SHEATH	SHEATHING
B	B.O.	HW	HOT WATER	SHT	SHEET
	B.S.	HWY	HIGHWAY	SIM	SIMILAR
	BTU	I.D.	INSIDE DIAMETER	SND	SANITARY NAPKIN DISPENSER
	BUR	(") OR IN	INCHES	SPEC	SPECIFICATIONS
		IHM	INSULATED HOLLOW METAL	SQ	SQUARE
		INSUL	INSULATION	S.S.	SANITARY SEWER
		INT	INTERIOR	S.ST.	STAINLESS STEEL
		JAN	JANITOR	STD	STANDARD
		JT	JOINT	STL	STEEL
				STOR	STORAGE
A	CAB	KIT	KITCHEN	STRUCT	STRUCTURAL
	C.B.	LAB	LABORATORY	ST.S	STORM SEWER
	CEM	LAM	LAMINATE OR LAMINATED	SUSP	SUSPENDED
	C.I.	LAV	LAVATORY	SV	SHEET VINYL
	CLG	LB	POUND	SW	SOUTHWEST
	CLR	LH	LEFT HAND	SYM	SYMMETRICAL
	C.M.P.	LL	LIVE LOAD	TB	TACKBOARD
	CMU	LL	LIMITS OF WORK	TBHM	THERMALLY- BROKEN HOLLOW METAL
	COL	L.L.W.	LOW POINT	TEL	TELEPHONE
	COMP	L.P.		TEMP	TEMPORARY
C	CONC	MAT'L	MATERIAL	TERR	TERRAZZO
	CONSTR	MAX	MAXIMUM	T&G	TONGUE AND GROOVE
	CONT	MECH	MECHANICAL	THRU	THROUGH
	COOR	MET OR MTL	METAL	T.O.	TOP OF (eg CONCRETE)
	CORR	MFR	MANUFACTURER	T.O.S.	TOP OF STEEL
	C.R.	MH	MANHOLE	TV	TELEVISION
	C.R.C.	MIN	MINIMUM OR MINUTE	TYP	TYPICAL
	C.T.	MISC	MISCELLANEOUS	UAA	UNIVERSITY OF ALASKA ANCHORAGE
	CTR	M.O.	MASONRY OPENING	UL	UNDERWRITERS LABORATORY
		MULL	MULLION	UNFIN	UNFINISHED
B	DBL	N	NORTH	UNO	UNLESS NOTED OTHERWISE
	DEPT	NE	NORTHEAST	VCT	VINYL COMPOSITION TILE
	D.F.	NIC	NOT IN CONTRACT	VERT	VERTICAL
	DET	NO	NUMBER	VEST	VESTIBULE
	DIA	NOM	NOMINAL	VR	VAPOR RETARDER
	DIA	NTS	NOT TO SCALE	VTR	VENT THROUGH ROOF
	DIM	NW	NORTHWEST	W	WEST
	DISP	O	OVER	W/	WITH
	DL	O.C.	ON CENTER	WC	WATER CLOSET
	DN	O.D.	OUTSIDE DIAMETER	WD	WOOD
A	DS	OFD	OVERFLOW DRAIN	W/O	WITHOUT
	DWG	OFF	OFFICE	WP	WATERPROOF
		OFCI	OWNER FURNISHED,	WT	WEIGHT
			CONTRACTOR INSTALLED		
			OWNER FURNISHED,		
			OWNER INSTALLED		
		OH	OVERHEAD		
		OPNG	OPENING		
		OPP	OPPOSITE		
A	F.B.	PARA	PARALLEL		
	F.D.	PART	PARTITION		
	FDN	PERF	PERFORATED		
	F.E.	PERM	PERMANENT		
	F.E.C.	PERP	PERPENDICULAR		
	FIN	P.I.C.	PRECAST INSULATED CONCRETE		
	FF	PL	PLATE		
	FF	P.LAM	PLASTIC LAMINATE		
	FLUOR	PLAST	PLASTER		
	F.O.B.				
A	F.O.F.				

PROJECT DESCRIPTION

CONSTRUCTION OF A NEW _____ S.F. DOG POUND SERVING THE CITY OF BETHEL, ALASKA. THIS FACILITY WILL BE USED FOR THE TEMPORARY HOUSING OF ANIMALS. IT INCLUDES A SMALL PUBLIC LOBBY FOR

STATE MAP

VICINITY MAP

KENNEL EQUIPMENT SCHEDULE								
Type Mark	Manufactu rer	Family	Model	Count	Comments	Depth	Width	Height
1	Mason Company	3R_UltraBase_Gate Single Front	Sani-Kennel ULTRA BASE	5	SEE MECHANICAL DRAWINGS FOR PLUMBING	7'-0"	3'-0"	7'-1"
2	Mason Company	3R_UltraBase_Gate Single Front	Sani-Kennel	1	SEE MECHANICAL DRAWINGS FOR PLUMBING	6'-0"	3'-0"	7'-1"
3	Mason Company	3R_UltraBase_Gate Single Front	Sani-Kennel	4	SEE MECHANICAL DRAWINGS FOR PLUMBING	4'-0"	3'-0"	7'-1"
4	Mason Company	Shelter Cat Condo - 3'x3' - Double on Casters	Shelter Cat Condo	2		2'-4"	3'-0"	6'-0"
5	MIDMARK	Midmark - Run Side Panel	181-0002-61 & 610-0427-22	1		1"	4' - 0"	4' - 10"
6	MIDMARK	Midmark - Standard Run Door Assembly, 35in W	181-0001-01	2	PROVIDE ALL HARDWARD FOR COMPLETE DOOR OPERATION, WITH NO GAPS GREATER THAN 1"	1"	2' - 11"	6' - 0"
7	MIDMARK	Midmark - 48in L Adjustable Height Grooming Tub with Backsplash	105-0346-11	1	SEE MECHANICAL DRAWINGS FOR PLUMBING	1' - 7"	4' - 0"	4' - 10 1/2"
TA-04		enMotion SOAP dispenser		1				

ARCHITECTURAL DRAWING CONVENTIONS						
NORTH ARROW	GRID LINES	PARTITION TYPE	BLDG./WALL SECTION	DISCIPLINE	DETAIL	EXTERIOR ELEVATION
REVISIONS	DOOR NUMBER	EQUIPMENT TAG	VERT. CONTROL POINT	WINDOW TYPE	ROOM TAG	INTERIOR ELEVATION

GENERAL PROJECT NOTES

- ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODES OUTLINED ON THE LIFE SAFETY PLAN, AND ALL OTHER STATE AND LOCAL CODES, INCLUDING ALL AMENDMENTS.
- ALL WORK SHALL CONFORM TO THE AMERICAN DISABILITIES ACT (A.D.A.) ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (A.D.D.A.G.) AND A.N.S.I. 117.1 UNLESS NOTED OTHERWISE.
- ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF CONCRETE, FACE OF C.M.U., TO CENTERLINE OF STRUCTURAL COLUMN, OR TO STRUCTURAL GRID-LINE UNLESS NOTED OTHERWISE.
- DIMENSIONS NOTED AS 'CLEAR' (OR CLR) SHALL BE TO FINISHED FACE.
- DO NOT SCALE THE DRAWINGS TO OBTAIN CONSTRUCTION DIMENSIONS.

Revisions

No.	Description	Date

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Checked Checker	Job No. 18020.11

Sheet Contents

GENERAL NOTES, ABBREVIATIONS, LOCATION MAP AND SHEET INDEX

Sheet No.

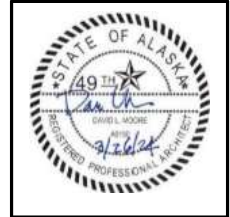
A100

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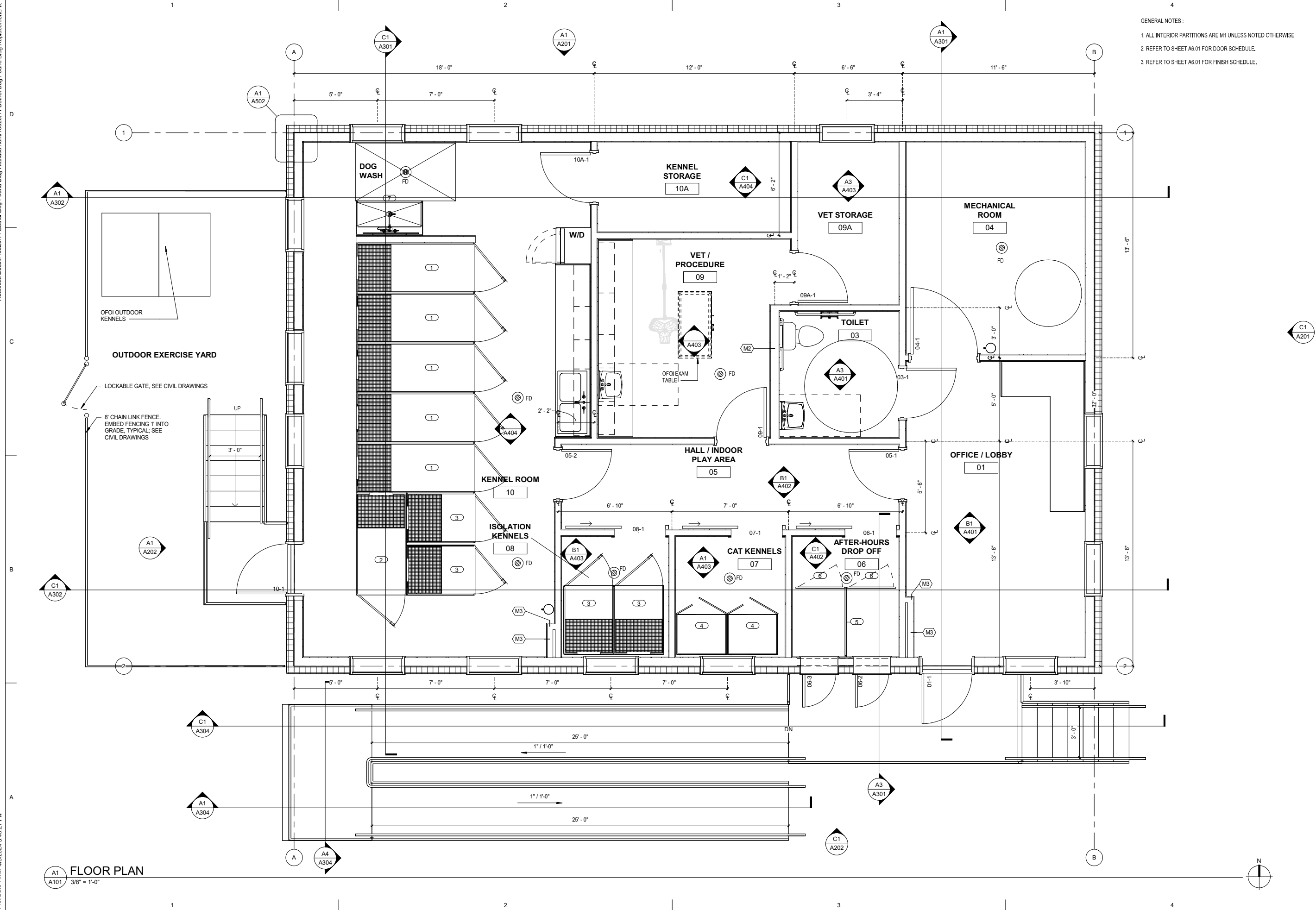


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DOG POUND REPLACEMENT

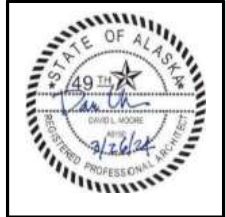
BETHEL, ALASKA

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Plot Date Time: 4/5/2024 3:45:27 PM



- GENERAL NOTES:
1. ALL INTERIOR PARTITIONS ARE M1 UNLESS NOTED OTHERWISE
 2. REFER TO SHEET A6.01 FOR DOOR SCHEDULE.
 3. REFER TO SHEET A6.01 FOR FINISH SCHEDULE.

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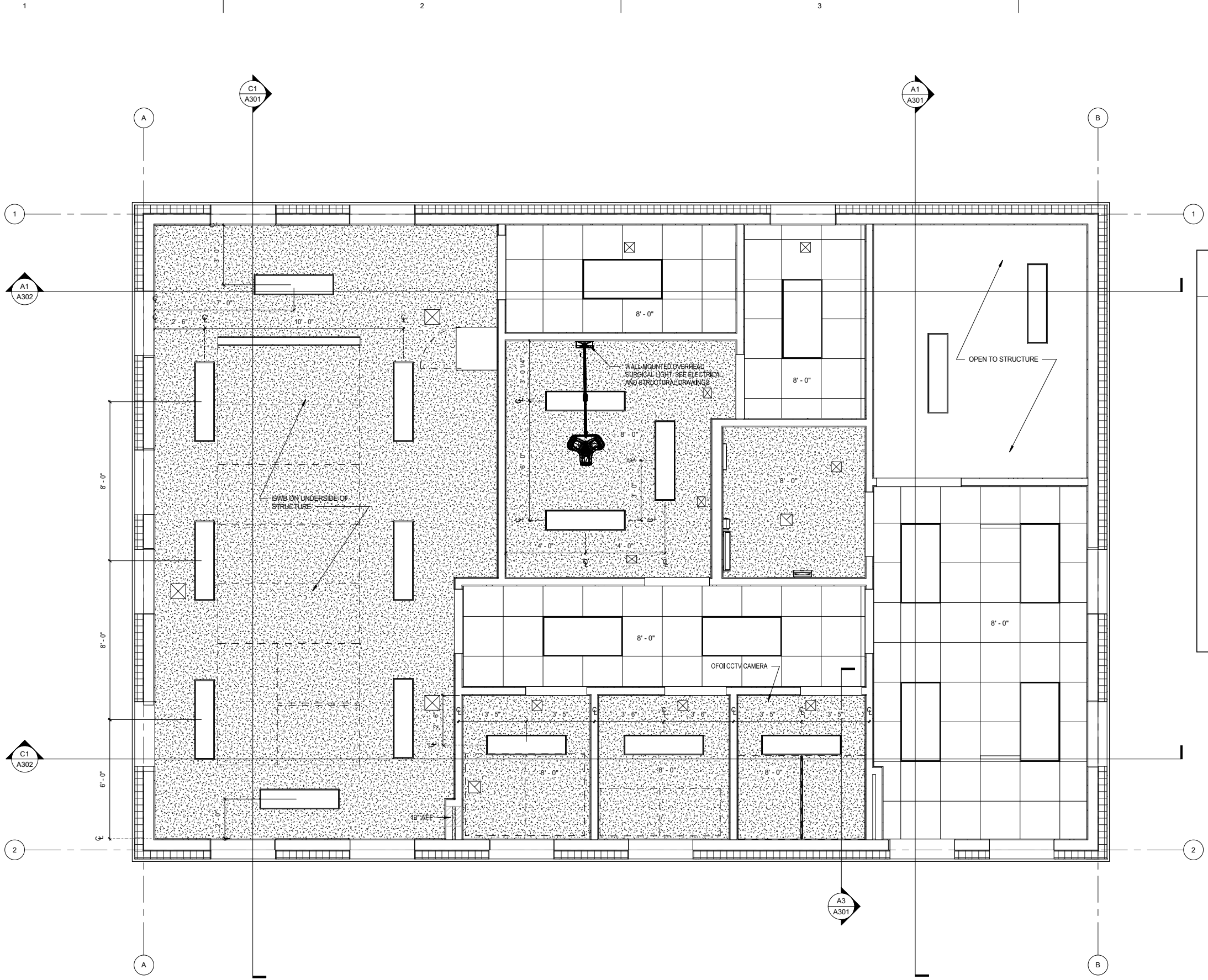
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No.	Description	Date

Drawn by SAS	Date 12.5.22
Checked DLM	Job No. 18020.11

Sheet Contents FLOOR PLAN

Sheet No.
A101

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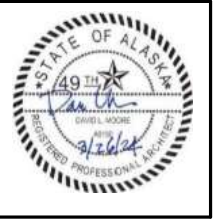


REFLECTED CEILING PLAN LEGEND

- 2x4 SUSPENDED ACOUSTICAL CEILING
- GYPSUM BOARD CEILING
- LIGHT FIXTURE, SEE ELECTRICAL DRAWINGS
- MECHANICAL DEVICE, SEE MECHANICAL DRAWINGS
- 0' - 0" A.F.F. CEILING HEIGHT AS INDICATED

REFLECTED CEILING PLAN
3/8" = 1'-0"

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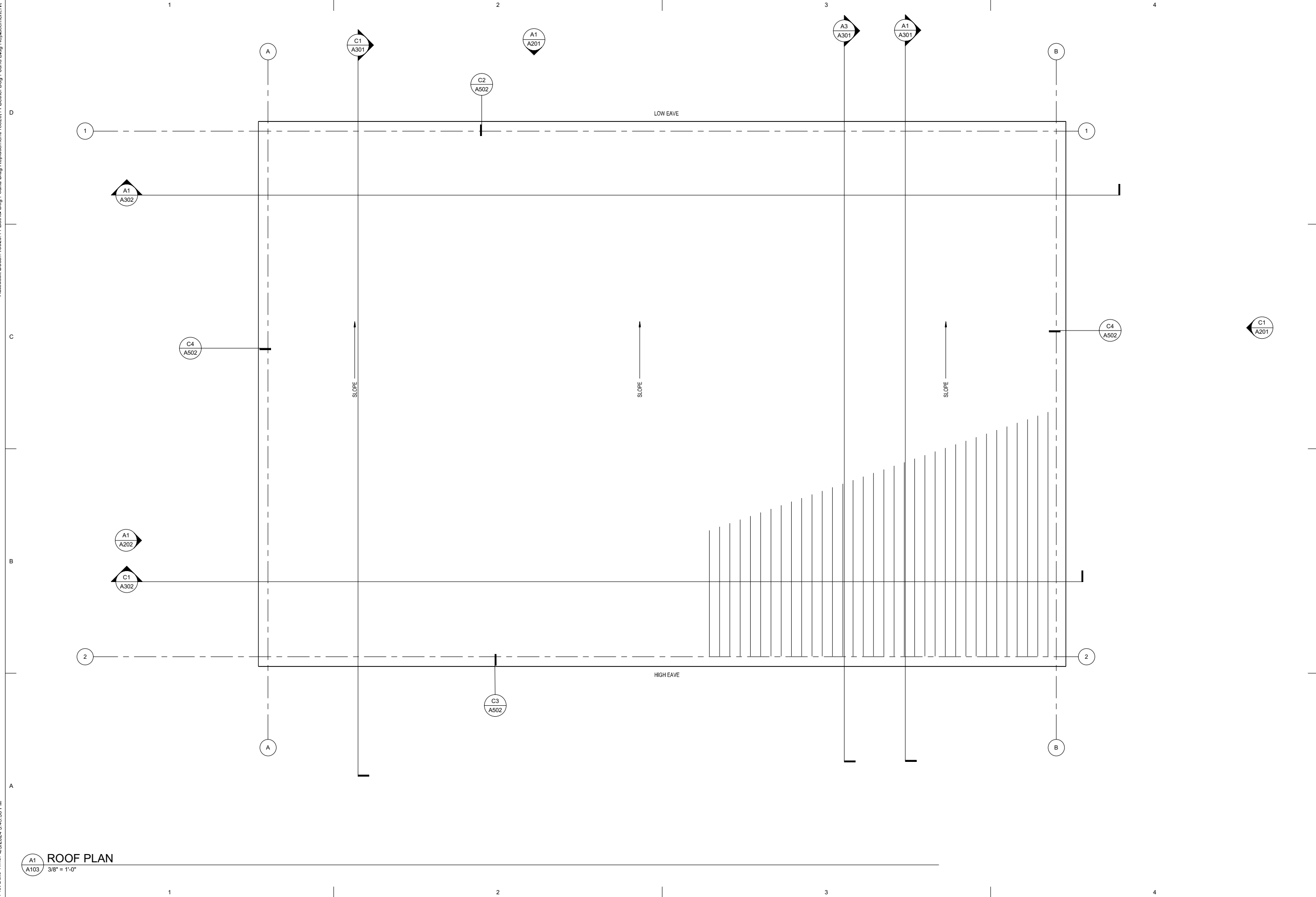
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Drawn by Author	Date 12.5.22
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Sheet Contents
REFLECTED CEILING PLAN

Sheet No.
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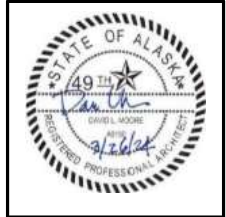
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ROOF PLAN
A1
A103
3/8" = 1'-0"



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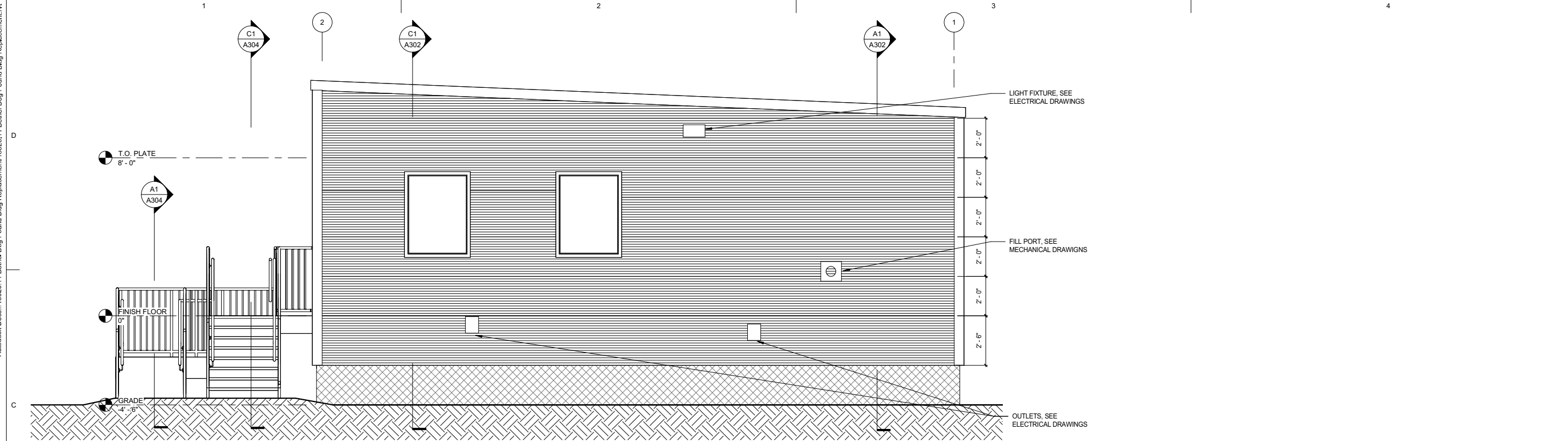
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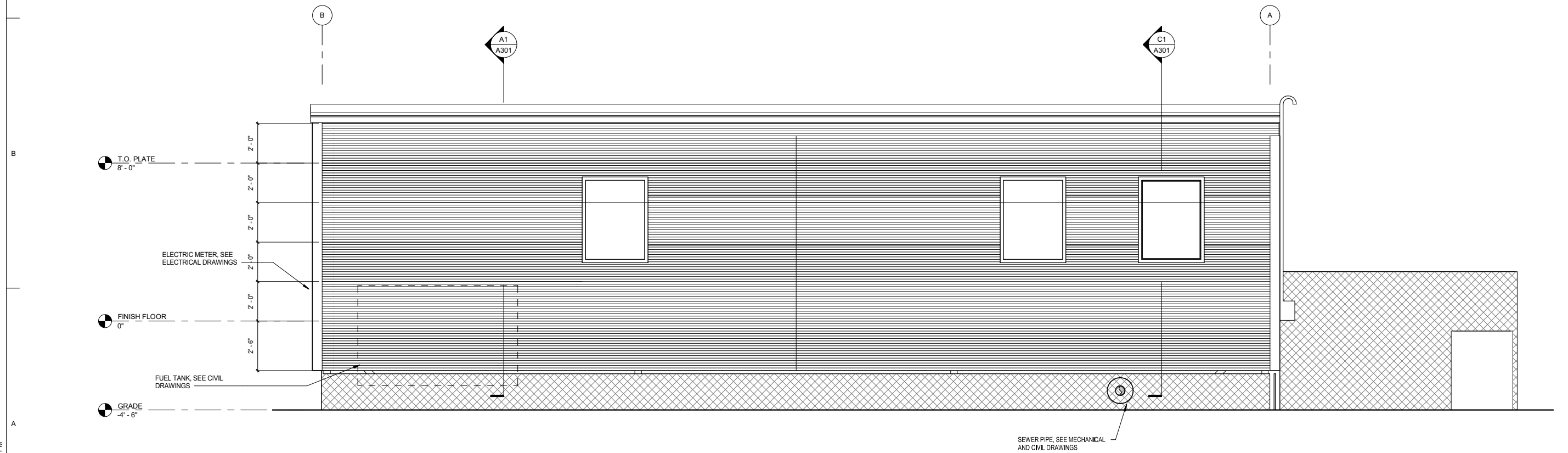
Sheet Contents
ROOF PLAN

Sheet No.
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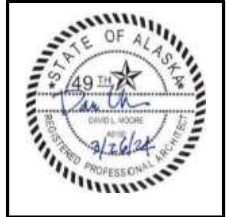
C1
A201
EAST ELEVATION
3/8" = 1'-0"



A1
A201
NORTH ELEVATION
3/8" = 1'-0"



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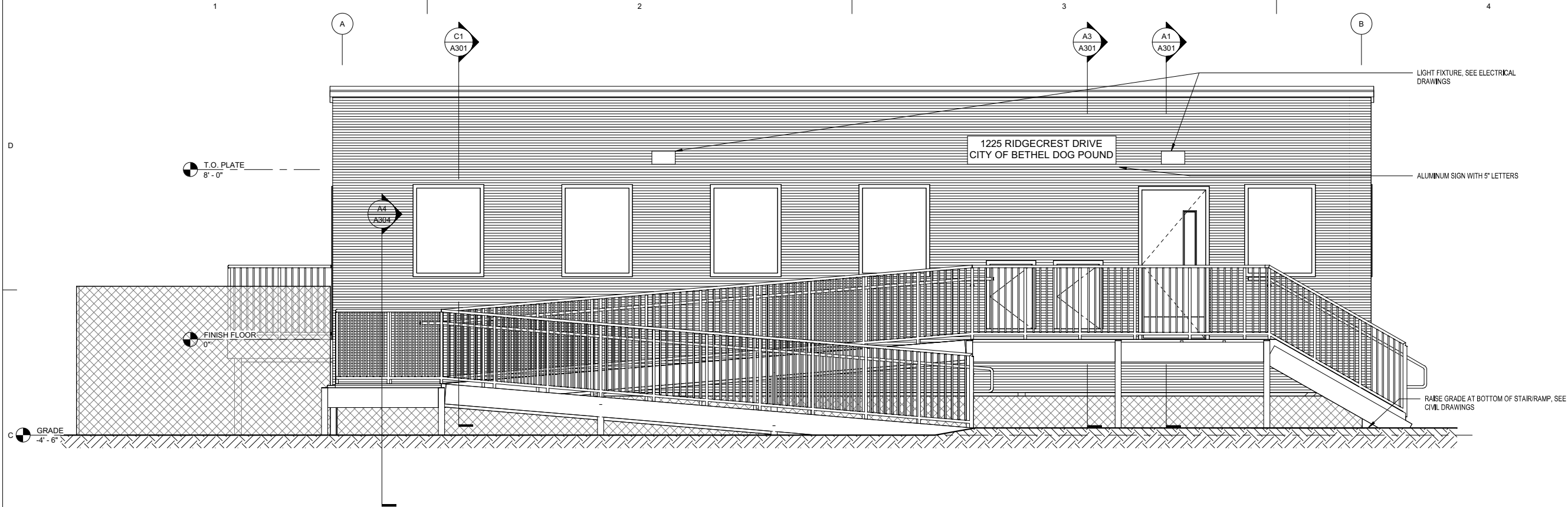
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No.	Description	Date

Drawn by Author	Date 12.5.22
Checked Checker	Job No. 18020.11

Sheet Contents EXTERIOR ELEVATIONS

Sheet No.
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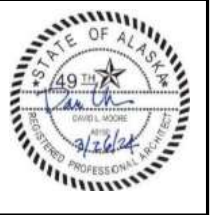


C1
A202
SOUTH ELEVATION
3/8" = 1'-0"



A1
A202
WEST ELEVATION
3/8" = 1'-0"

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BETHEL, ALASKA

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No.	Description	Date

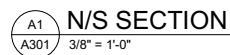
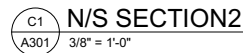
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Sheet Contents EXTERIOR ELEVATIONS

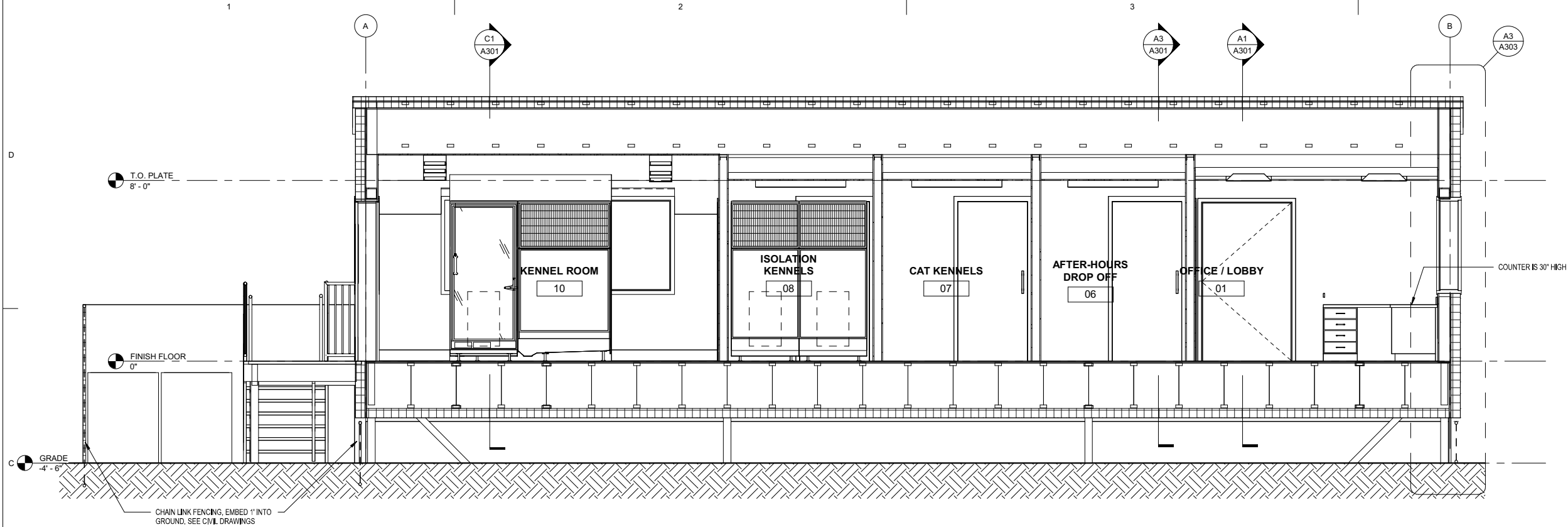
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Sheet No.

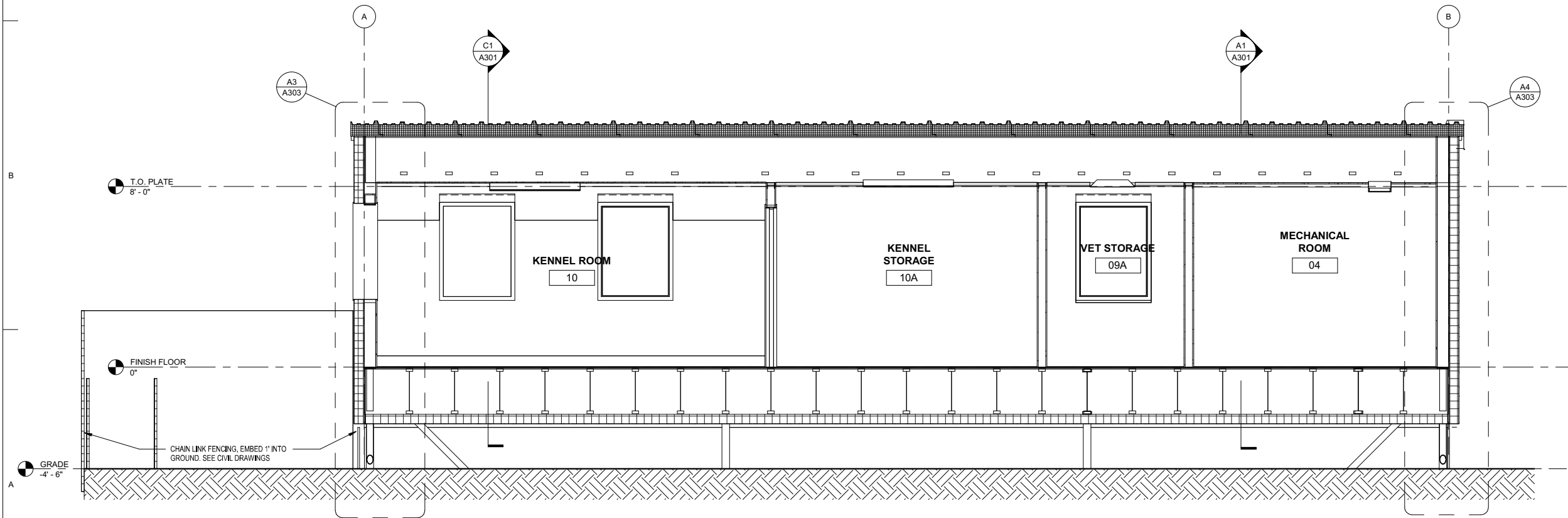
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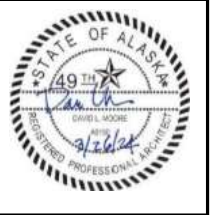


C1 A302
E/W SECTION1
3/8" = 1'-0"



A1 A302
E/W SECTION
3/8" = 1'-0"

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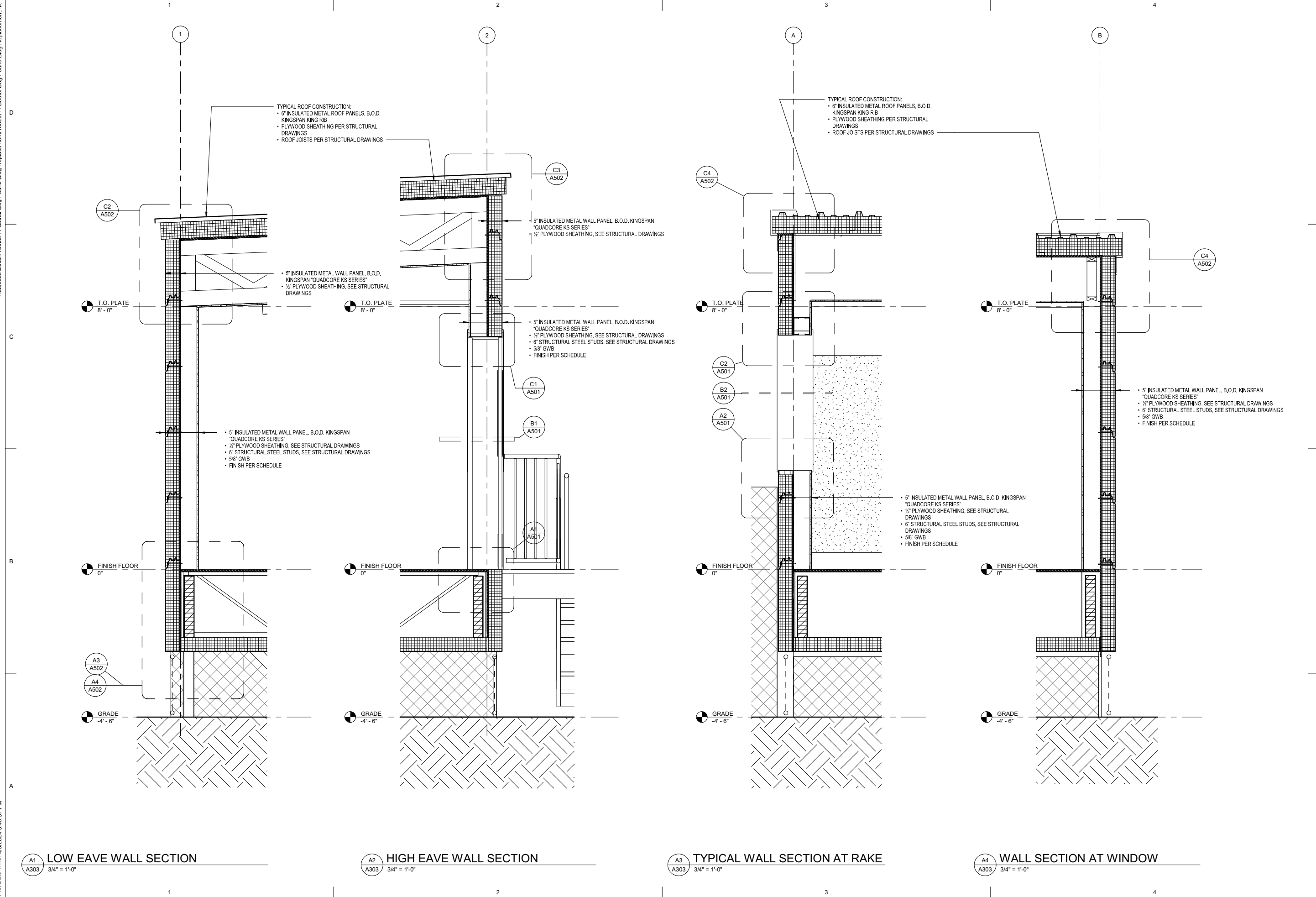
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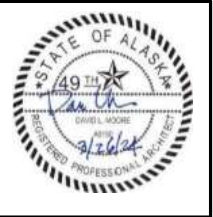
Sheet Contents BUILDING SECTIONS

Sheet No.
A302

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Revisions		
No.	Description	Date

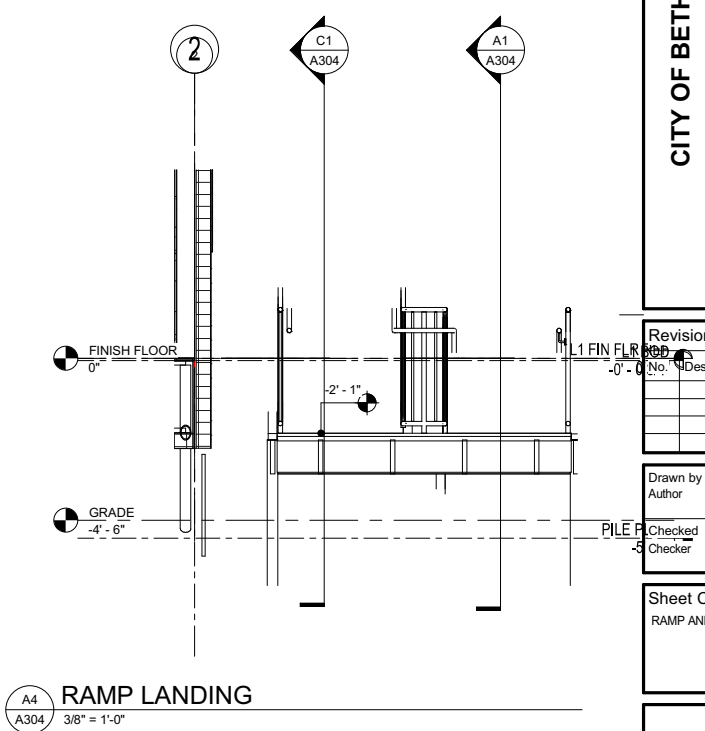
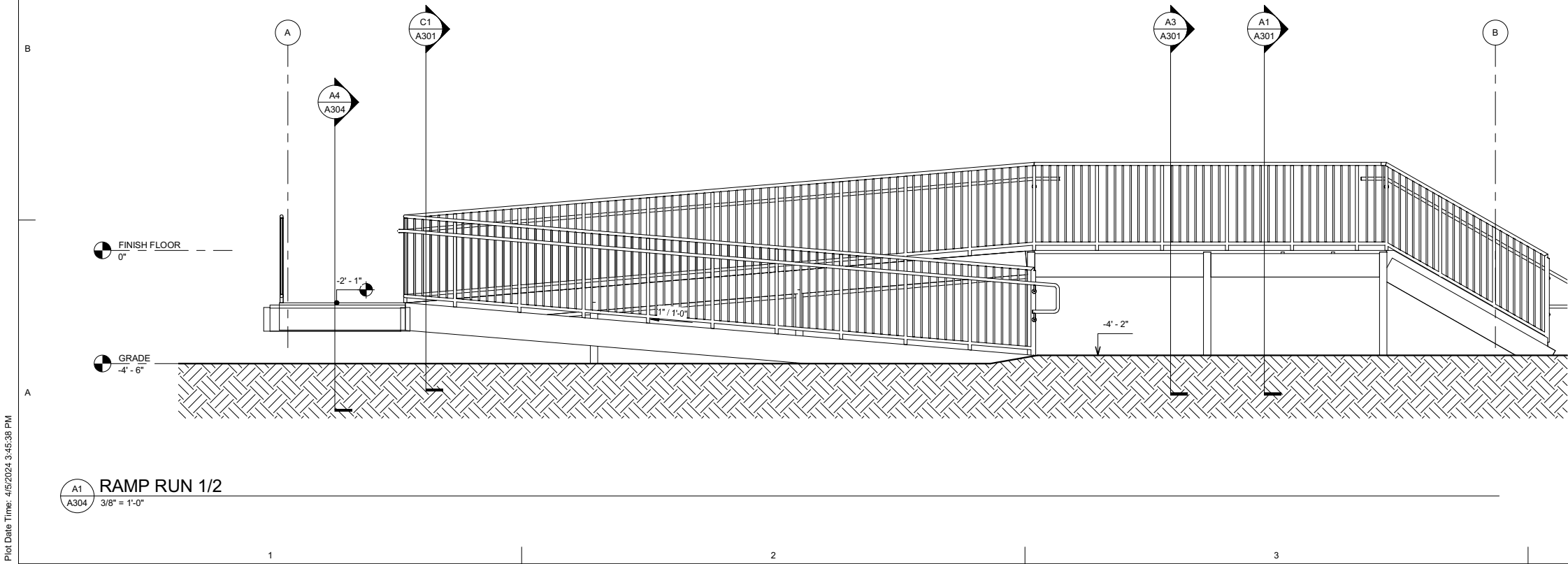
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Checked Checker	Job No. 18020.11

Sheet Contents
WALL SECTIONS

Sheet No.
A303

Sheet No.

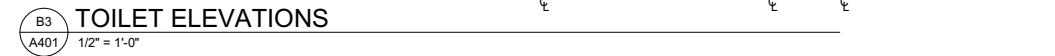
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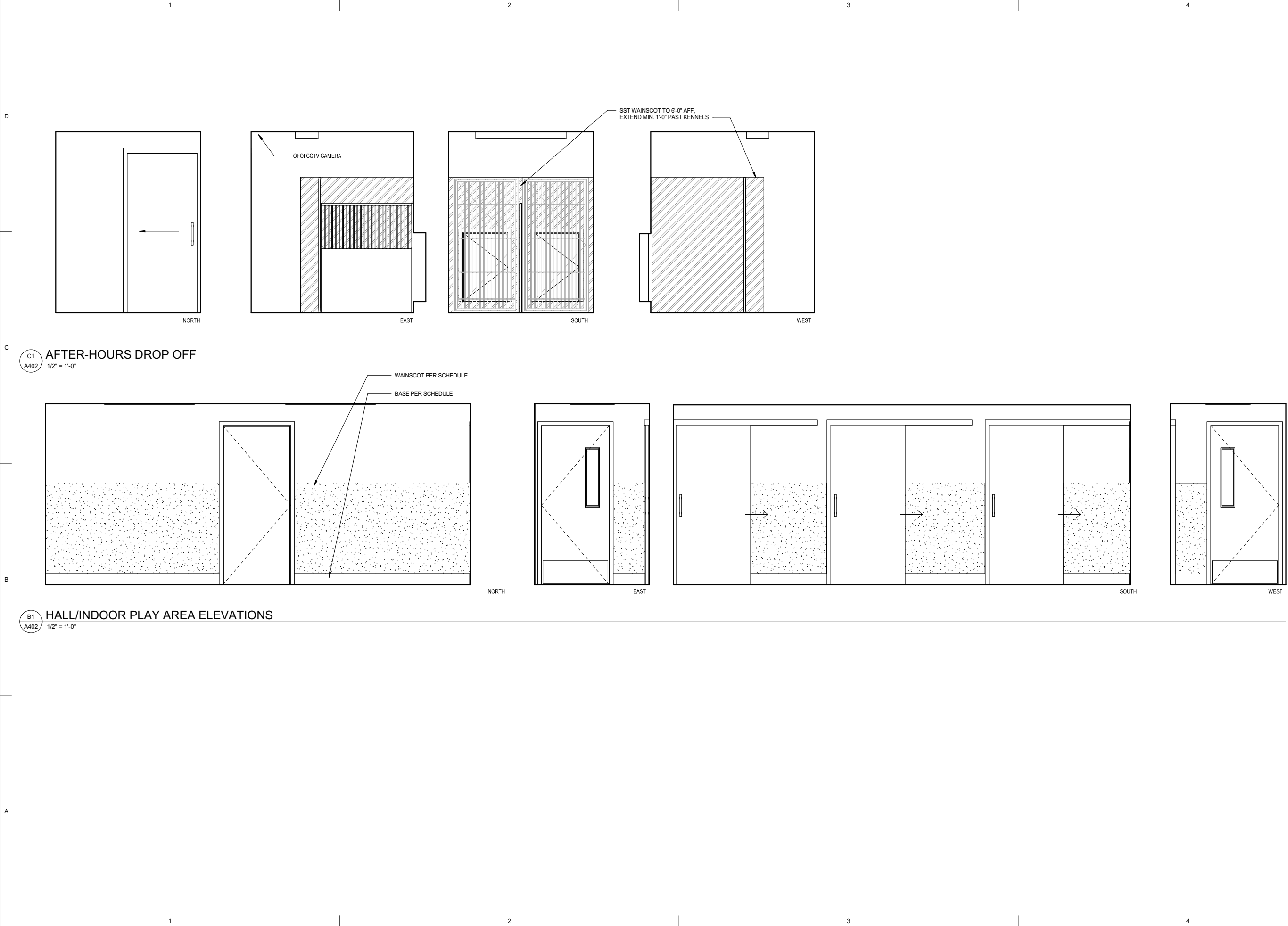


Sheet No.

A401



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No.	Description	Date

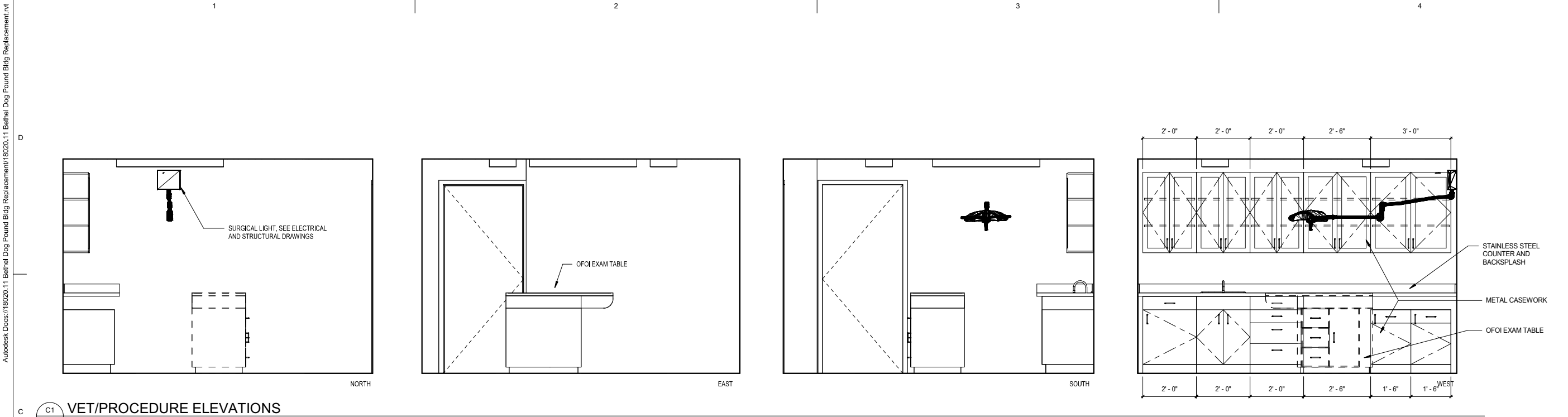
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Checked Checker	Job No. 18020.11

Sheet Contents INTERIOR ELEVATIONS

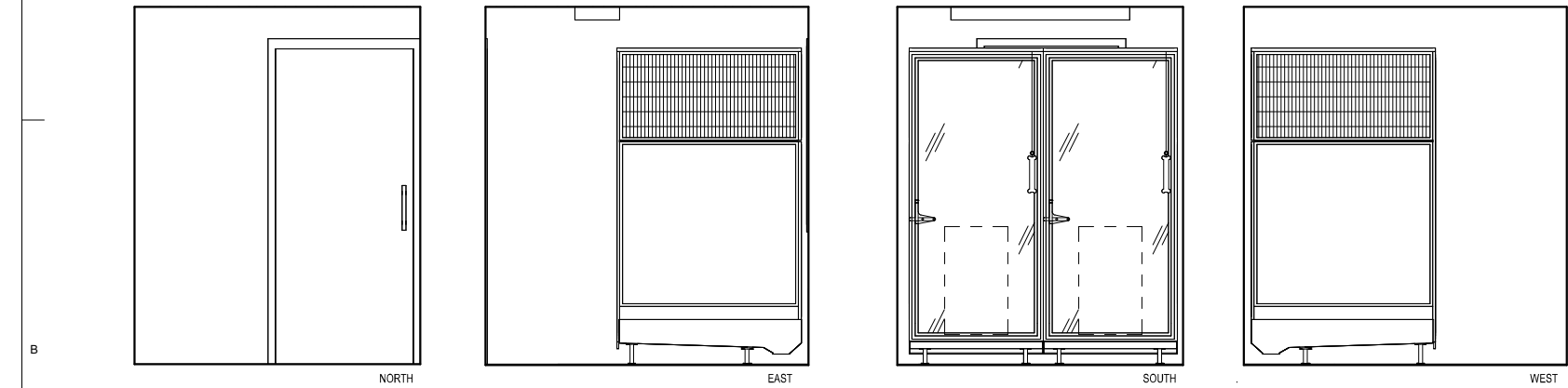
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A402

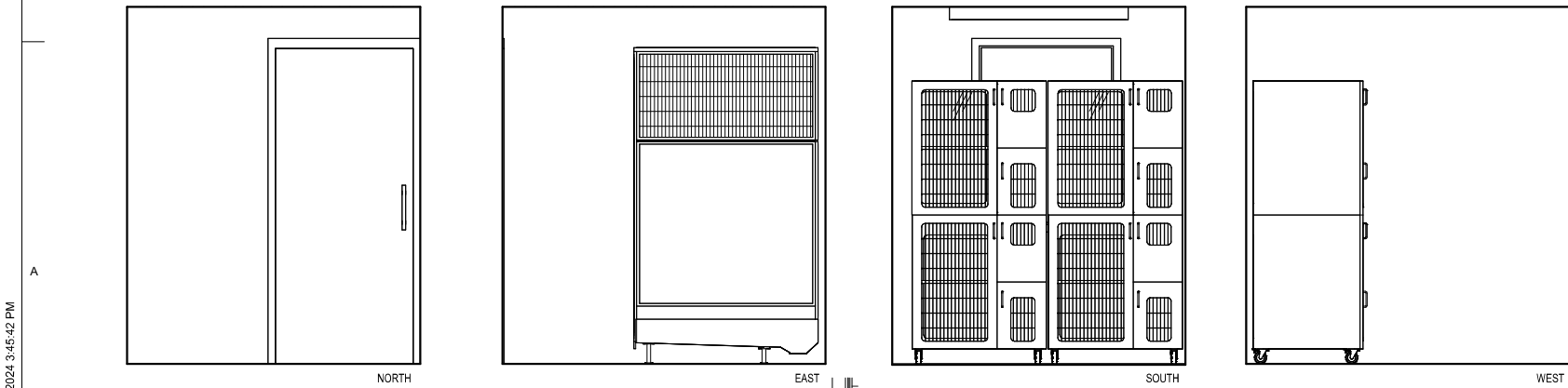
Autodesk Docs://18020.11 Bethel Dog Pound Replacement/18020.11 Bethel Dog Pound Bldg Replacement.rvt



C1 VET/PROCEDURE ELEVATIONS
1/2" = 1'-0"



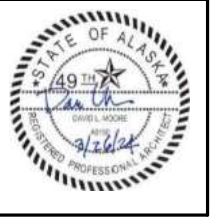
B1 ISOLATION KENNEL ELEVATIONS
1/2" = 1'-0"



A1 CAT KENNELS ELEVATIONS
1/2" = 1'-0"

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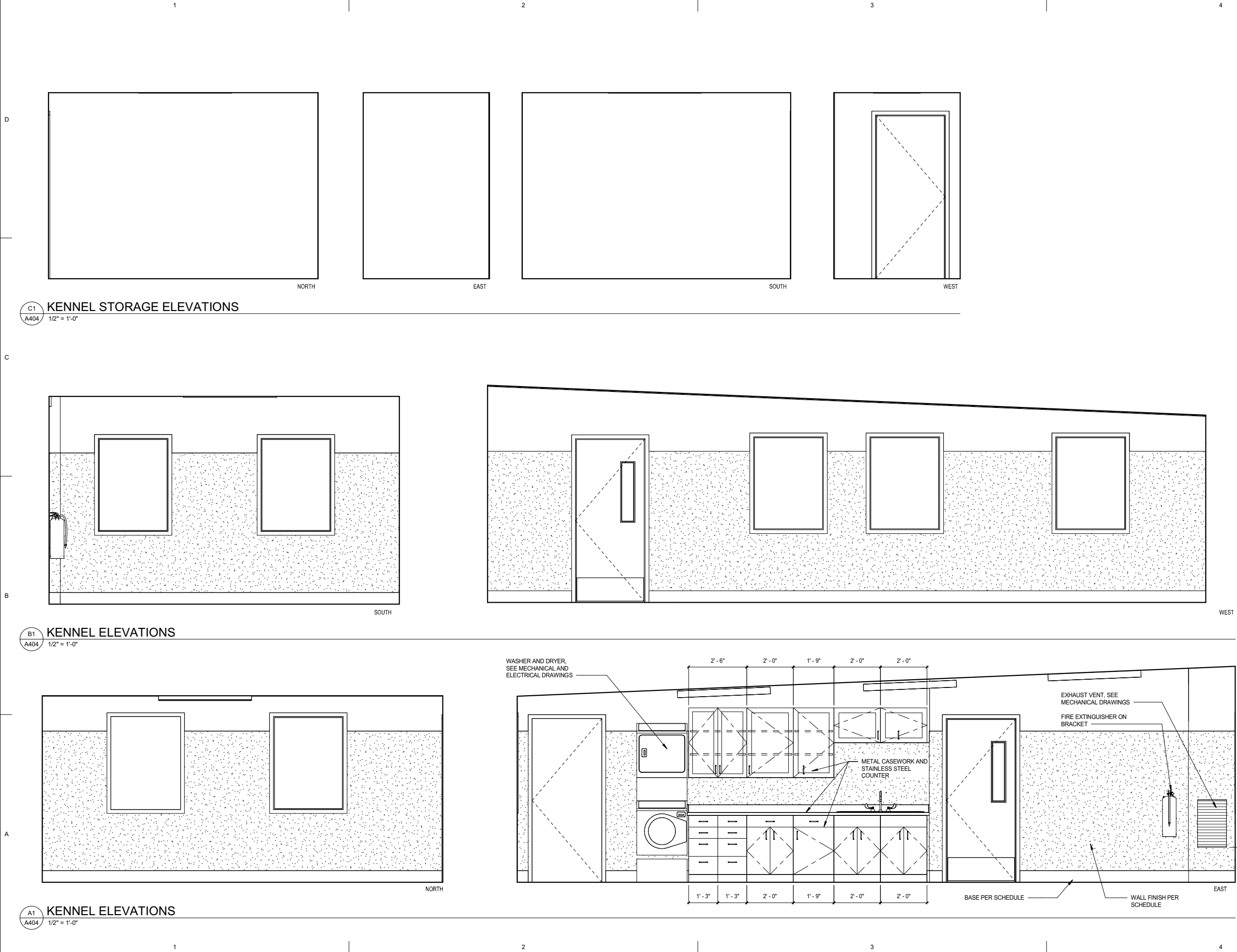
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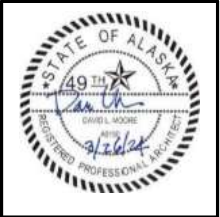
Sheet Contents
INTERIOR ELEVATIONS

Sheet No.
A403

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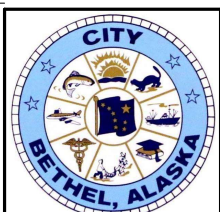
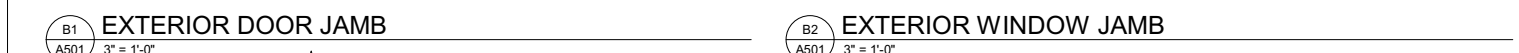
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No.	Description	Date

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Sheet Contents INTERIOR ELEVATIONS

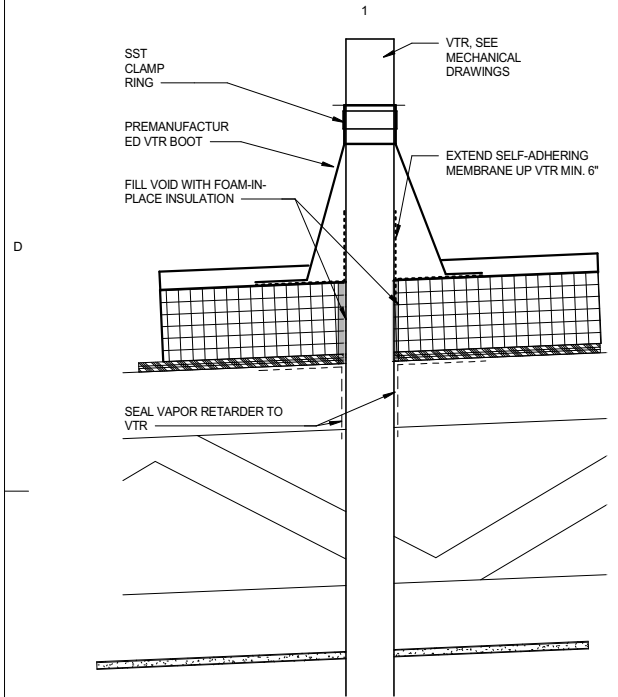
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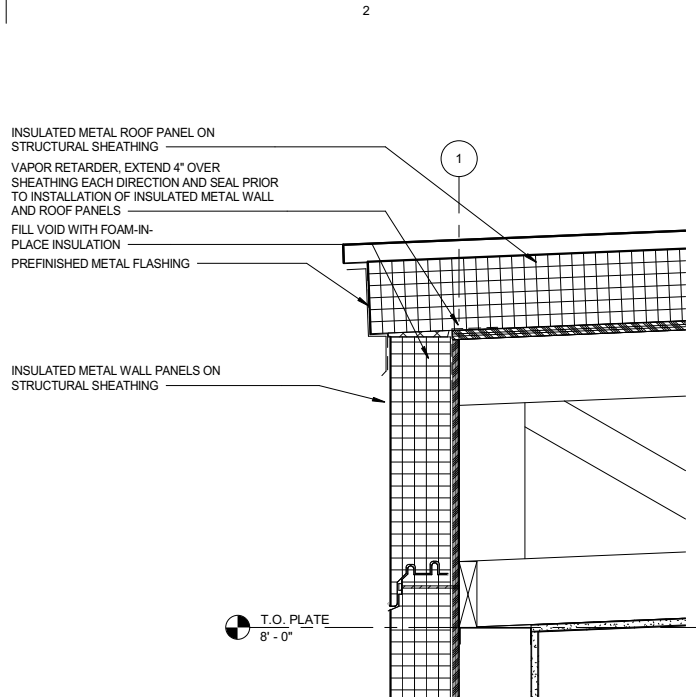
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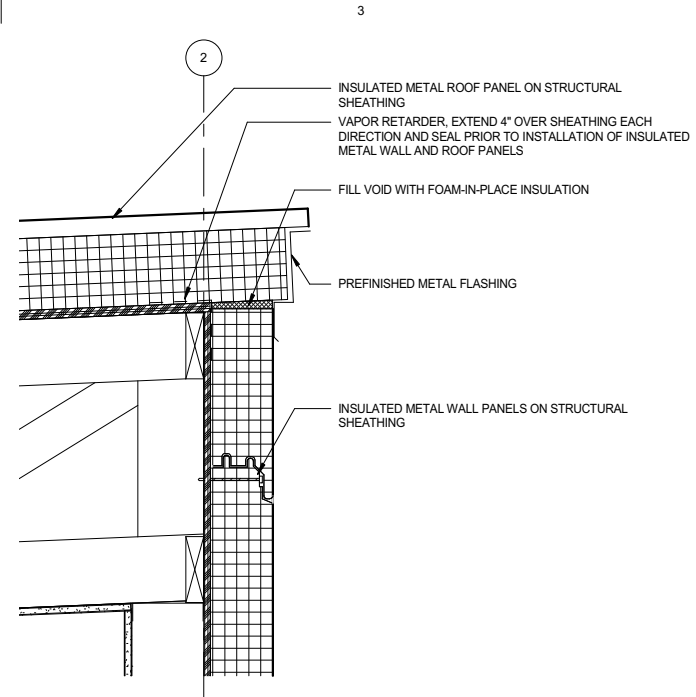
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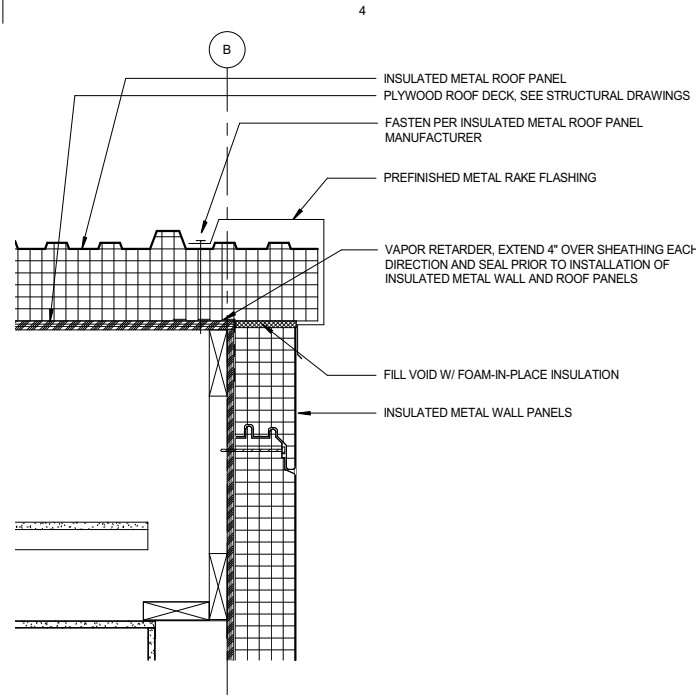
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A502
TYP. VTR DETAIL
1 1/2" = 1'-0"



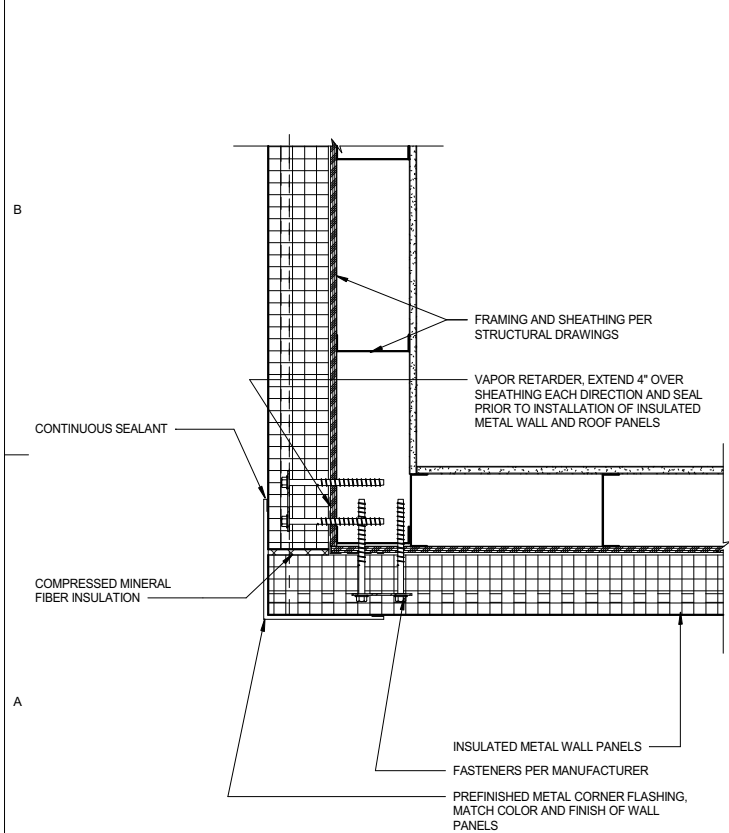
C2
A502
TYP. LOW EAVE DETAIL
1 1/2" = 1'-0"



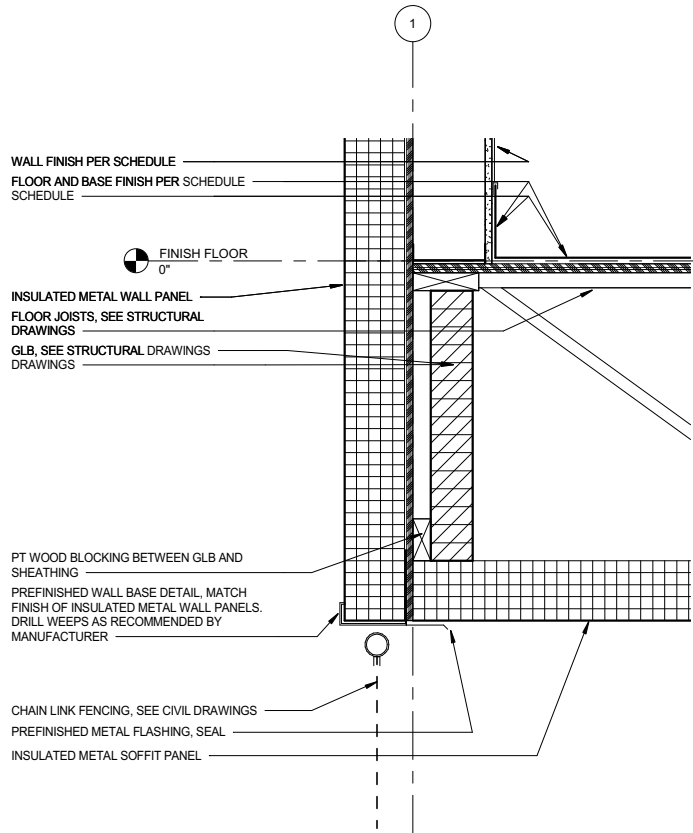
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A502
TYP. HIGH EAVE DETAIL
1 1/2" = 1'-0"



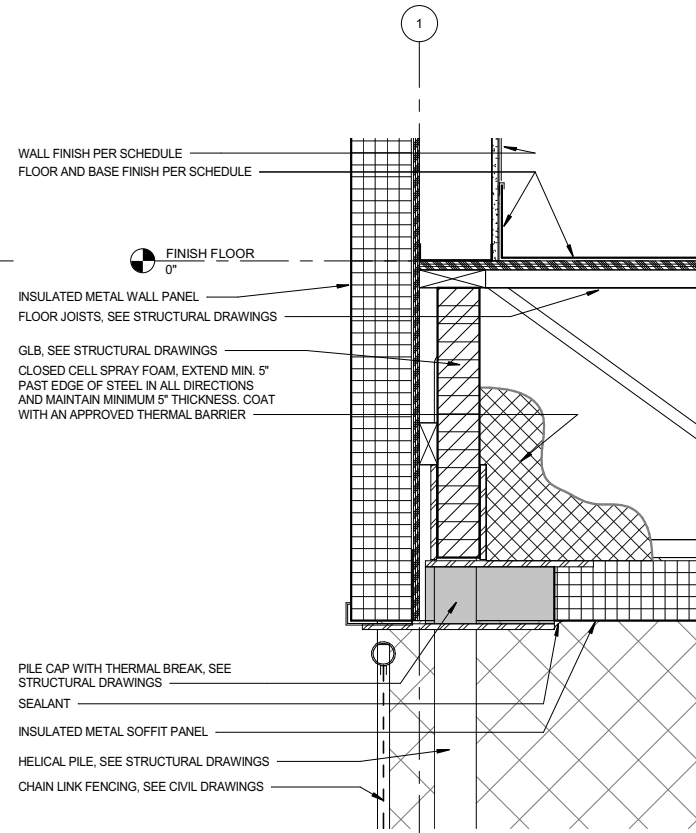
C4
A502
TYP. RAKE DETAIL
1 1/2" = 1'-0"



A1
A502
TYP. OUTSIDE CORNER
1 1/2" = 1'-0"



A3
A502
TYPICAL WALL BASE DETAIL
1 1/2" = 1'-0"



A4
A502
TYPICAL WALL BASE DETAIL @ PILE CAP
1 1/2" = 1'-0"

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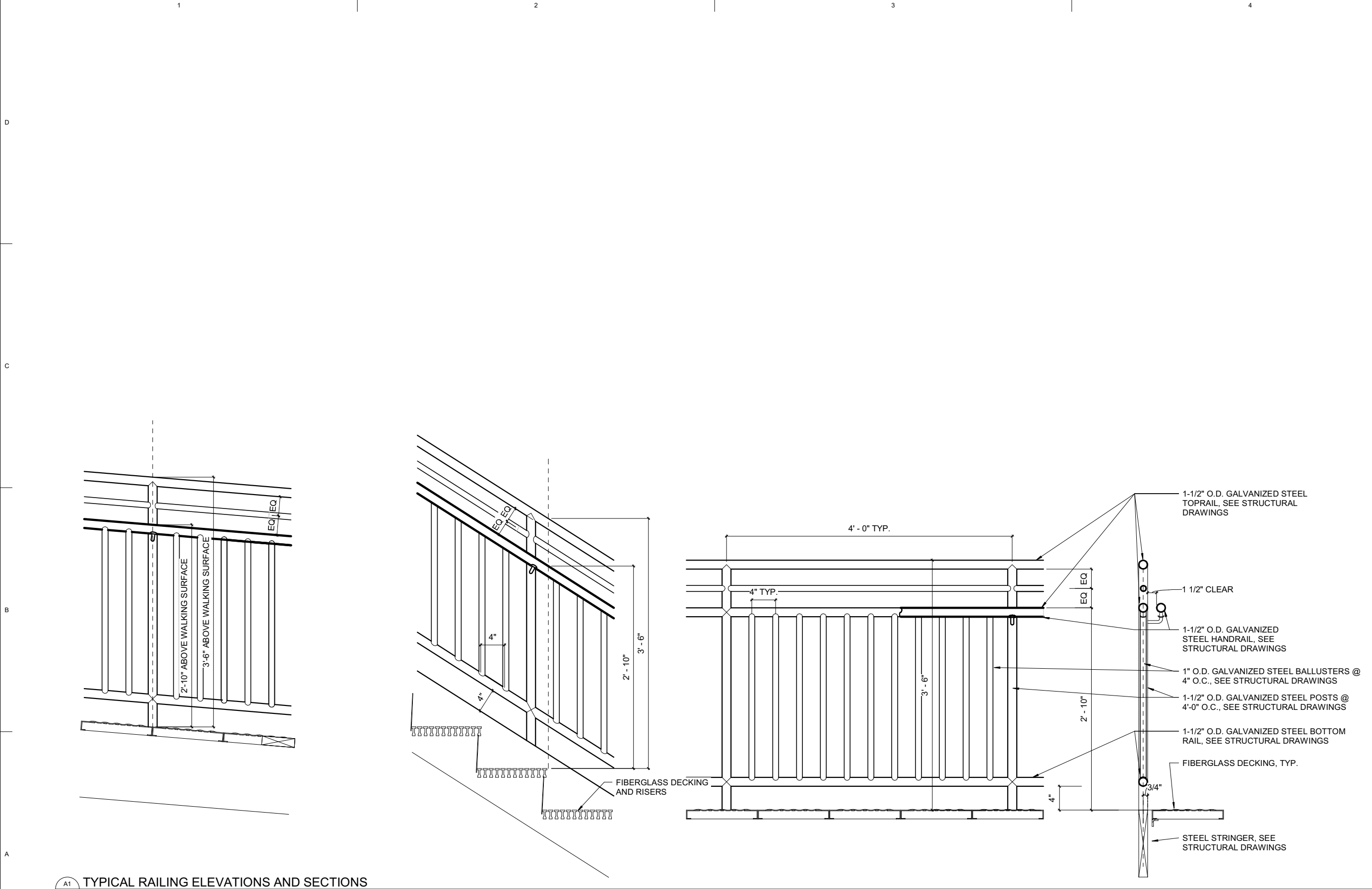
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Sheet Contents
EXTERIOR WALL AND ROOF DETAILS

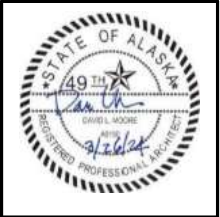
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Autodesk Docs://18020.11 Bethel Dog Pound Blug Replacement/18020.11 Bethel Dog Pound Blug Replacement.rvt
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A1
A503
TYPICAL RAILING ELEVATIONS AND SECTIONS
1 1/2" = 1'-0"

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Sheet Contents TYPICAL RAILING ELEVATIONS AND SECTIONS

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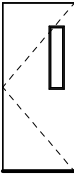
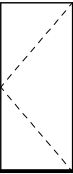
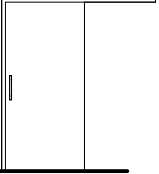
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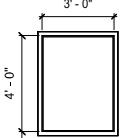
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ROOM FINISH SCHEDULE																			
NO.	NAME	FLOOR			BASE			WALLS											
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								MATERIAL	FINISH	COLOR	MATERIAL	FINISH	COLOR	MATERIAL	FINISH	COLOR	MATERIAL	FINISH	COLOR
01	OFFICE / LOBBY	F1/F2			B1			W1			W1			W1			W1		
02	LOBBY	F1			B1			W1/W2			W1/W3			W1/W3			W1/W3		
03	TOILET	F1			B2			W1/W2			W1/W2			W1/W2			W1/W2		
04	MECHANICAL ROOM	F1			B2			W1			W1			W1			W1		
05	HALL / INDOOR PLAY AREA	F3			B2			W2			W2			W2			W2		
06	AFTER-HOURS DROP OFF	F3			B2			W1			W1/W4			W1/W4			W1/W4		
07	CAT KENNELS	F3			B2			W3			W3			W3			W3		
08	ISOLATION KENNELS	F3			B2			W3			W3			W3			W3		
09	VET / PROCEDURE	F3			B2			W3			W3			W3			W3		
09A	VET STORAGE	F1			B1			W1			W1			W1			W1		
10	KENNEL ROOM	F1			B2			W3			W3			W3			W3		
10A	KENNEL STORAGE	F1			B1			W1			W1			W1			W1		
10B	KENNEL ROOM	F3			B2			W3			W3			W3			W3		

ROOM FINISH LEGEND															
FLOOR MATERIALS				FLOOR FINISHES				WALL MATERIALS				WALL FINISHES			
F1	SHEET VINYL	S	SEALER	W1	GYPSUM WALL BOARD	PT	PAINT	W1	GYPSUM WALL BOARD	FF	FACTORY FINISH	FF	FACTORY FINISH		
F2	WALK OFF CARPET	FF	FACTORY FINISH	W2	FIBER GLASS REINFORCED PANEL +4'-0"			W2	FIBER GLASS REINFORCED PANEL +4'-0"						
F3	RESINOUS FLOOR			W3	GYPSUM WALL BOARD WITH FULL HEIGHT			W3	GYPSUM WALL BOARD WITH FULL HEIGHT						
					FIBERGLASS REINFORCED PANEL				FIBERGLASS REINFORCED PANEL						
					SST WAINSCOT TO 6'-0" AFF			W4	SST WAINSCOT TO 6'-0" AFF						
BASE MATERIALS				BASE FINISH				CEILING MATERIALS				CEILING FINISHES			
B1	4" RUBBER BASE	FF	FACTORY FINISH	C1	GYPSUM BOARD	PT	PAINT	C1	GYPSUM BOARD	FF	FACTORY FINISH	FF	FACTORY FINISH		
B2	6" SELF COVED BASE			C2	SUSPENDED ACOUSITCAL PANELS			C2	SUSPENDED ACOUSITCAL PANELS						
					EXPOSED STRUCTURE			C3	EXPOSED STRUCTURE						

DOOR SCHEDULE															
NO.	SIZE		DOOR				FRAME			HARDWARE GROUP	RATING	DETAILS			COMMENTS
	WIDTH	HEIGHT	TYPE	MATERIAL	FINISH	GLASS	TYPE	MATERIAL	FINISH			HEAD	JAMB	THRESHOLD	
01-1	3' - 0"	7' - 0"	NL	IHM	FF		1	TBHM	FF			C1/A501	B1/A501	A1/A501	
03-1	3' - 0"	7' - 0"	F	HM	FF		1	HM	FF						OCCUPANCY INDICATOR
04-1	4' - 0"	7' - 0"	F	HM	FF		1	HM	FF						
05-1	3' - 0"	7' - 0"	NL	HM	FF		1	HM	FF						
05-2	3' - 0"	7' - 0"	NL	HM	FF		1	HM	FF						
06-1	3' - 4"	7' - 0 3/4"	Q	AL	FF			AL	AN						LOCKABLE
06-2	2' - 0"	3' - 0"	F	IHM	FF		2	TBHM	FF			C1/A501	B1/A501	A4/A501	OCCUPANCY INDICATOR W/ INTERIOR RESET; SILL AT 6" AFF
06-3	2' - 0"	3' - 0"	F	IHM	FF		2	TBHM	FF			C1/A501	B1/A501	A4/A501	OCCUPANCY INDICATOR W/ INTERIOR RESET; SILL AT 6" AFF
07-1	3' - 4"	7' - 0 3/4"	Q	AL	FF			AL	AN						
08-1	3' - 4"	7' - 0 3/4"	Q	AL	FF			AL	A						
09-1	3' - 0"	7' - 0"	F	HM	FF		1	HM	FF						
09A-1	3' - 0"	7' - 0"	F	HM	FF		1	HM	FF						
10-1	3' - 0"	7' - 0"	NL	IHM	FF		1	TBHM	FF			C1/A501	B1/A501	A1/A501	
10A-1	3' - 0"	7' - 0"	F	HM	FF		1	HM	FF						

DOOR TYPES	FRAME TYPES
 NL	 1
 B	 1
 Q	

WINDOW TYPES


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CITY OF BETHEL / DOWL ENGINEERS

DOG POUND REPLACEMENT

BETHEL, ALASKA

Revisions		
No.	Description	Date

Drawn by Author	Date 12.5.22
Checked Checker	Job No. 18020.11

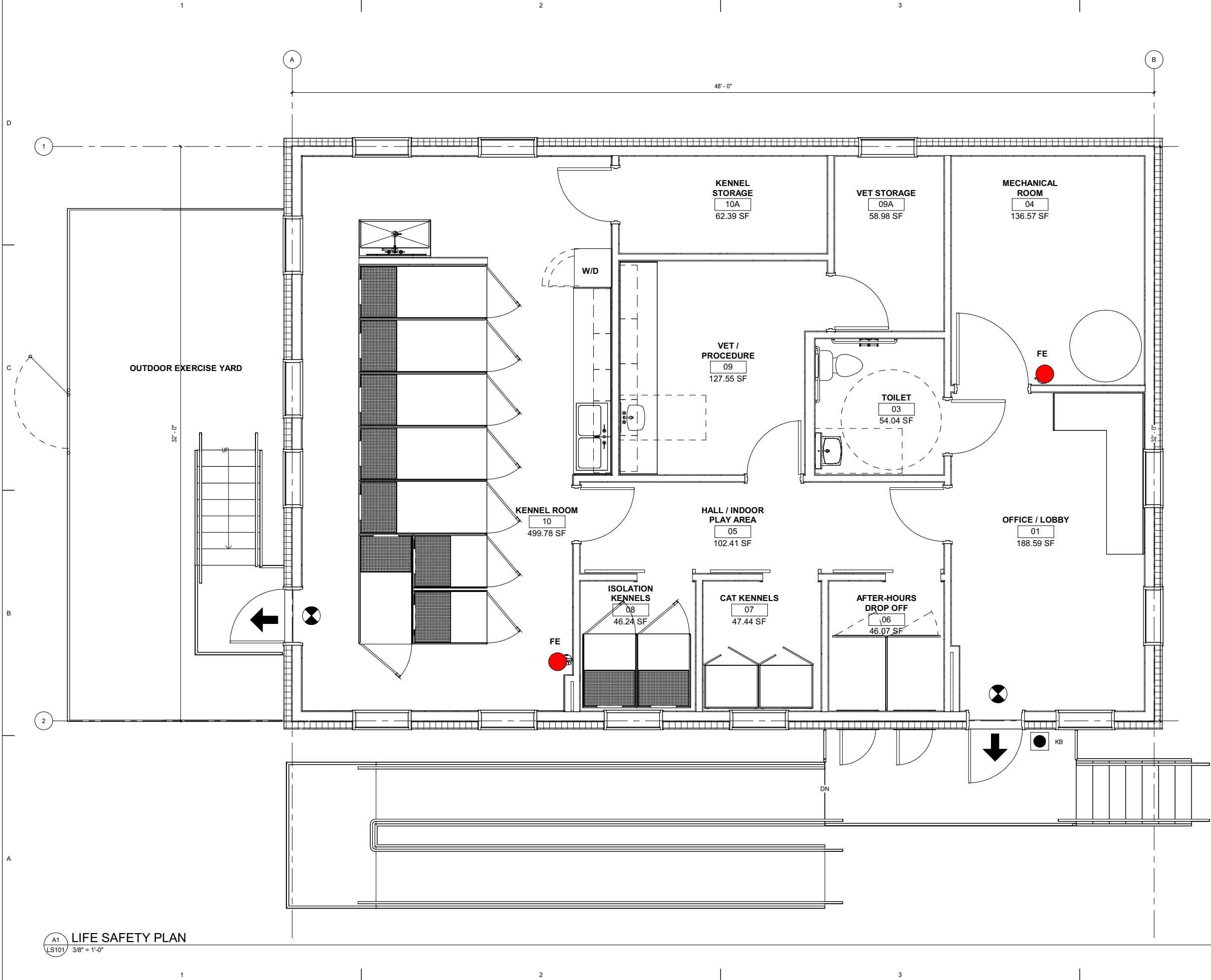
Sheet Contents SCHEDULES

Sheet No.

A601

Autodesk Docs://18020.11 Bethel Dog Pound Bldg Replacement/18020.11 Bethel Dog Pound Bldg Replacement.rvt

Plot Date Time: 4/5/2024 3:45:47 PM



A1
LS101

LIFE SAFETY PLAN
3/8" = 1'-0"

LIFE SAFETY PLAN LEGEND

EXIT SIGN LOCATION

FE
FIRE EXTINGUISHER
UL-RATED: 2A-10B:C

KB
KNOX BOX LOCATION

EXIT DISCHARGE

BUILDING CODE ANALYSIS

APPLICABLE BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE AS ADOPTED AND AMENDED BY THE STATE OF ALASKA.

GENERAL: THE PROJECT CONSISTS OF THE CONSTRUCTION OF A NEW DOG POUND SERVING THE CITY OF BETHEL. THE DEMOLITION OF THE EXISTING DOG POUND IS NOT INCLUDED IN THIS project.

CHAPTER 3. OCCUPANCY CLASS
THE BUILDING IS A GROUP B BUSINESS OCCUPANCY FOR ANIMAL HOSPITALS, KENNELS, AND POUNDS.

CHAPTER 4. SPECIAL REQUIREMENTS
429.1 STATE OF ALASKA AMENDMENT. ALL ELEVATED BUILDINGS MUST PROHIBIT UNAUTHORIZED ACCESS TO SPACES UNDERNEATH ELEVATED BUILDINGS. A PERIMETER FENCE IS REQUIRED BENEATH THE BUILDING.

CHAPTER 5. GENERAL BUILDING HEIGHTS AND AREAS.
ALLOWABLE HEIGHT: 40 FEET ABOVE GRADE PLANE
ACTUAL HEIGHT: 15'-3",
OK
ALLOWABLE AREA: 9,000 SF
ACTUAL AREA: 1,536 SF
OK
THE BUILDING IS ELIGIBLE FOR A FRONTAGE INCREASE, HOWEVER NONE IS TAKEN AS ACTUAL AREA IS LESS THAN TABULAR AREA.

CHAPTER 6. TYPES OF CONSTRUCTION
THE BUILDING IS TYPE VB CONSTRUCTION; NO INTERIOR OR EXTERIOR ELEMENTS ARE REQUIRED TO BE RATED.

CHAPTER 7. FIRE AND SMOKE PROTECTION FEATURES
THE MECHANICAL ROOM DOES NOT CONTAIN EQUIPMENT ABOVE 400,000 BTU OR OVER 15PSI/110 HP. AND THEREFORE DOES NOT REQUIRE RATED CONSTRUCTION.

CHAPTER 10. MEANS OF EGRESS
TOTAL OCCUPANT LOAD IS 11 PERSONS.
TWO MEANS OF EGRESS ARE PROVIDED.
EXIT ACCESS TRAVEL DISTANCE DOES NOT EXCEED 200 FEET.
THE BUILDING REQUIRES ONE 2A10BC FIRE EXTINGUISHER; TWO ARE PROVIDED.

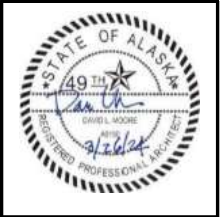
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CITY OF BETHEL / DOWL ENGINEERS

DOG POUND REPLACEMENT

BETHEL, ALASKA

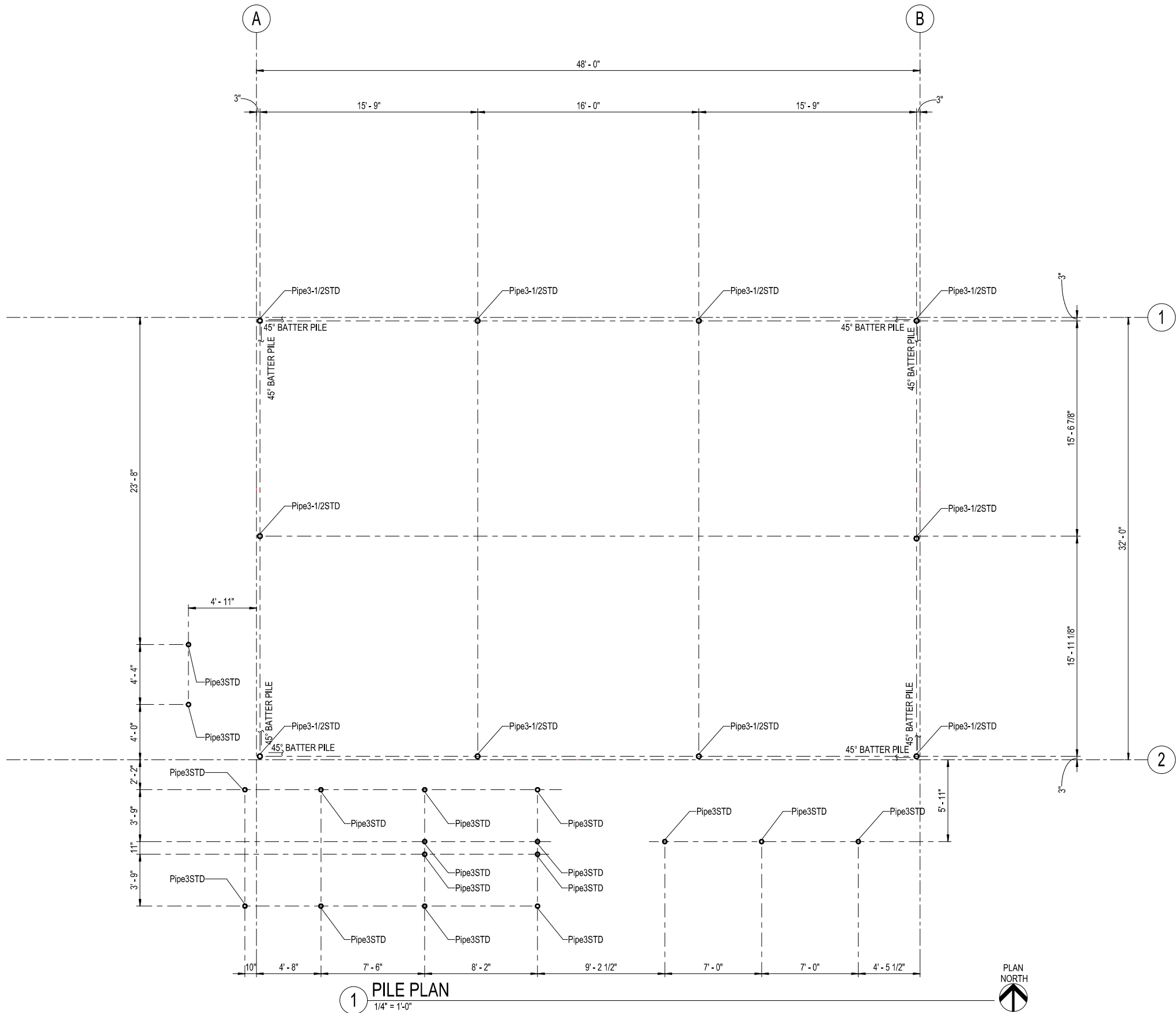
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No.	Description	Date

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Checked Checker	Job No. 18020.11

Sheet Contents LIFE SAFETY PLANS

Sheet No.
LS101

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Plot Date Time: 3/27/2024 10:58:10 AM



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Anchorage, AK 99501
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CITY OF BETHEL
DOG POUND REPLACEMENT
BETHEL, ALASKA

Revisions		
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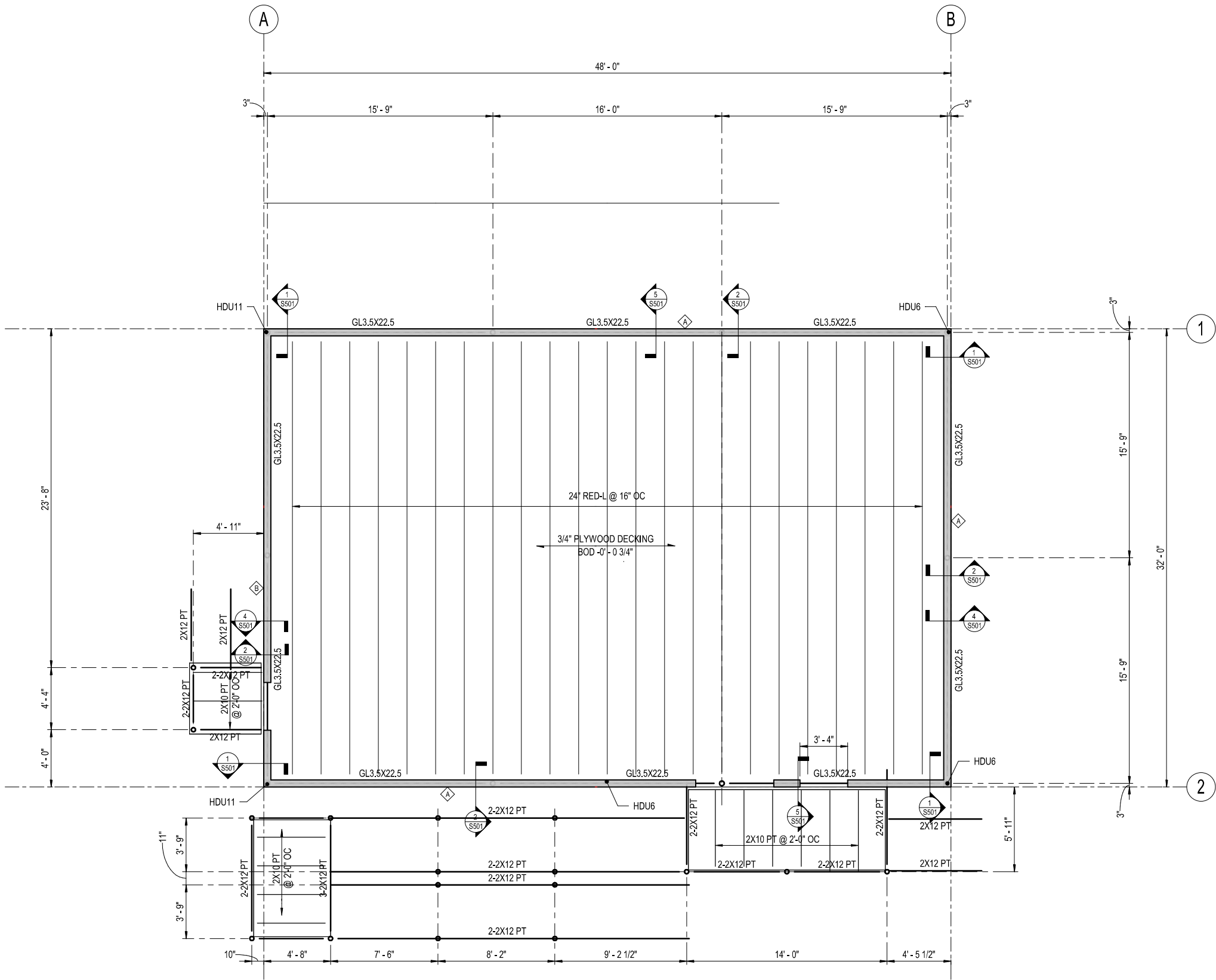
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Sheet Contents
PILE PLAN

Sheet No.
S101

BID DOCUMENTS

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1 FIRST FLOOR FRAMING PLAN
1/4" = 1'-0"

FLOOR/ROOF DIAPHRAGM ATTACHMENT

NAILS	PANEL EDGES AND AT SHEAR WALLS	SPACING
ROOF - 10d MIN UNBLOCKED	6" OC	12" OC
FLOOR - 10d MIN UNBLOCKED	6" OC	12" OC

HOLDDOWN SCHEDULE

HOLDDOWN	HD STUD	ANCHOR LAG DIA	ANCHOR LAG EMBED
HDU6	600S200-43	5/8"	6"
HDU11	600S200-43	7/8"	7"

SHEAR WALL SCHEDULE

MARK	SHEATHING	PANEL EDGE FASTENING	SILL ATTACHMENTS
A	ONE SIDE	#8 @ 4" OC	4 1/2" SIMPSON SDS OR EQUIV @ 12" OC
B	ONE SIDE	#8 @ 3" OC	4 1/2" SIMPSON SDS OR EQUIV @ 12" OC

- SHEAR WALL NOTES:**
- WHERE PANELS ARE APPLIED ON BOTH SIDES OF FRAMING AND SCREW SPACING IS LESS THAN 6" OC, PANEL JOINTS SHALL BE OFFSET TO DIFFERENT FRAMING MEMBERS.
 - PROVIDE 3"x3"x3/16" PL WASHERS ON TOP OF ALL SILL TRACKS AT ANCHOR BOLTS.
 - SHEATHING SHALL BE 7/16 OSB.
 - SIMPSON HOLDDOWNS AND STRAPS ARE INDICATED ON PLANS. EQUIVALENT ALTERNATE HARDWARE MAY BE USED.
 - PROVIDE 2" WIDE 43 MIL FLAT GALVANIZED STAP BLOCKING AT ALL HORIZONTAL JOINTS BETWEEN STUDS.

- FRAMING NOTES:**
- ELEVATIONS NOTED ARE WITH RESPECT TO FIRST FLOOR DATUM OF 0'-0".
 - SHEAR WALL NOTED THUS: FOR SHEAR WALL SCHEDULE SEE SHT S10

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CITY OF BETHEL
DOG POUND REPLACEMENT
BETHEL, ALASKA

Revisions		
No.	Description	Date

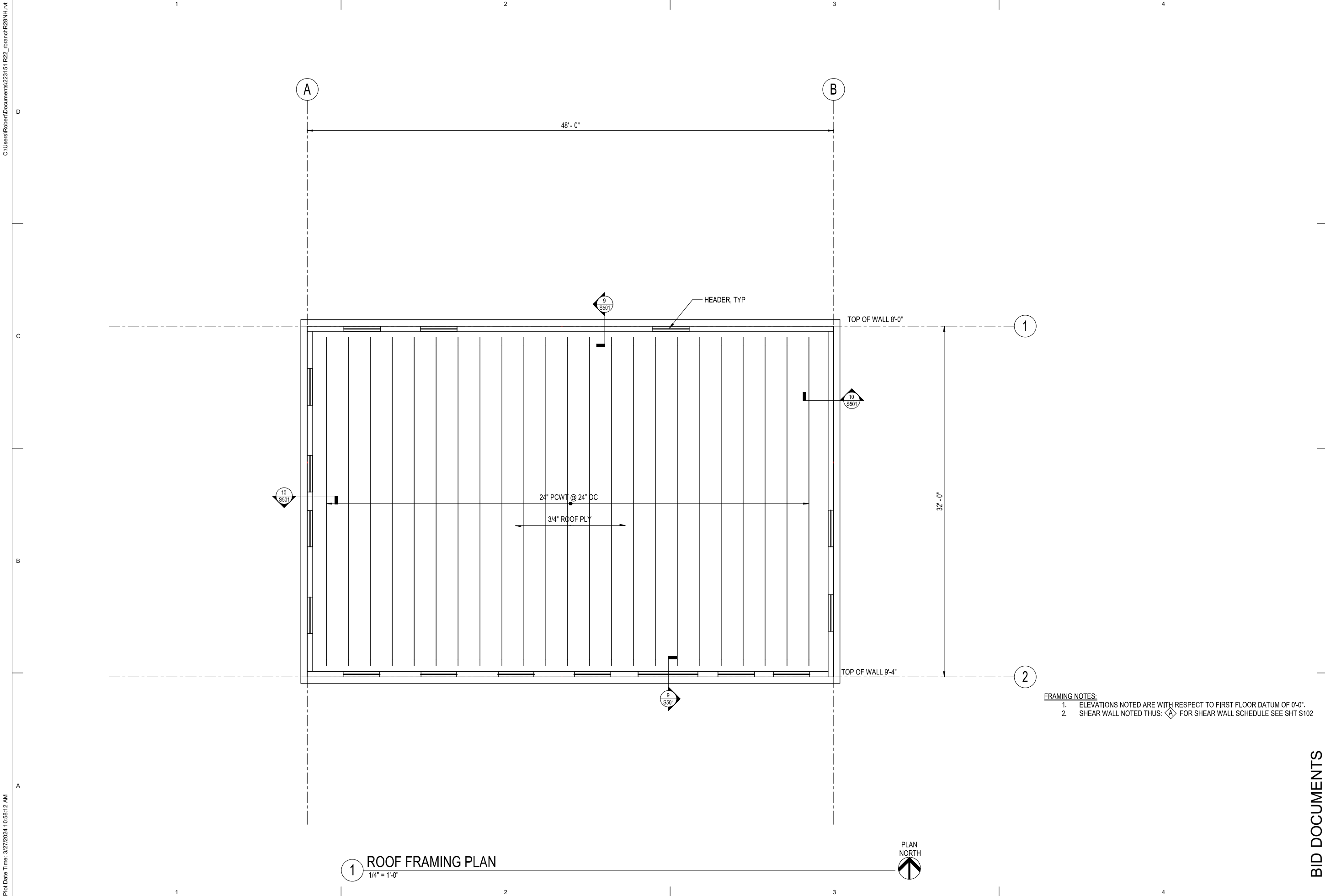
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Sheet Contents
FIRST FLOOR FRAMING PLAN

Sheet No.
S102

BID DOCUMENTS

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- FRAMING NOTES:
- ELEVATIONS NOTED ARE WITH RESPECT TO FIRST FLOOR DATUM OF 0'-0".
 - SHEAR WALL NOTED THUS: FOR SHEAR WALL SCHEDULE SEE SHT S102

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CITY OF BETHEL

DOG POUND REPLACEMENT

BETHEL, ALASKA

Revisions		
No.	Description	Date

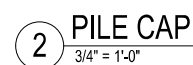
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Sheet Contents ROOF FRAMING PLAN

Sheet No.

S103

BID DOCUMENTS



Sheet No.
S501

P:\Projects\00WL\Bethel Dog Pound Bldg\Drawgs\Mech\M001 MECHANICAL LEGEND, ABBREVIATIONS AND SCHEDULES.dwg PLOT DATE: 2024-03-25 10:20 SAVED DATE: 2024-03-22 10:29

HVAC LEGEND

	DUCT SIZE (W"xH")		DUCT ELBOW
	EXTERIOR DUCT INSULATION		SUPPLY DUCT UP
	MOTORIZED DAMPER		SUPPLY DUCT DOWN
	VOLUME DAMPER		RETURN DUCT UP
			RETURN DUCT DOWN
			EXHAUST DUCT UP
			EXHAUST DUCT DOWN

PIPING LEGEND

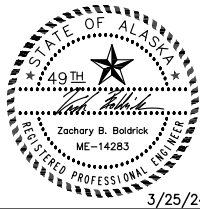
	HEATING GLYCOL (WATER) SUPPLY		CHECK VALVE
	HEATING GLYCOL (WATER) RETURN		PIPE CAP
	PIPE UP		PUMP
	PIPE DOWN		AIR VENT
	PIPE ELBOW		STRAINER W/ BLOWDOWN
	PIPE TEE		RELIEF VALVE
	BALL VALVE		BALANCE VALVE/CIRCUIT SETTER
	OS&Y VALVE		PRESSURE GAUGE
	MOTORIZED CONTROL VALVE		THERMOMETER
	TEMPERATURE SENSOR		PROPELLER FAN
	UNIT HEATER		

PLUMBING LEGEND

COLD WATER	— — — —
HOT WATER	— — — —
VENT	- - - - -
WASTE	— — — —
FLOOR DRAIN	— — — — □
FLOOR CLEANOUT	— — — — ⊗
WALL CLEANOUT	— — — —
HOSE BIB	— — — — ⚡

ABBREVIATIONS

A	COMPRESSED AIR	EXT	EXTERIOR	LAT	LEAVING AIR TEMPERATURE	RAT	RETURN AIR TEMPERATURE
ADA	AMERICAN DISABILITIES ACT	F	FAHRENHEIT	LB	POUND	RCP	REFLECTED CEILING PLAN
AFF	ABOVE FINISHED FLOOR	FA	FREE AREA	LF	LINEAR FEET	RECIRC	RECIRCULATE
AMP	AMPERE	FCO	FLOOR CLEANOUT	LWT	LEAVING WATER TEMPERATURE	RH	RELATIVE HUMIDITY
AP	ACCESS PANEL	FD-X	FLOOR DRAIN DESG.	M/A	MIXED AIR	RHC-X	REHEAT COIL DESG.
APD	AIR PRESSURE DROP	FDC	FIRE DEPARTMENT CONNECTION,	MAT	MIXED AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
APPROX	APPROXIMATELY	FIN	FINISH	MAX	MAXIMUM	S/A	SUPPLY AIR
ARCH	ARCHITECT	FLR	FLOOR	MBH	1,000 BTU/HR	SAN	SANITARY
AS-X	AIR SEPARATOR DESG.	FO	FUEL OIL	MC	MECHANICAL CONTRACTOR	SHT	SHEET
BDD	BACKDRAFT DAMPER	FOR	FUEL OIL RETURN	MECH	MECHANICAL	SPEC	SPECIFICATIONS
BLDG	BUILDING	FOS	FUEL OIL SUPPLY	MIN	MINIMUM	SS	SANITARY SEWER
B-X	BOILER DESG.	FOT-X	FUEL OIL TANK DESG.	MISC	MISCELLANEOUS	STRUCT	STRUCTURAL
BOD	BOTTOM OF DUCT	FOV	FUEL OIL VENT	MOD	MOTOR OPERATED DAMPER	T&P	TEMPERATURE & PRES VALVE
BTU	BRITISH THERMAL UNIT	FP-X	FIRE PUMP DESG.	MOV	MOTOR OPERATED VALVE	TAB	TEST & BALANCE
BV	BALL VALVE	FPM	FEET PER MINUTE	MTD	MOUNTED	T/A	TRANSFER AIR
CD	CONDENSATE DRAIN	FPS	FEET PER SECOND	MVD	MANUAL VOLUME DAMPER	TD-X	TRENCH DRAIN DESG.
CFM	CUBIC FEET PER MINUTE	FSC	FAN SPEED CONTROLLER	NC	NORMALLY CLOSED	TDH	TOTAL DYNAMIC HEAD
CLG	CEILING	FWT-X	FIRE WATER TANK DESG.	N.C.	NOISE CRITERIA	TEMP	TEMPERATURE
CO	CLEAN OUT	GA	GAGE	NIC	NOT IN CONTRACT	TMV-X	THERMOSTATIC MIXING VALVE
CO2	CARBON DIOXIDE	GAL	GALLON	NO	NORMALLY OPEN	TSTAT	THERMOSTAT
CONT	CONTINUATION	GALV	GALVANIZED	NO.	NUMBER	TYP	TYPICAL
CP-X	CIRCULATING PUMP DESG.	GC	GENERAL CONTRACTOR	NTS	NOT TO SCALE	UH-X	UNIT HEATER DESG.
CV	CONTROL VALVE	GPD	GALLON PER DAY	OA	OUTSIDE AIR	V	VENT
CW	COLD WATER	GT-X	GLYCOL TANK DESG.	OAT	OUTSIDE AIR TEMPERATURE	VA	VOLT AMPERE
DA	DENTAL AIR	HB-X	HOSE BIB DESG.	OBD	OPPOSED BLADE DAMPER	VEL	VELOCITY
DB	DECIBEL(S)	HD	HEAD	OD	OUTSIDE DIAMETER	VERT	VERTICAL
DB	DRY BULB TEMPERATURE	HOA	HAND, OFF, AUTO STATION	OF/CI	OWNER FURN./CONTR. INST.	VF-X	VENT FAN DESG.
DDC	DIRECT DIGITAL CONTROL	HP	HORSEPOWER	OF/OI	OWNER FURN./OWNER INST.	VFD	VARIABLE FREQUENCY DRIVE
DEG	DEGREE	HT	HEIGHT	OS&Y	OPEN SCREW & YOKE	VOL	VOLUME
DISCH	DISCHARGE	HW	HOT WATER	OWS-X	OIL/WATER SEPARATOR DESG.	VTR	VENT THROUGH THE ROOF
DPS	DIFFERENTIAL PRES. SENSOR	HWG-X	HOT WATER GENERATOR DESG.	O/W	OIL WASTE	W	WASTE
DT-X	DAY TANK DESG.	HGR	HEATING GLYCOL RETURN	OZ	OUNCE	W/	WITH
DWG	DRAWING	HGS	HEATING GLYCOL SUPPLY	P-X	PLUMBING FIXTURE DESG.	W/O	WITHOUT
DWV	DRAIN, WASTE, AND VENT	HWR	HEATING WATER RETURN	PD	PRESSURE DROP	WCO	WALL CLEAN OUT
E/A	EXHAUST AIR	HWS	HEATING WATER SUPPLY	PH	PHASE (ELECTRIC)	WHA	WATER HAMMER ARRESTOR
EAT	ENTERING AIR TEMPERATURE	HRV-X	HEAT RECOVERY VENT. DESG.	PHC-X	PREHEAT COIL DESG.	WTR	WATER
EF-X	EXHAUST FAN DESG.	HX-X	HEAT EXCHANGER DESG.	PLMB	PLUMBING	'X'	AIR INLET/OUTLET DESG,
EFF	EFFICIENCY	ID	INSIDE DIAMETER	POC	POINT OF CONNECTION	YCO	YARD CLEANOUT
EL	ELEVATION	IN WC	INCHES, WATER COLUMN	PRES	PRESSURE		
ELEC	ELECTRIC	INCL	INCLUDE	PSF	POUNDS PER SQUARE FOOT		
ENT	ENTERING	INSUL	INSULATION	PSI	POUNDS PER SQUARE INCH		
ESP	EXTERNAL STATIC PRESSURE	JP-X	JOCKEY PUMP DESG.	PT-X	PRESSURE TANK DESG.		
ET-X	EXPANSION TANK DESG.	KW	KILOWATT	QTY	QUANTITY		
EWT	ENTERING WATER TEMPERATURE	KWH	KILOWATT HOUR	R/A	RETURN AIR		



CITY OF BETHEL
BETHEL DOG POUND BUILDING
BETHEL, ALASKA

Revisions		
No.	Description	Date

Drawn by	Date 3/25/2024
Checked	Job No. -

Sheet Contents
MECHANICAL LEGEND,
ABBREVIATIONS AND
SCHEDULES

Sheet No.

M001

BID DOCUMENTS

ISSUED FOR AGENCY REVIEW

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1										2									
BOILERS																			
TAG NO.		MAKE AND MODEL NO.		INPUT MBH	OUTPUT MBH	ELECTRICAL			ACCESSORIES/REMARKS										
B-1		BURNHAM MPO-IQ147		147	123	120V, 1 PH, 2.0A			LOW WATER CUTOFF, HIGH LIMIT CONTROL, PRESSURE RELIEF VALVE. TEKMAR BOILER CONTROLLER. DIRECT VENT KIT.										
AIR HANDLING UNITS																			
TAG NO.		SERVICE	CAPACITY (CFM)	EXT S.P. (IN H2O)	FAN SPEED (RPM)	FAN MOTOR (HP)	VOLTAGE & PHASE		MAKE & MODEL					NOTES					
AHU-1		BUILDING VENTILATION	950	0.25	1000	1/3	120/1		DAIKIN BCAD0161					W/ 3 ROW HOT WATER COIL, SEE HC-1					
HEAT RECOVERY VENTILATORS																			
TAG NO.		SERVICE	SUPPLY CAPACITY (CFM)	SUPPLY S.P. (IN H2O)	EXHAUST CAPACITY (CFM)	EXHAUST S.P. (IN H2O)	VOLTAGE & PHASE		MOTOR POWER	MAKE & MODEL					NOTES				
HRV-1		PROCEDURE ROOM	100	0.1	100	0.1	120V, 1-PH		175 W	FANTECH FLEX 100H					-				
HEATING COILS																			
TAG NO.		LOCATION	AIRFLOW (CFM)	CAPACITY (MBH)	AIR PRESS. DROP (IN H2O)	FLUID FLOW (GPM)	FLUID PRESS DROP (FT H2O)	EGT (°F)	LGT (°F)	MAKE & MODEL									
HC-1		AHU-1	950	100,000	0.15	9	13.6	180	155	DAIKIN 3 ROW HOT WATER COIL - INCLUDED WITH AHU-1									
HC-2		HRV-1	100	10,000	0.12	1		180	160	MODINE HEATCRAFT 5WL0804B - 6X8									
AIR SEPARATORS																			
TAG NO.		MANUFACTURER/MODEL			SIZE	FLOW	NOTES												
AS-1		SPIROTHERM/SPRIOVENT JUNIOR			1-1/4"	15 GPM	WITH BOTTOM TAPPING FOR EXPANSION TANK												
PUMPS																			
TAG NO.		SERVICE			FLOW GPM	HEAD FEET	MOTOR POWER	VOLTAGE AND PHASE		MANUFACTURER/MODEL/REMARKS									
CP-1		BOILER CIRCULATOR			16	18	350 W	120/1		GRUNDFOS 43-100F - SPEED 2									
CP-2		DOMESTIC HOT WATER			9	15	197 W	120/1		GRUNDFOS UPS 26-99 FC - SPEED 2									
CP-3		SEWER LINE HEAT TRACE			5	23	197 W	120/1		GRUNDFOS UPS 26-99 FC - SPEED 2									
PP-1		DOMESTIC WATER PRESSURE			8	140	3/4 HP	240/1		GRUNDFOS CRE 1-6 N-B-A-E-HQQE, WITH INTEGRAL VFD AND PRESSURE SENSOR.									
EXPANSION TANKS																			
TAG NO.		MANUFACTURER/MODEL			TANK VOL (GAL)	MAX ACCEPT VOL (GAL)	DIAMETER (IN)		NOTES										
ET-1		AMTROL EX-30			4.4	2.5	11		BOILER SYSTEM EXPANSION TANK										
ET-2		AMTROL WX-102			4.4	2.5	11		POTABLE WATER SYSTEM HYDROPNEUMATIC TANK.										
FANS																			
TAG NO.		MANUFACTURER/MODEL			FLOWRATE (CFM)	EXT SP (IN W.C.)	POWER (W)	VOLTAGE & PHASE		DUCT CONN.	NOTES								
EF-1/2		PANASONIC FV-0510VSL1			80	0.25	13	120/1		4" ROUND	RESTROOM/ISOLATION KENNEL EXHAUST FAN								
WATER HEATERS																			
TAG NO.		MAKE AND MODEL NO.		TANK (GAL)	INPUT HEAT (MBH)	FIRST HOUR RECOVERY	EGT (°F)	LGT (°F)	FLUID FLOW (GPM)	ELECTRICAL			ACCESSORIES/REMARKS						
WH-1		AMTROL WH-7CDW		41	80	144 GPH @ 90°F	180	150	6	120V, 1 PH			INDIRECT-FIRED, DOUBLE WALLED, WITH INTEGRAL THERMOSTAT						

GRILLES, DIFFUSERS, AND REGISTERS							
TAG	SERVICE	TYPE	WIDTH (IN)	LENGTH (IN)	FLOW RATE (CFM)	PRESSURE DROP (IN H ₂ O)	MAKE & MODEL
SD-1	LOBBY	T-BAR	2X 1" SLOT	24	100	0.08	PRICE TBD4100
SD-2	OFFICES	SQUARE	6	6	25	0.03	PRICE SMD
SD-3	KENNELS	SQUARE	9	9	150	0.03	PRICE SMD
RD-1	RETURN AIR	SQUARE	18	14	400	0.02	PRICE 635

PLUMBING FIXTURES							
TAG NO.	TYPE	HW	CW	WASTE	VENT	MANUFACTURER/MODEL	NOTES
WC-1	WATER CLOSET	-	1/2"	3"	2"	KOHLER HIGHLINE K-3493-TR-0	TWO PIECE ELONGATED RIM BOTTOM DRAIN.
SK-1	KENNEL SINK	1/2"	1/2"	1-1/2"	1-1/2"	PROFLO PFSR332283 W/ MOEN 8227 FAUCET	DOUBLE BOWL, STAINLESS STEEL, COUNTER MOUNTED.
SK-2	PROCEDURE SINK	1/2"	1/2"	1-1/2"	1-1/2"	ELKAY ESS2312 W/ MOEN 8230 FAUCET	WALL HUNG, STAINLESS STEEL, SINGLE BOWL.
LAV-1	LAVATORY	1/2"	1/2"	1-1/2"	1-1/2"	PROFLO PF20174 W/ MOEN L4625 W/ POP UP DRAIN ASSEMBLY.	WALL HUNG.
FD-1	FLOOR DRAIN	-	-	1-1/2"	1-1/2"	JR SMITH 2005	-
SH-1	SHOWER	1/2"	1/2"	2"	2"	MIDMARK 105-0346-10 W/ WATERLOO 750FDU812 PET GROOMING FAUCET W/ COILED HOSE.	FREE STANDING, PROVIDE TIE DOWN RAILS.
W/D	WASHER/DRYER COMBO	1/2"	1/2"	2"	2"	SPEEDQUEEN LTEE5ASP175TW01	STACKABLE WASHER/DRYER COMBO, ELECTRIC DYER



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STATE OF ALASKA
49TH
Zachary B. Boldrick
ME-14283
REGISTERED PROFESSIONAL ENGINEER
3/25/24



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BETHEL, ALASKA

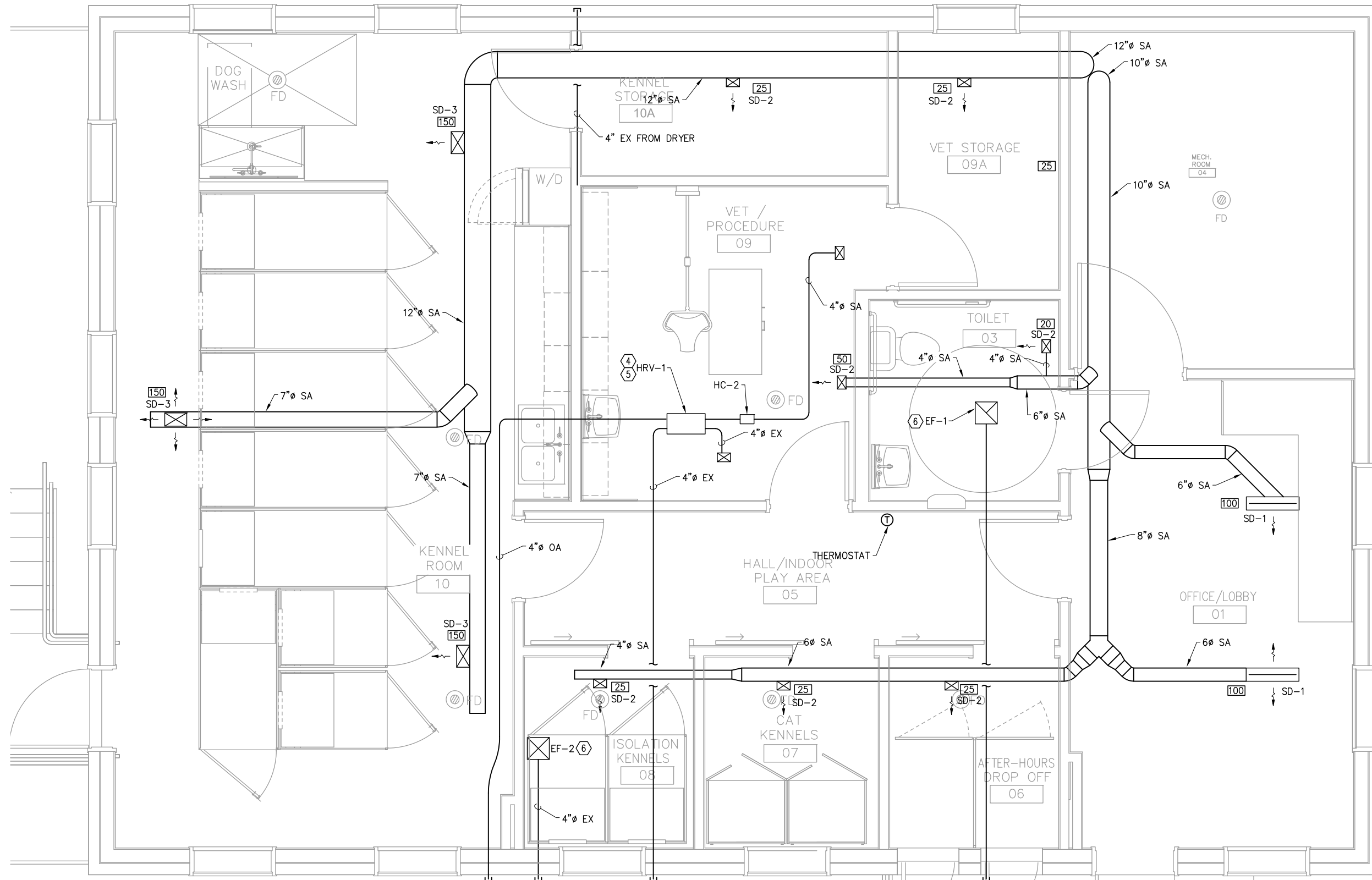
CITY OF BETHEL
BETHEL DOG POUND BUILDING
BETHEL, ALASKA

Revisions		
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	3/25/2024
Checked	Job No.
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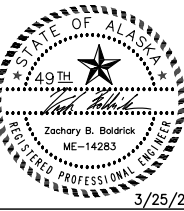
Sheet Contents
MECHANICAL LEGEND,
ABBREVIATIONS AND
SCHEDULES

Sheet No.
M002



SHEET NOTES

- | | |
|---|--|
| ① SUPPLY AIR DUCTING TO BE RUN IN SPACE, OR CEILING EXPOSED OVERHEAD. | ④ INSTALL HRV-1 OVERHEAD IN ATTIC SPACE. |
| ② RETURN AIR DUCTING TO BE RUN UNDER FLOOR. ROUTE THROUGH OPEN WEB IN FLOOR JOISTS. | ⑤ PROVIDE WALL SWITCH FOR HRV-1. |
| ③ SPACE HRV VENTS MIN. 10 FEET APART HORIZONTALLY. | ⑥ PROVIDE WALL SWITCH FOR EF-1 AND EF-2. |



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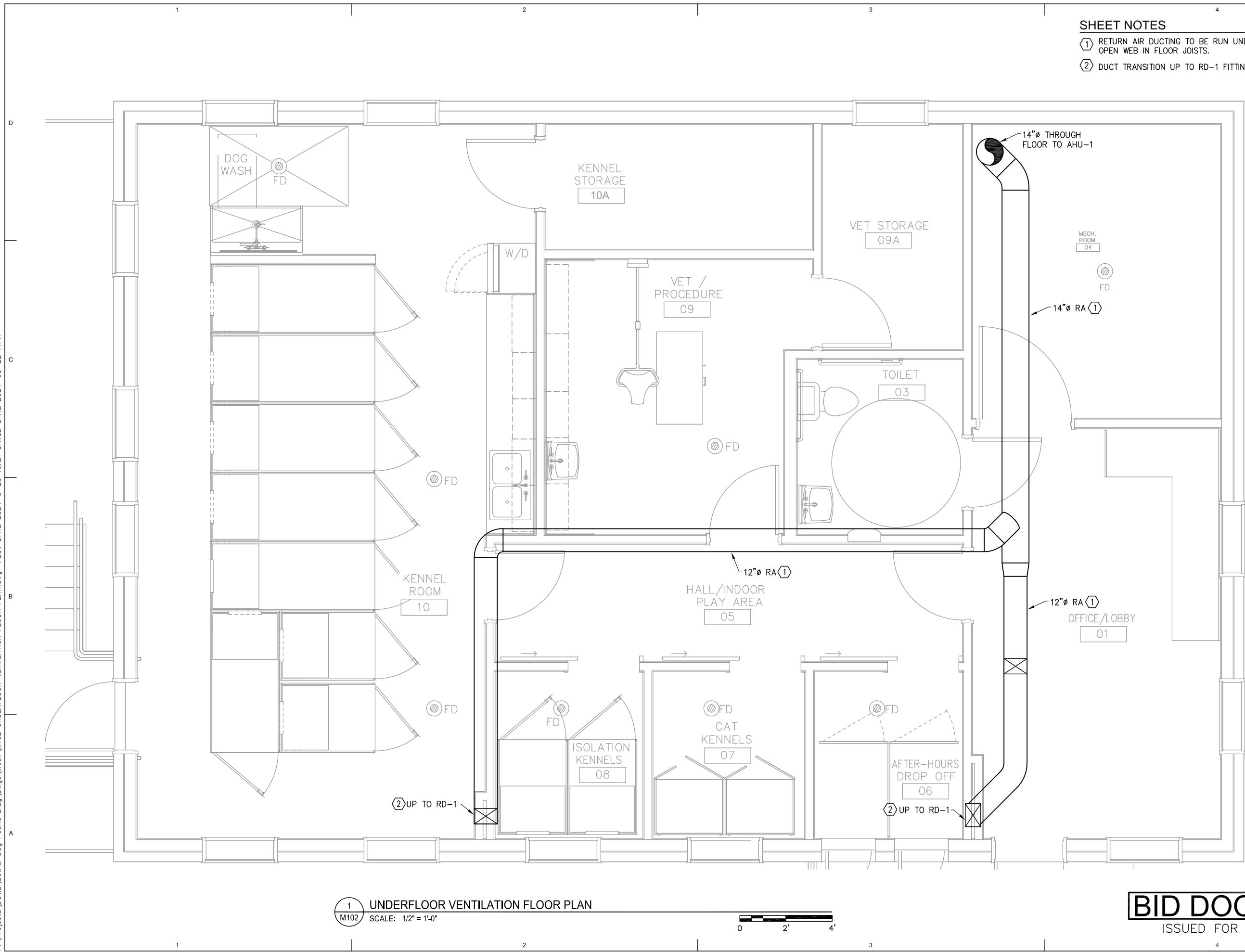
Revisions		
No.	Description	Date

Drawn by	Date 3/25/2024
Checked	Job No. -

Sheet Contents
VENTILATION FLOOR PLAN

Sheet No.

M101



SHEET NOTES

- ① RETURN AIR DUCTING TO BE RUN UNDER FLOOR. ROUTE THROUGH OPEN WEB IN FLOOR JOISTS.
- ② DUCT TRANSITION UP TO RD-1 FITTING.



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Sheet Contents

UNDERFLOOR VENTILATION
FLOOR PLAN

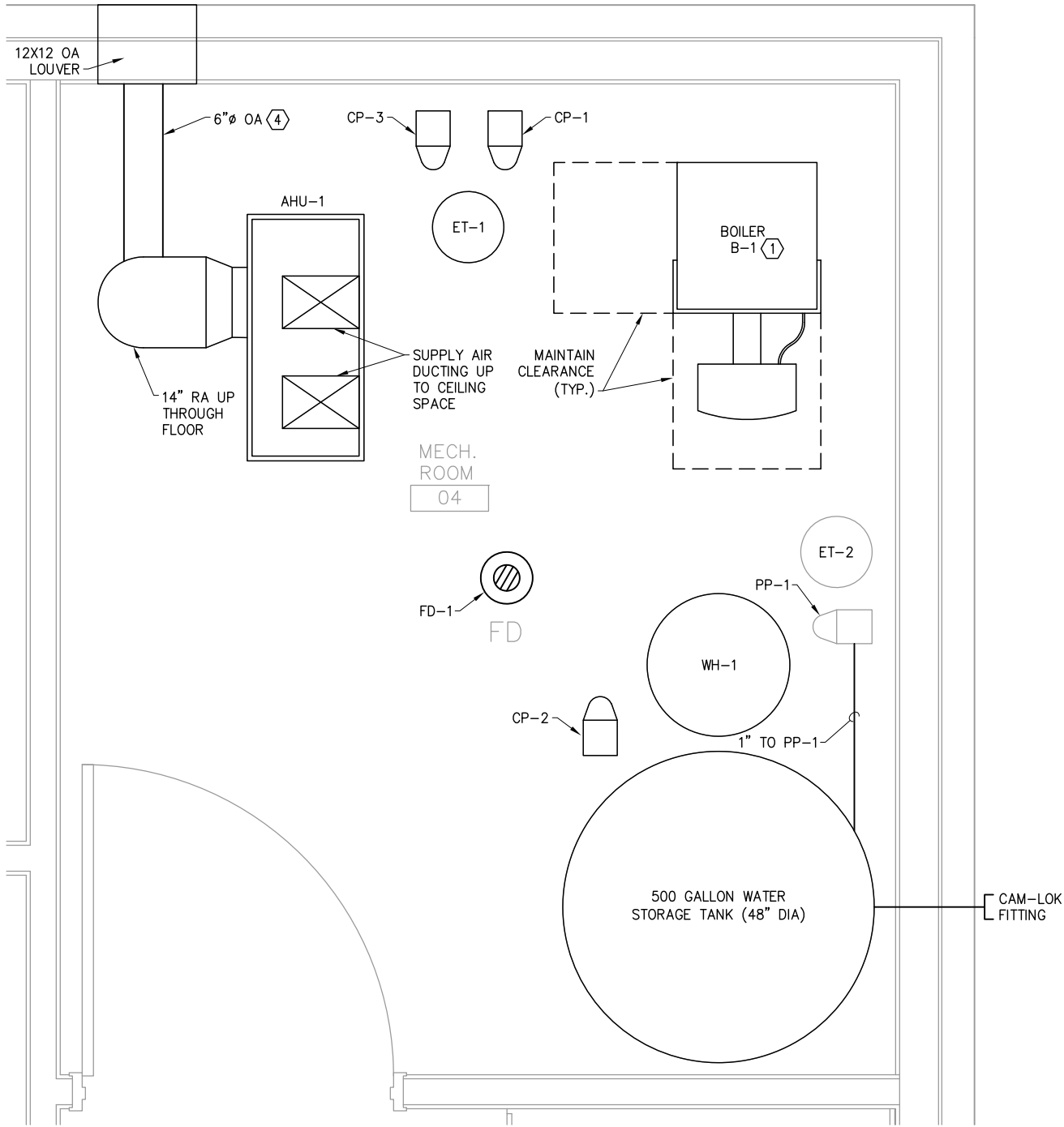
BID DOCUMENTS

ISSUED FOR AGENCY REVIEW

Sheet No.

M102

P:\Projects\00W\Bethel Dog Pound Bldg\Mech\W103 ENLARGED MECHANICAL ROOM PLAN.dwg PLOT DATE 2024-3-25 10:21 SAVED DATE 2024-03-25 10:18



1 ENLARGED MECHANICAL ROOM PLAN
M103 SCALE: 1" = 1'-0"



CONTROL NARRATIVE

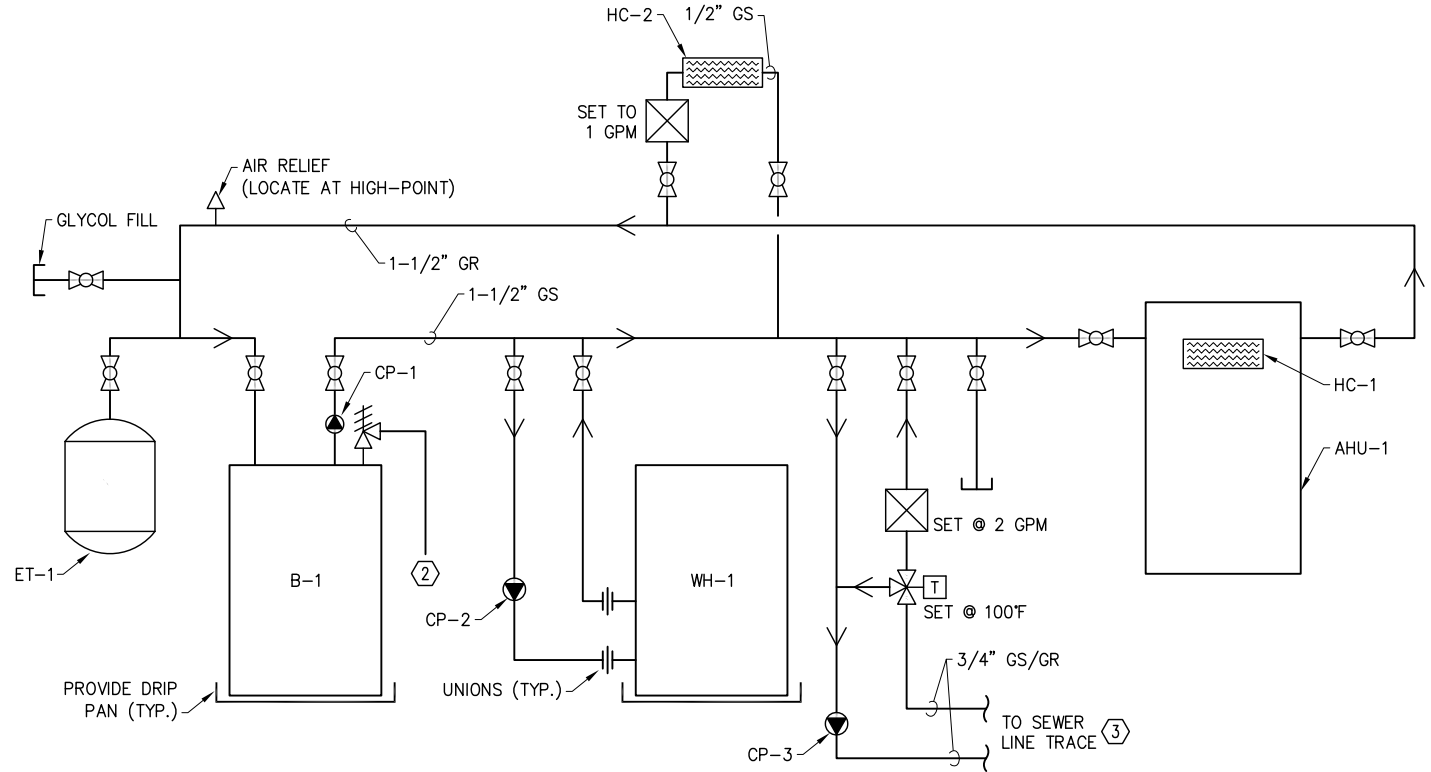
BUILDING CALL FOR HEAT:
ENERGIZE AHU-1, FIRE BOILER B-1, ENERGEIZE PUMP CP-1

WH-1 CALL FOR HEAT:
FIRE BOILER, ENERGIZE CP-1, ENERGIZE CP-2.

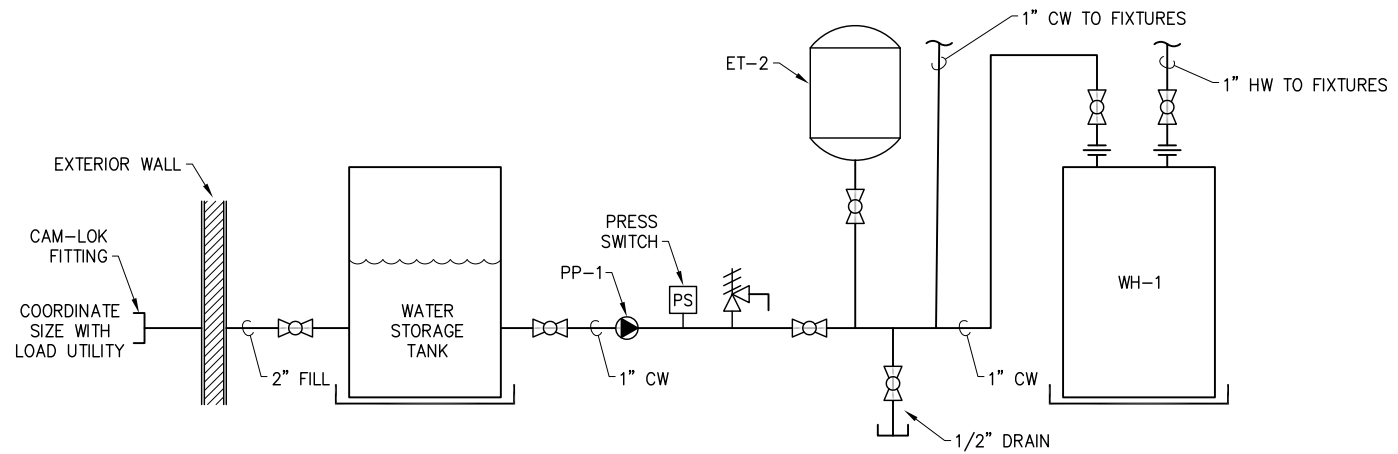
SEWER TRACE:
OUTSIDE AIR THERMOSTAT SHALL ENERGIZE CP-3 WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 35°F. THE THERMOSTATIC MIXING VALVE SHALL BE SET TO 100°F MAXIMUM.

SHEET NOTES

- 1 INSTALL DIRECT VENT KIT FROM MANUFACTURER.
- 2 ROUTE PSV DISCHARGE TO 6" AFF.
- 3 PROVIDE ISOLATION VALVES AND UNIONS AT TRANSITION TO PEX TRACE LINES.
- 4 PROVIDE OUTSIDE AIR INLET IN MECHANICAL ROOM, WITH DAMPER. CONNECT TO RA RISER BEFORE AHU-1.

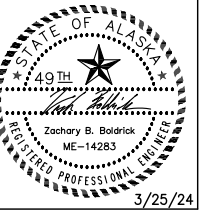


2 HYDRONIC SYSTEM SCHEMATIC
M103 SCALE: NTS



3 POTABLE WATER SYSTEM SCHEMATIC
M103 SCALE: NTS

BID DOCUMENTS
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CITY OF BETHEL
BETHEL DOG POUND BUILDING
BETHEL, ALASKA

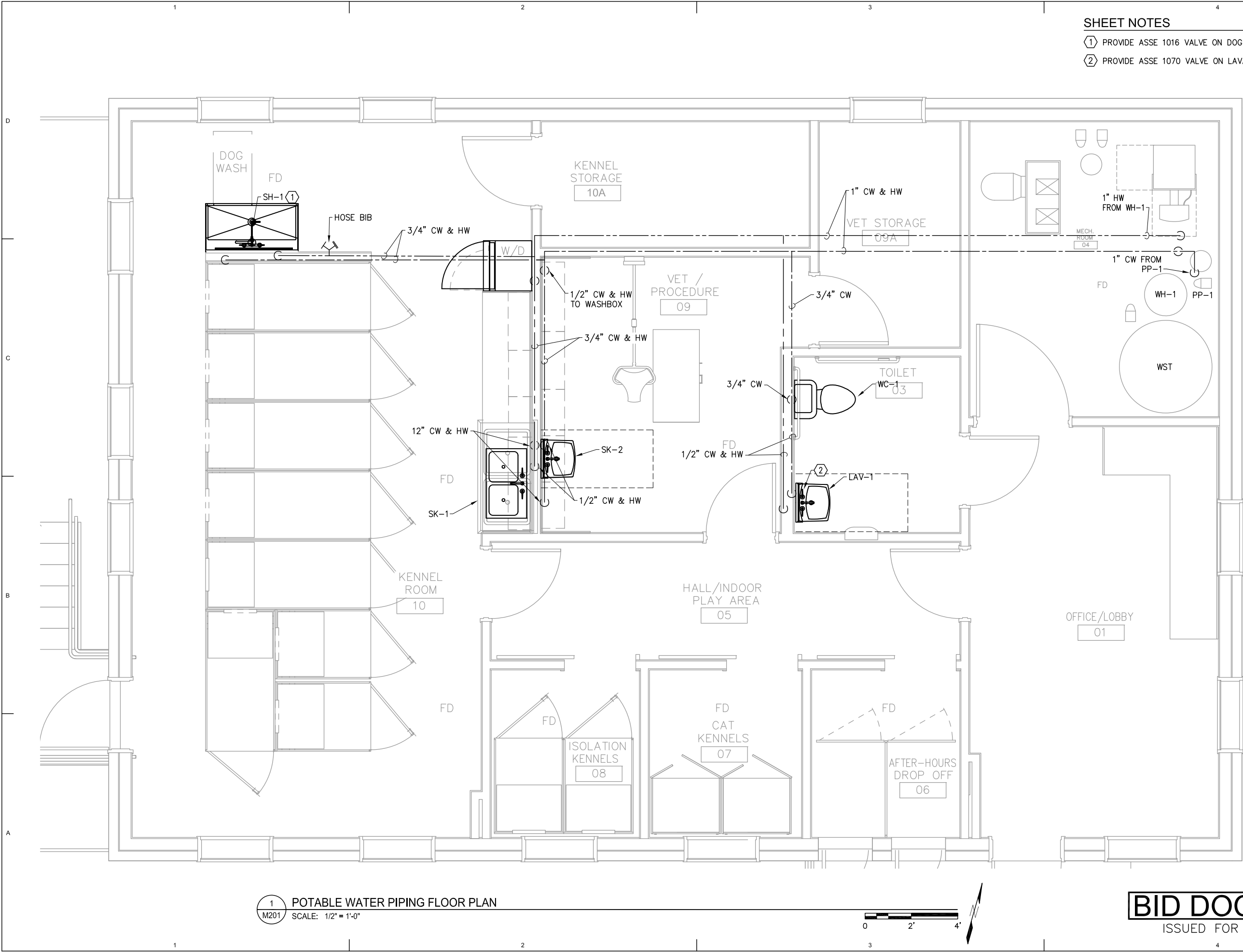
Revisions		
No.	Description	Date

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Sheet Contents
ENLARGED MECHANICAL ROOM PLAN

Sheet No.
M103

P:\Projects\00WV\Bethel Dog Pound Bldg\Drawings\Mech\M201 POTABLE WATER PIPING FLOOR PLAN.dwg PLOT DATE 2024-03-25 10:21 SAVED DATE 2024-03-22 12:51



- SHEET NOTES**
- ① PROVIDE ASSE 1016 VALVE ON DOG WASH SHOWER VALVE.
 - ② PROVIDE ASSE 1070 VALVE ON LAVATORY.



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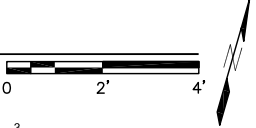
Sheet Contents

POTABLE WATER PIPING FLOOR PLAN

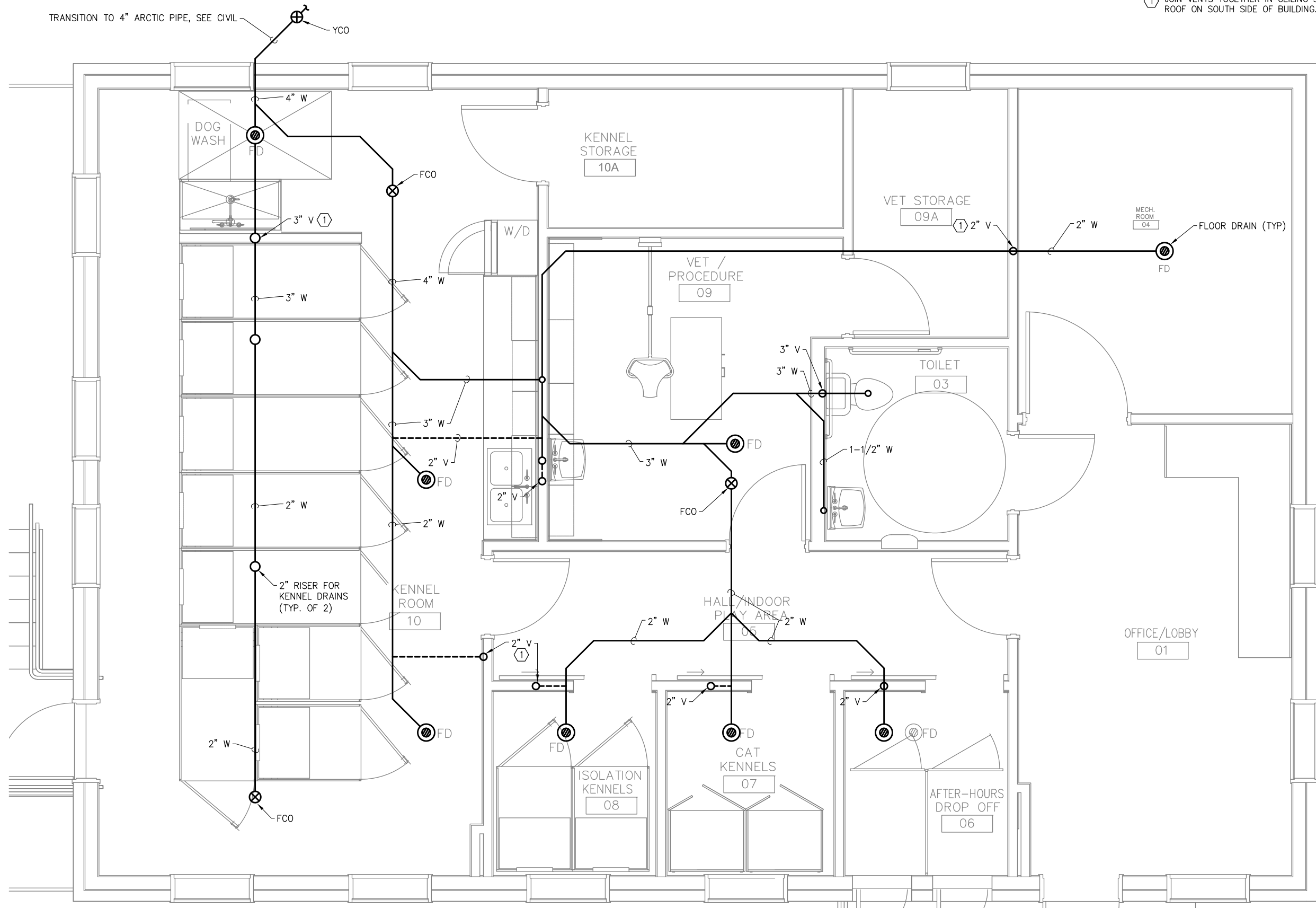
Sheet No.

M201

1 POTABLE WATER PIPING FLOOR PLAN
M201 SCALE: 1/2" = 1'-0"

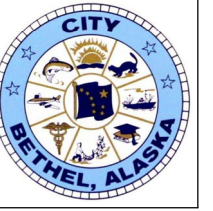
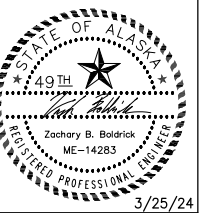


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SHEET NOTES

- 1 JOIN VENTS TOGETHER IN CEILING SPACE TO 4" VTR. PENETRATE ROOF ON SOUTH SIDE OF BUILDING.



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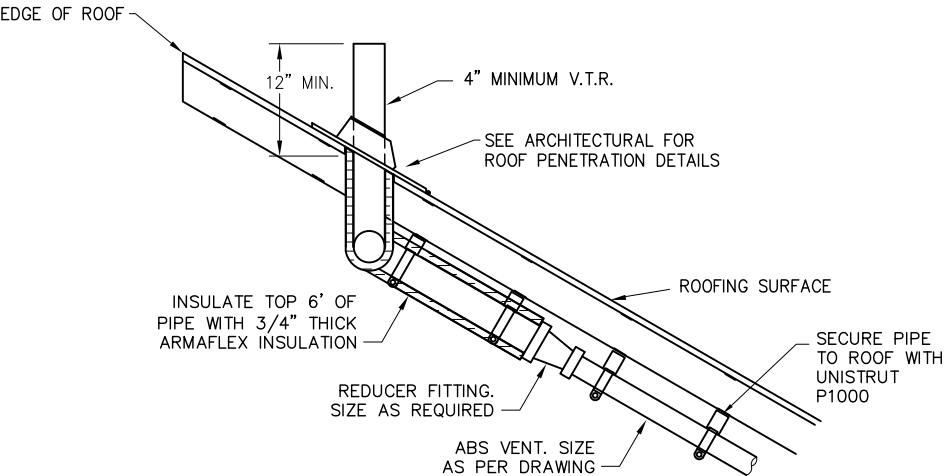
Sheet Contents

PLUMBING UNDERFLOOR PLAN

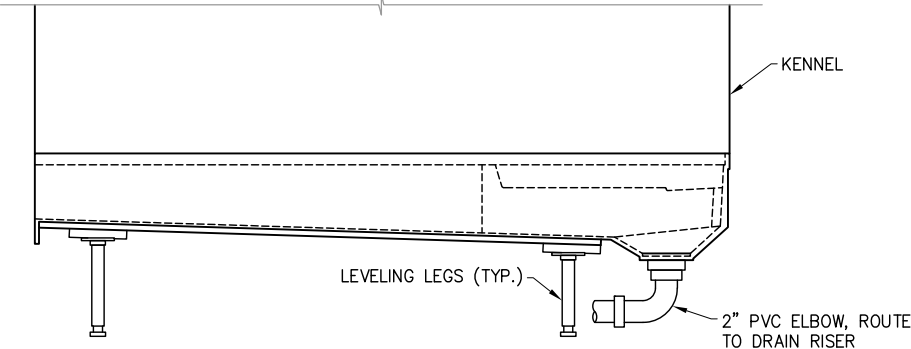
Sheet No.

M202

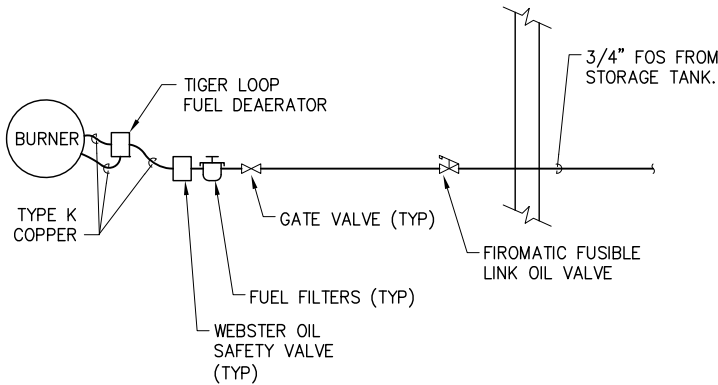
P:\Projects\00WL\Bethel Dog Pound Bldg\Drawgs\Mech\M301 MECHANICAL DETAILS.dwg PLOT DATE 2024-3-25 10:21 SAVED DATE 2024-03-22 13:20



1 VTR - VENT THROUGH - SANITARY SEWER
M301 SCALE: NTS



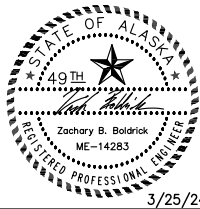
2 KENNEL DRAIN CONNECTION DETAIL
M301 SCALE: NTS



3 BOILER PIPING TIGER LOOP
M301 SCALE: NTS



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Sheet Contents
MECHANICAL DETAILS

Sheet No.
M301

BID DOCUMENTS
ISSUED FOR AGENCY REVIEW

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- SPECIFICATION GRADE AND ACCEPTABLE TO THE

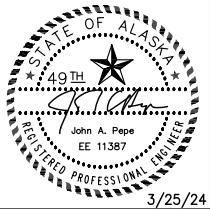
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	3	4
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SPECIFICATION GRADE AND ACCEPTABLE TO THE



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No.	Description	Date

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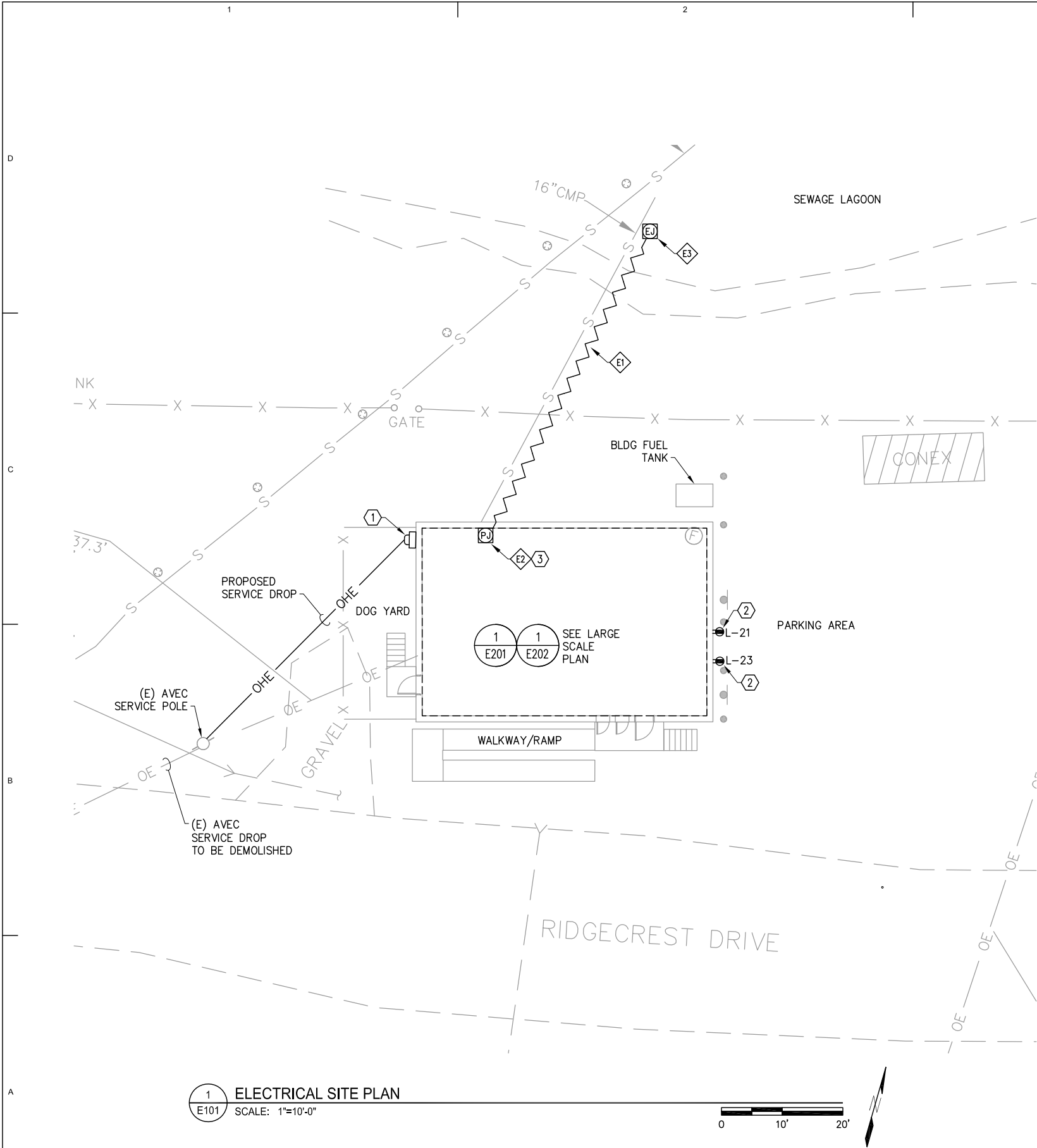
Sheet Contents

ELECTRICAL LEGEND, ABBREVIATIONS AND SCHEDULES

Sheet No.

E001

P:\Projects\00WL\Bethel Dog Pound Bldg\Drawgs\Elec\E101 SITE PLAN.dwg PLOT DATE 2024-3-25 10:23 SAVED DATE 2024-03-25 10:14



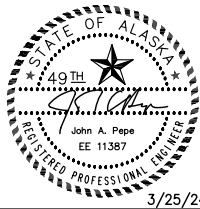
1 ELECTRICAL SITE PLAN
E101 SCALE: 1"=10'-0"

SHEET NOTES

- 1 METER/MAIN SERVICE EQUIPMENT. SEE SHEET E202 AND E401 FOR DETAILS. COORDINATE WITH SERVING UTILITY (AVEC) FOR ELECTRICAL SERVICE DROP CABLE ROUTING, SERVICE EQUIPMENT AND CONNECTIONS. ALL WORK SHALL BE IN ACCORDANCE WITH UTILITY STANDARDS.
- 2 PROVIDE BUILDING MOUNTED, HEADBOLT HEATER GFCI, DUPLEX RECEPTACLES IN WEATHERPROOF BOXES WITH METALLIC 'WHILE-IN-USE' COVERS. PROVIDE SIGNAGE IDENTIFYING 'HEADBOLT HEATER RECEPTACLES' AND CIRCUIT NUMBERS.
- 3 SEWER LINE OUTFALL PIPE HEAT TRACE CIRCUIT. SEE SHEET E202 AND E401 FOR POWER CONNECTION DETAILS.

ELECTRICAL EQUIPMENT SCHEDULE

ITEM NO.	DESCRIPTION	MANUFACTURER OR EQUAL
E1	120VAC, 8W/FT HEAT TRACE.	THERMON FLX
E2	HEAT TRACE POWER CONECTION KIT. SEE SHEET E202, E401 AND E501 FOR DETAILS.	THERMON
E3	HEAT TRACE END KIT. SEE SHEET E-501 FOR DETAILS.	THERMON



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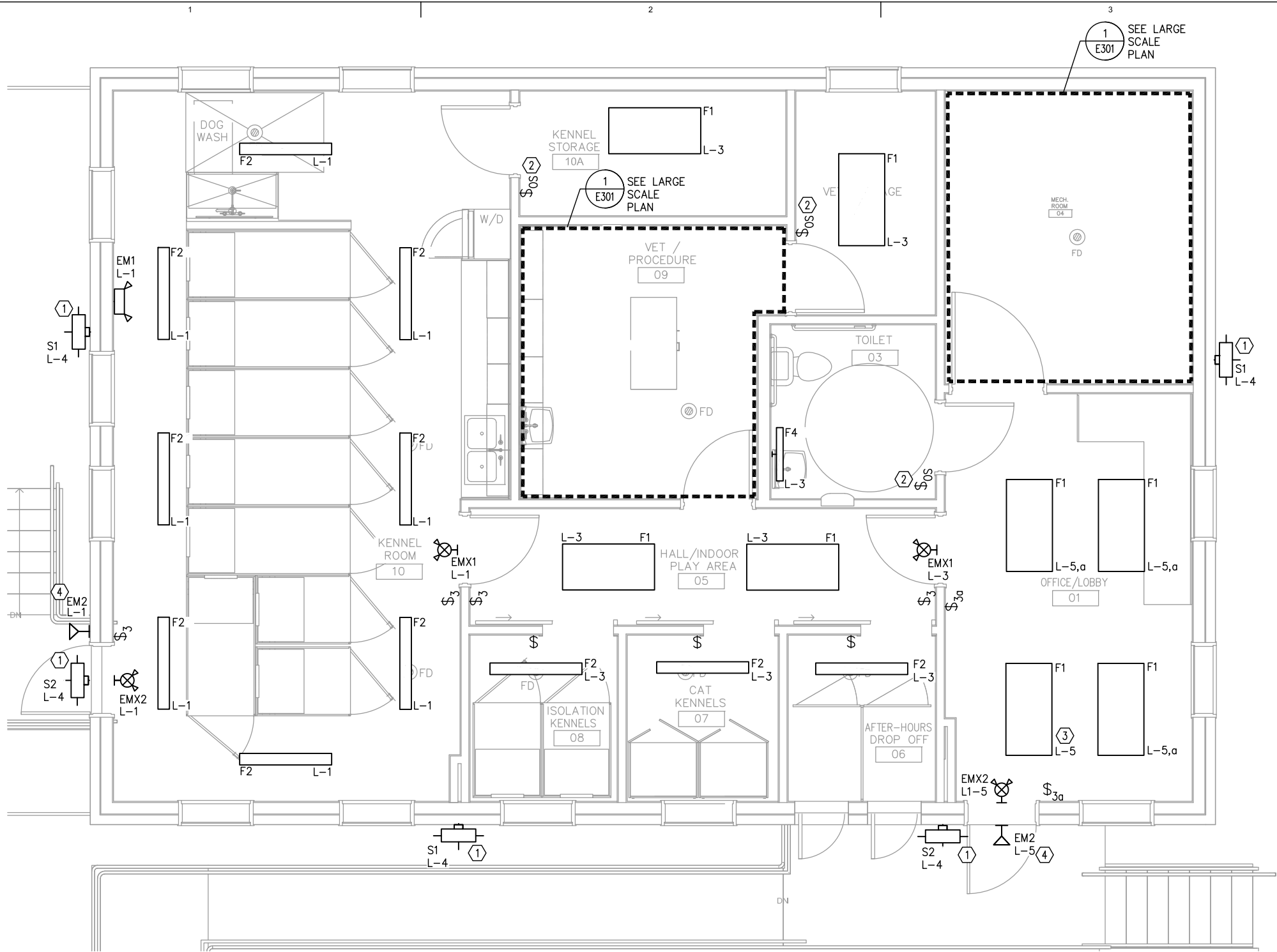
Revisions		
No.	Description	Date
Drawn by		Date
		3/25/2024
Checked		Job No.

Sheet Contents
ELECTRICAL SITE PLAN

Sheet No.
E101

BID DOCUMENTS
ISSUED FOR AGENCY REVIEW

P:\Projects\00WL\Bethel Dog Pound Bldg\Drawings\Elec\E201 ELECTRICAL FLOOR PLAN - LIGHTING.dwg PLOT DATE 2024-03-25 10:23 SAVED DATE 2024-03-22 17:41



1 ELECTRICAL FLOOR PLAN - LIGHTING
E201 SCALE: 3/8" = 1'-0"

SHEET NOTES

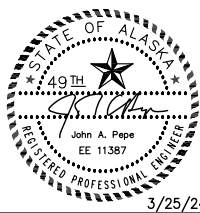
- 1 EXTERIOR LIGHTING CONTROL VIA 'LC-1' CONTACTOR WITH PHOTOCELL INPUT IN 'AUTO'. CONTACTOR LOCATED IN MECHANICAL ROOM. SEE SHEETS E301 AND E501 FOR DETAILS.
- 2 PROVIDE OCCUPANCY SENSOR LIGHTING CONTROL SWITCHES IN AREAS THAT ARE UNOCCUPIED.
- 3 PROVIDE UNSWITCHED FIXTURE AS NIGHT LIGHT.
- 4 REMOTE EMERGENCY FIXTURE HEAD BATTERY POWERED BY ADJACENT EMX2 FIXTURE.

GENERAL SHEET NOTES

1. INTERIOR LIGHTING CONTROL FROM LOCAL SWITCHES MOUNTED ADJACENT TO ENTRY/EXITS. THREE-WAY SWITCHING PROVIDED IN AREAS WITH MULTIPLE DOORS TO THE SPACE, UON.



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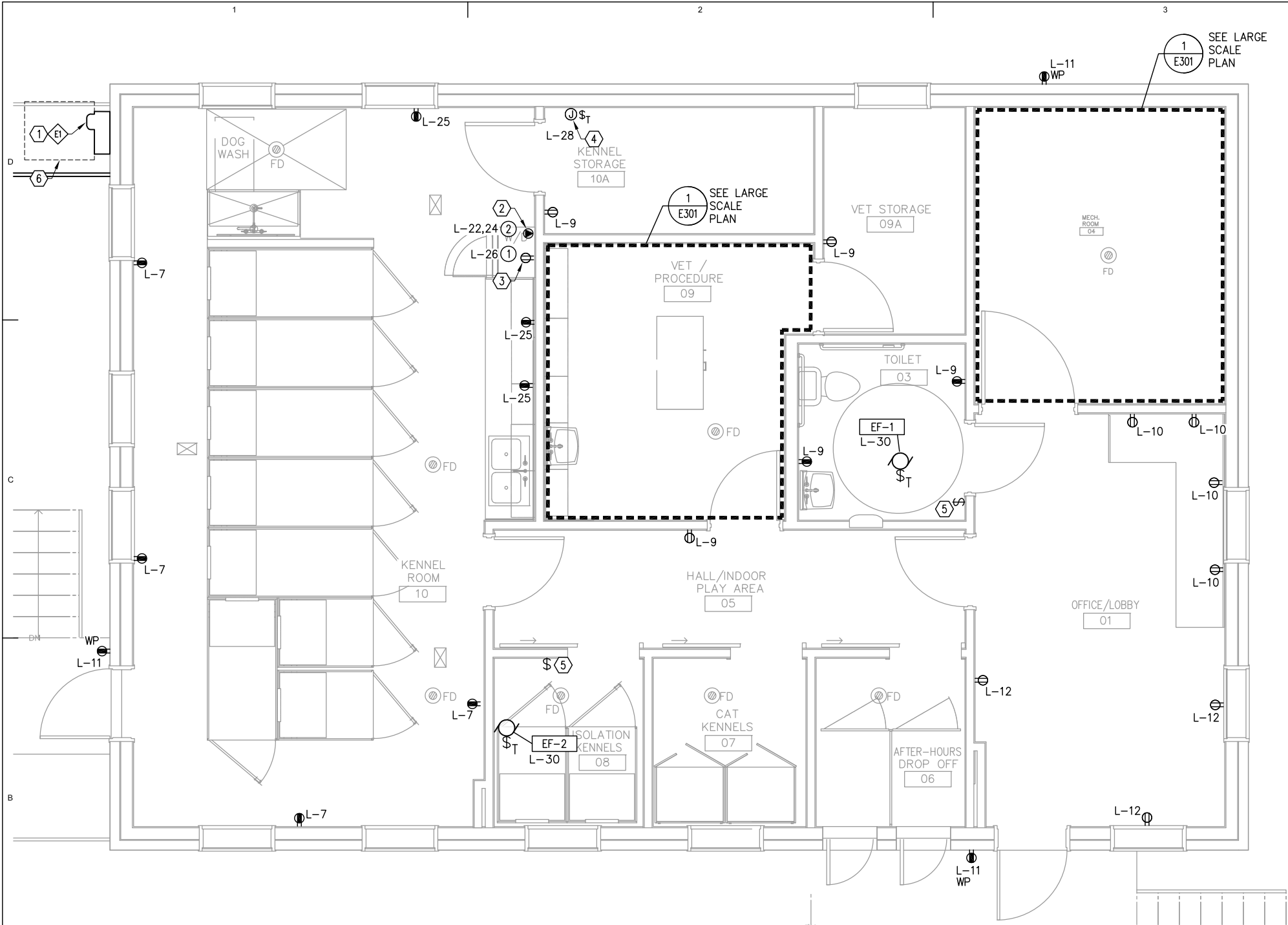
Drawn by	Date 3/25/2024
Checked	Job No. -

Sheet Contents
ELECTRICAL FLOOR PLAN - LIGHTING

Sheet No.
E201

BID DOCUMENTS
ISSUED FOR AGENCY REVIEW

P:\Projects\00W\Bethel Dog Pound Bldg\Draws\Elec\E202 ELECTRICAL FLOOR PLAN - POWER.dwg PLOT DATE 2024-3-25 10:23 SAVED DATE 2024-03-25 09:05



1 ELECTRICAL FLOOR PLAN - POWER
E202 SCALE: 3/8" = 1'-0"

SHEET NOTES

- COORDINATE WITH SERVING UTILITY (AVEC) FOR ELECTRICAL CABLE ROUTING, SERVICE EQUIPMENT AND CONNECTIONS. ALL WORK SHALL BE IN ACCORDANCE WITH UTILITY STANDARDS.
 - DRYER RECEPTACLE. SEE COMPONENT SCHEDULE THIS SHEET. COORDINATE INSTALLATION WITH MANUFACTURER REQUIREMENTS.
 - WASHER RECEPTACLE. SEE COMPONENT SCHEDULE THIS SHEET. COORDINATE INSTALLATION WITH MANUFACTURER REQUIREMENTS.
 - PROVIDE HEAT TRACE POWER CONNECTION KIT AND LIGHTED SWITCH FOR CONTROL OF SEWER LINE OUTFALL. SEE SHEET E-101 SITE PLAN FOR DETAILS.
 - PROVIDE LOCAL SWITCH FOR CONTROL OF EXHAUST FAN.
 - MAINTAIN 36" WORKING CLEARANCE IN FRONT OF EQUIPMENT. INSTALLATION SHALL BE IN ACCORDANCE WITH AVEC REQUIREMENTS.
- E# SEE E401 FOR ELECTRICAL EQUIPMENT SCHEDULE.

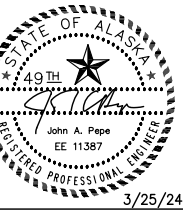
COMPONENT SCHEDULE

TAG ID	LOAD				CIRCUIT SIZE	DESCRIPTION	CONNECTION
	KW	FLA	V	PH			
1			120	1	1/2"C, 2#12(H,N), 1#12 EGC	WASHER UNIT	NEMA 5-20R
2			240	1	3/4"C, 3#10(2H,N), 1#12 EGC	ELECTRIC DRYER UNIT	NEMA 14-30R

EQUIPMENT CONNECTION SCHEDULE

TAG ID	LOAD					CIRCUIT SIZE	NOTES
	KW	HP	FLC	V	PH		
EF-1		FHP		120	1	1/2"C, 2#12(H,N), 1#12 EGC	
EF-2		FHP		120	1	1/2"C, 2#12(H,N), 1#12 EGC	

NOTES:
1.



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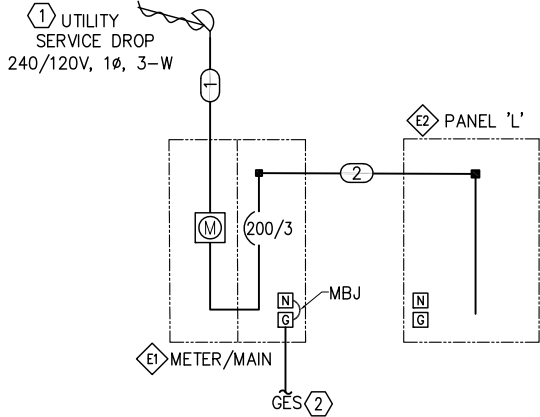
Sheet Contents
ELECTRICAL FLOOR PLAN -
POWER

Sheet No.

E202

BID DOCUMENTS
ISSUED FOR AGENCY REVIEW

P:\Projects\00WL\Bethel\Dog Pound Bldg\Drawgs\Elec\E401 POWER ONE-LINE AND PANEL SCHEDULES.dwg PLOT DATE 2024-03-25 10:23 SAVED DATE 2024-03-25 09:39



ELECTRICAL EQUIPMENT SCHEDULE		
ITEM NO.	DESCRIPTION	MANUFACTURER OR EQUAL
E1	METER/MAIN, 225A, 240/120V, 1Ø, 3W, NEMA 3R	CIRCLE AW OR EQUAL. EQUIPMENT SHALL BE IN ACCORDANCE WITH AVEC SERVICE REQUIREMENTS
E2	225A, 240/120V, 1Ø, 3W, MLO, 42-SPACE, NEMA 1, PANELBOARD 'L'	SQUARE D QO TYPE

CIRCUIT / FEEDER SCHEDULE	
TAG	DESCRIPTION
1	2"C, 3#3/0 (2H,N), 1#6 EGC. XHHW INSULATION.
2	2"C, 3#3/0 (2H,N), 1#6 EGC.

SHEET NOTES

- 1 COORDINATE WITH SERVING UTILITY (AVEC) FOR ELECTRICAL CABLE ROUTING, SERVICE EQUIPMENT AND CONNECTIONS. ALL WORK SHALL BE IN ACCORDANCE WITH UTILITY STANDARDS.
- 2 GROUNDING ELECTRODE SYSTEM (GES). SEE SHEET E501 FOR DETAILS.

1 POWER ONE-LINE AND PANEL SCHEDULES
E401 SCALE: NTS

VOLT: 120/240V BUS: 225 MAIN: MLO				PANEL 'L' SCHEDULE						A.I.C. RATING: 22,000 ENCLOSURE: NEMA 1 MOUNTING: SURFACE					
				LOCATION: MECHANICAL RM											
CKT	AMP	LOAD DESCRIPTION		KVA	LOAD	A	B	LOAD	KVA	LOAD DESCRIPTION		AMP	CKT		
1	20/1	LTG: KENNEL RM		0.5	L	1.0		L	0.5	LTG: VET PROCEDURE RM		20/1	2		
3	20/1	LTG: STORAGE/TOILET/HALL		0.3	L		0.8	L	0.5	LTG: EXTERIOR		20/1	4		
5	20/1	LTG: OFFICE/MECH. RM		0.4	L	0.8		L	0.4	REC: MECHANICAL RM		20/1	6		
7	20/1	REC: KENNEL RM		0.7	R		1.7	R	1.0	REC: VET PROCEDURE		20/1	8		
9	20/1	REC: HALL/STORAGE/TOILET		0.7	R	1.4		R	0.7	REC: OFFICE		20/1	10		
11	20/1	REC: EXTERIOR		0.5	R		1.4	R	0.9	REC: OFFICE		20/1	12		
13	20/1	BOILER, B-1/CIRC PUMP CP-1		0.6	M	0.9			0.3	GLYCOL HEAT TRACE CIRC PUMP, CP-3		20/1	14		
15	20/2	PRESSURE PUMP, PP-1		0.8	LM		1.3	M	0.5	WATER HEATER, WH-1/CIRC PUMP, CP-2		20/1	16		
17				0.8	LM	1.0		M	0.2	HEAT RECOVERY UNIT, HRV-1		20/1	18		
19	20/1	AIR HANDLING UNIT, AHU-1		0.5	M		0.7	M	0.2	VET/PROCEDURE RM FRIG		20/1	20		
21	20/1	HEADBOLT HEATER REC		1.2	C	3.7		N	2.5	KENNEL RM LAUNDRY DRYER		30/2	22		
23	20/1	HEADBOLT HEATER REC		1.2	C		3.7	N	2.5				24		
25	20/1	REC: KENNEL RM		0.5	R	1.5		M	1.0	KENNEL RM LAUNDRY WASHER		20/1	26		
27							0.8	C	0.8	*WASTELINE HEAT TRACE		20/1	28		
29						0.1		M	0.1	EXHAUST FANS, EF-1 AND EF-2		20/1	30		
31							0.0						32		
33							0.0						34		
35							0.0						36		
37							0.0						38		
39	20/1	SPARE			S		0.0	S		SPARE		20/1	40		
41	20/1	SPARE			S	0.0		S		SPARE		20/1	42		
						10.5	10.5								
*PROVIDE 30mA GFCI CIRCUIT FOR HEAT TRACE														TOTAL KVA: 21.0 AMPS: 87.3	
SUMMARY BY LOAD TYPE		CONNECTED KVA				TOTAL L KVA	NEC%	NEC TOTAL	NOTES:						
		PH A	PH B	FEED											
L	LIGHTING	1.8	0.8			2.6	1.25	3.2							
R	RECEPTACLES	2.0	3.2			5.1	10K+50%	5.1							
M	MOTORS	1.9	1.2			3.1	1.00	3.1							
LM	LARGEST MOTOR	0.8	0.8			1.7	1.25	2.1							
C	CONTINUOUS	1.2	2.0			3.2	1.25	4.0							
N	NON-CONTINUOUS	2.5	2.5			5.0	1.00	5.0							
S	SPARE	0.0	0.0			0.0	1.00	0.0							
X	NON-COINCIDENT	0.0	0.0			0.0	0.00	0.0							
O	OTHER	0.0	0.0			0.0	1.00	0.0							
F	FEEDER	0.0	0.0			0.0	1.00	0.0							
TOTAL KVA (PHASE)		10.2	10.5			20.7		22.5							
TOTAL AMPERES		84.8	87.4			86.1		93.8							
PHASE BALANCE, AB		A-B	B-A												
PERCENT		50	50												

BID DOCUMENTS
ISSUED FOR AGENCY REVIEW



CITY OF BETHEL
BETHEL DOG POUND BUILDING
BETHEL, ALASKA

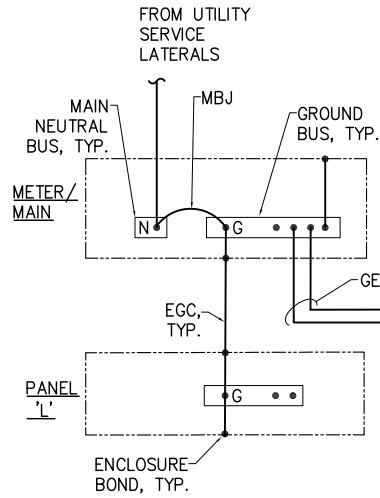
Revisions		
No.	Description	Date

Drawn by	Date 3/25/2024
Checked	Job No. -

Sheet Contents
POWER ONE-LINE AND PANEL
SCHEDULES

Sheet No.
E401

P:\Projects\00WL\Bethel Dog Pound Bldg\Drawgs\Elec\E501 ELECTRICAL DETAILS.dwg PLOT DATE: 2024-3-25 10:23 SAVED DATE: 2024-03-22 16:39



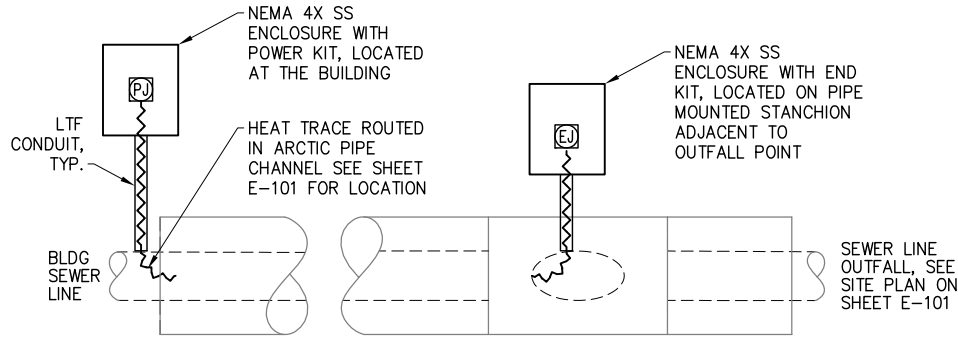
NOTES

1. PROVIDE ELECTRICALLY CONTINUOUS GROUNDING AND BONDING SYSTEM. PROVIDE BONDING JUMPER EQUAL TO GROUNDING ELECTRODE CONDUCTOR AS REQUIRED.
2. ALL CONDUCTOR SIZES ARE COPPER.
3. PROVIDE GROUNDING PER NEC ARTICLE 250 REQUIREMENTS.

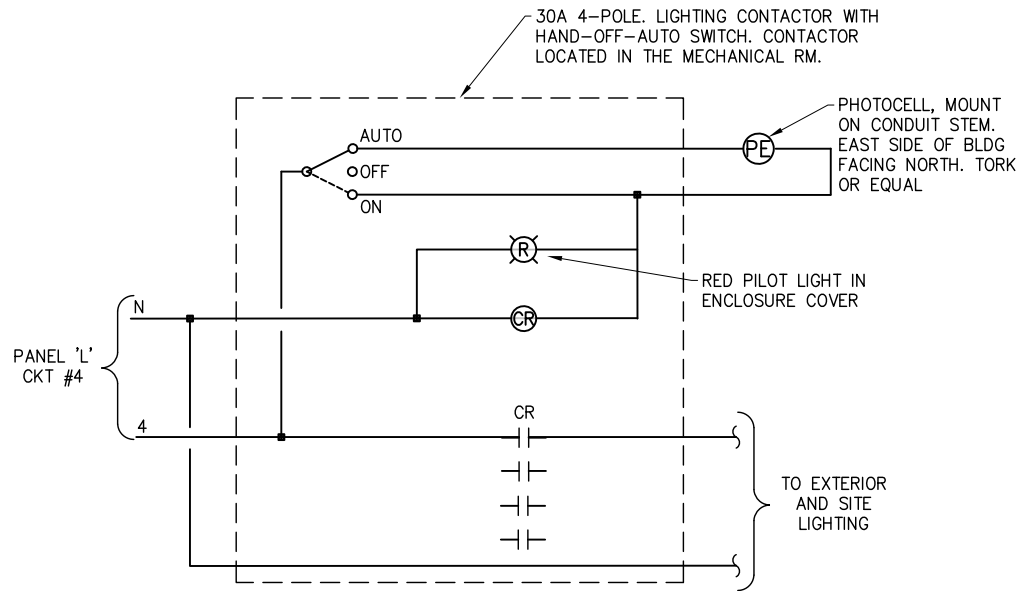
LEGEND

BCU - BARE COPPER
EGC - ELECTRODE GROUNDING CONDUCTOR
GEC - GROUNDING ELECTRODE CONDUCTOR
MBJ - MAIN BONDING JUMPER
G - GROUNDING (BUS BAR, CONDUCTOR)
NEUTRAL - NEUTRAL (BUS BAR, CONDUCTOR)

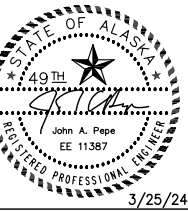
1 ELECTRICAL GROUNDING DETAIL
E501 SCALE: NTS



3 SEWER LINE OUTFALL HEAT TRACE DETAIL
E501 SCALE: NTS



2 EXTERIOR LIGHTING CONTRACTOR 'LC-1' DIAGRAM
E501 SCALE: NTS



CITY OF BETHEL
BETHEL DOG POUND BUILDING
BETHEL, ALASKA

Revisions		
No.	Description	Date

Drawn by	Date 3/25/2024
Checked	Job No. -

Sheet Contents
ELECTRICAL DETAILS

BID DOCUMENTS
ISSUED FOR AGENCY REVIEW

Sheet No.
E501

Project Contract Forms

NOTICE OF AWARD

Date of Issuance:

Owner:

Owner's Project No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's Address:

You are notified that Owner has accepted your Bid dated **[date]** for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

[Describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is \$**[Contract Price]**. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

[Number of copies sent] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

☐ Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner **[number of copies sent]** counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): **[Describe other conditions that require Successful Bidder's compliance]**

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: **[Full formal name of Owner]**

By (signature): _____

Name (printed): _____

Title: _____

Copy: Engineer

EJCDC® C-510, Notice of Award.

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Page 1 of 1

NOTICE TO PROCEED

Owner: _____ Owner's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Contractor: _____ Contractor's Project No.: _____
Project: _____
Contract Name: _____
Effective Date of Contract: _____

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on **[date Contract Times are to start]** pursuant to Paragraph 4.01 of the General Conditions.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date.

In accordance with the Agreement: **[Select one of the following two alternatives, insert dates or number of days, and delete the other alternative.]**

The date by which Substantial Completion must be achieved is **[date for Substantial Completion, from Agreement]**, and the date by which readiness for final payment must be achieved is **[date for readiness, from Agreement]**.

[or]

The number of days to achieve Substantial Completion is **[number of days, from Agreement]** from the date stated above for the commencement of the Contract Times, resulting in a date for Substantial Completion of **[date, calculated from commencement date above]**; and the number of days to achieve readiness for final payment is **[number of days, from Agreement]** from the commencement date of the Contract Times, resulting in a date for readiness for final payment of **[date, calculated from commencement date above]**.

Before starting any Work at the Site, Contractor must comply with the following:

[Note any access limitations, security procedures, or other restrictions]

Owner: **[Full formal name of Owner]**
By *(signature)*: _____
Name *(printed)*: _____
Title: _____
Date Issued: _____
Copy: Engineer

Contractor's Application for Payment

Owner: _____ Engineer: _____ Contractor: _____ Project: _____ Contract: _____	Owner's Project No.: _____ Engineer's Project No.: _____ Contractor's Project No.: _____
Application No.: _____ Application Date: _____	
Application Period: From _____ to _____	

1. Original Contract Price	\$	-
2. Net change by Change Orders	\$	-
3. Current Contract Price (Line 1 + Line 2)	\$	-
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	-
5. Retainage		
a. _____ X \$ _____ Work Completed	\$	-
b. _____ X \$ _____ Stored Materials	\$	-
c. Total Retainage (Line 5.a + Line 5.b)	\$	-
6. Amount eligible to date (Line 4 - Line 5.c)	\$	-
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application	\$	-
9. Balance to finish, including retainage (Line 3 - Line 4)	\$	-

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor: _____	
Signature: _____	Date: _____

Recommended by Engineer By: _____ Title: _____ Date: _____	Approved by Owner By: _____ Title: _____ Date: _____
Approved by Funding Agency By: _____ Title: _____ Date: _____	By: _____ Title: _____ Date: _____

Contractor's Application for Payment

Owner:	_____	Owner's Project No.:	_____
Engineer:	_____	Engineer's Project No.:	_____
Contractor:	_____	Contractor's Project No.:	_____
Project:	_____		
Contract:	_____		

[illegible]

Contractor's Application for Payment

Owner:	_____	Owner's Project No.:	_____
Engineer:	_____	Engineer's Project No.:	_____
Contractor:	_____	Contractor's Project No.:	_____
Project:	_____		
Contract:	_____		

Application No.:	Application Period:	From	to	Application Date:
------------------	---------------------	------	----	-------------------

A	B	C	D	E	F	G	H	I	J	K	L
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
Change Orders											
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
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					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
Change Order Totals					\$ -		\$ -	\$ -	\$ -		\$ -
Original Contract and Change Orders											
Project Totals					\$ -		\$ -	\$ -	\$ -		\$ -

Contractor's Application for Payment

Owner:		Owner's Project No.:	
Engineer:		Engineer's Project No.:	
Contractor:		Contractor's Project No.:	
Project:			
Contract:			

Application No.:	Application Period:	From	to	Application Date:
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[illegible]

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:
Engineer:
Contractor:
Project:
Contract Name:

Owner's Project No.:
Engineer's Project No.:
Contractor's Project No.:

This ☐ Preliminary ☐ Final Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

[Describe the portion of the work for which Certificate of Substantial Completion is issued]

Date of Substantial Completion: **[Enter date, as determined by Engineer]**

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities: ☐ None ☐ As follows:

[List amendments to Owner's Responsibilities]

Amendments to Contractor's Responsibilities: ☐ None ☐ As follows:

[List amendments to Contractor's Responsibilities]

The following documents are attached to and made a part of this Certificate:

[List attachments such as punch list; other documents]

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Engineer

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

Change Order No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments (list documents supporting change):

CHANGE IN CONTRACT PRICE:

Original Contract Price:

\$ _____

[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____

\$ _____

Contract Price prior to this Change Order:

\$ _____

[Increase] [Decrease] of this Change Order:

\$ _____

Contract Price incorporating this Change

\$ _____

CHANGE IN CONTRACT TIMES:

Original Contract Times: ☐ Working days ☐ Calendar days

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____:

Substantial completion (days): _____

Ready for final payment (days): _____

Contract Times prior to this Change Order:

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

[Increase] [Decrease] of this Change Order:

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

Contract Times incorporating approved Change Orders:

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

RECOMMENDED:

By: _____
Engineer (Authorized Signature)

Date: _____

Approved by Funding Agency (if applicable):

ACCEPTED:

By: _____
Owner (Authorized Signature)

Date: _____

ACCEPTED:

By: _____
Contractor (Authorized Signature)

Date: _____

Date: _____

CITY OF BETHEL, ALASKA

ORDINANCE #24-06

AN ORDINANCE BY THE BETHEL CITY COUNCIL AMENDING BETHEL MUNICIPAL CODE CHAPTER 2.60, COMMITTEES, COMMISSIONS AND AD HOC COMMITTEES TO REDUCE THE NUMBER OF ADULT VOTING MEMBERS AND QUORUM STANDARDS FOR COMMITTEES AND COMMISSIONS UNDER SPECIAL CIRCUMSTANCES

WHEREAS, Bethel Municipal Code 2.60 creates seven committees and commissions that act as advisory bodies to the Council: the Planning Commission, the Port Commission, the Public Safety and Transportation Commission, the Community Action Grant Committee, the Finance Committee, the Community Parks and Recreation Committee, and the Public Works Committee;

WHEREAS, BMC 2.60.010 defines a “quorum” as the minimum number of members of a committee, commission, or ad hoc committee that must be present at any meeting to conduct business;

WHEREAS, BMC 2.60.040 provides that “all committees and commissions shall consist of seven (7) appointed adult voting members;

WHEREAS, BMC 2.60.050 provides that “four (4) members shall constitute a quorum for the transaction of business for committees and commissions”; and

WHEREAS, numerous committees and commissions are having consistent trouble meeting quorum, which prevents these bodies from conducting business;

NOW THEREFORE BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF BETHEL, ALASKA,

Section 1. Classification. This ordinance is permanent in nature and shall be placed in the Bethel Municipal Code.

Section 2. Amendment. Bethel Municipal Code 2.60 is amended, old language is stricken, and new language is underlined.

2.60.040 Composition of committees, commissions, and ad hoc committees.

A. All committees and commissions shall consist of seven (7) council-appointed adult voting members. One (1) member shall be a member of the city council and act as the council representative to provide a direct line of communication between the advisory board and the city council. Each council member shall be appointed to only one (1) committee, commission, and/or ad hoc committee.

B. In addition to the seven (7) adult voting members, the council may appoint up to two (2) alternative members and one (1) youth member to any advisory committee or commission.

C. An ad hoc committee may have fewer but not more members than the number provided under subsections [A](#) and [B](#) of this section, and in no event less than five (5) members.

D. Each committee or commission shall annually elect a chair and a vice chair from its membership. An ad hoc committee shall elect a chair and vice chair at the first (1st) meeting of the body. The vice chair shall act in the absence of the chair or in the event the chair is unable to act.

E. The city manager is responsible for the effective management of committee, commission, and ad hoc committee operations and shall provide the staff required to assist the body in discharging its duties. The city manager shall appoint at least one (1) ex officio member to provide staff support to each committee, commission, and ad hoc committee. Ex officio members report to and take direction from the city manager and not from the body to which they are appointed.

The duties of the ex officio member include but are not limited to: preparation and posting of agendas, packet materials, meeting minutes, and other relevant documents in accordance with Alaska Statutes ([44.62.310](#) through [44.62.319](#)), Bethel Municipal Code, and city policy. The ex officio member appointed to the body shall also provide subject matter expertise to the body.

Introduced by: Council Member Snow
Introduction Date: July 9, 2024
Public Hearing Date: July 23, 2024
Action:

An ex officio member is a nonvoting member of the body, but may add items to the agenda and participate in discussion.

F. If a committee or commission has five or less council appointed adult voting members, the city council may by resolution authorize a temporary exemption to Section 2.06.040 A, reducing council appointed membership requirement to five (5). The exemption shall expire when the exempted committee exceeds five council appointed adult voting members or on the date provided by the resolution. Under the five-member exemption, three (3) members shall constitute a quorum for the transaction of business and three (3) affirmative votes shall be necessary to carry any question.

SECTION 3. Effective Date. This ordinance shall become effective upon passage by the Bethel City Council.

ENACTED THIS _____ DAY OF _____ 2024, BY A VOTE OF _____ IN FAVOR AND _____ OPPOSED.

ATTEST:

Mark Springer, Mayor

Lori Strickler, City Clerk

City of Bethel Action Memorandum

Action memorandum No.	24-18		
Date action introduced:	July 9, 2024	Introduced by:	Acting City Manager Strickler
Date action taken:		Approved	Denied
Confirmed by:			

Action Title: Authorize the Acting City Manager to negotiate and execute an amendment to a contract for IT Support Services with Alaska Communications for Remote Technical Support Services

Attachment(s) (1) Request for Bids – Chemical Storage Building, Prepared by DOWL, LLC (2) Chemical Storage Building Bid Tabulation Form.

Department/Individual:	Initials:	Remarks:
Account information:		Amount of fiscal impact:
100-55-6320	IT Services Other Professional Fees	\$119,712

Summary Statement

In 2020, the City of Bethel entered into a contract with Alaska Communications, for remote IT Services. At that time the City employed an IT Director, and IT Technician.

After an evaluation of current need, the city administration will transition away from two full time staff members in house, to primarily remote IT support services, with onsite support services every five weeks. Following an evaluation period, the City will identify the success of this alternative for future operations.

The total cost of this amendment is about \$119,712 for travel/lodging and services. IT Services Other Professional Fees is budgeted for \$85,000 for Fiscal Year 2025. Administration will present the council with a budget modification the first meeting in August to move funds from IT personnel, to IT Other Professional Fees. If approved, the transition from in house IT service, to primarily remote, with occasional onsite, is expected to save the City over \$150,000 annually.

**CITY OF BETHEL AND ALASKA COMMUNICATIONS
PROFESSIONAL SERVICES AGREEMENT
FOR
REMOTE TECHNICAL SUPPORT SERVICES**



THIS AGREEMENT made and entered into this 1st day of July 2020, by and between the CITY OF BETHEL (a municipal corporation) and ALASKA COMMUNICATIONS (a technical support provider).

Section 01 Definition

In this Agreement:

- A. The term "City" means the City of Bethel.
- B. The term "Provider" means Alaska Communications.

Section 02 Employment of Remote Technical Support Provider

The City hereby agrees to engage the Provider and the Provider hereby agrees to perform the services hereafter set forth.

Section 03 Scope of Services

The services to be furnished by the Provider are described in the following attachments:

- Attachment A – Service Description – ConstantlyOn IT
- Attachment B – ConstantlyOn IT Minimum Security Requirements and Client Agreement

Section 04 Term

This Agreement shall be deemed in force as of July 1, 2020 and shall remain in effect until December 31, 2025, unless terminated as hereinafter provided and subject to funds properly appropriated by the Bethel City Council during its annual City budget for IT services. A termination for lack of appropriate funds must comply with Section 8 below.

Section 05 Compensation

A. Subject to the provisions of this Agreement, the City shall pay the Provider a fixed fee each month of \$72 per covered user. ConstantlyOn IT services are provided for a total of 80 end users. User count and monthly recurring charge may be adjusted to a final user count as identified during the Onboarding process. Additionally, there will be a one-time fee of \$5,714.00 for Onboarding services at initiation of services.



B. Except as otherwise provided in this Agreement, the City shall not provide any additional compensation, payment, service or other thing of value to the Provider in connection with performance of Agreement duties. The parties understand and agree that, except as otherwise provided in this section, administrative overhead and other indirect or direct costs the Provider may incur in the performance of its obligations under this Agreement have already been included in computation of the Provider's fee and will not be charged to the City.

C. Total compensation shall not exceed seventy-five thousand dollars (\$75,000) for the first year ending June 30, 2021 and seventy thousand dollars (\$70,000) in Years 2-5 and thirty five thousand dollars (\$35,000) for the six-month period ending December 31, 2025 without the express written authorization of the City.

Section 06 Method and Time of Payment

A. Provider shall invoice the City monthly. City payments are due within thirty (30) days of each invoice date. Such payments shall constitute the full and complete compensation for the Provider professional services.

B. All invoices must be submitted in duplicate and addressed as follows:
City of Bethel
Attn: Accounts Payable
PO Box 1388
Bethel AK 99559-1388
accountspayable@cityofbethel.net

Section 07 Termination of Agreement for Cause

If, through any cause, the Provider shall fail to fulfill in a timely and proper manner the obligations under this Agreement or if the Provider shall violate any of the covenants, agreements, or stipulations of this Agreement, the City shall thereupon have the right to terminate this Agreement by giving written notice to the Provider of such violation and at least thirty (30) to cure. If Provider fails to cure (or commence diligent efforts to cure, in the case of violations that cannot be cured in 30 days) then the City will be entitled to terminate this Agreement. The Provider shall be entitled to receive compensation in accordance with the payment provisions of this Agreement only for work completed to the City's satisfaction in accordance with Section 3 of this Agreement and the other terms of this Agreement.

Section 08 Termination for Non-Availability of Government Funds

If the City Council fails to appropriate sufficient funds or to authorize the expenditure of sufficient funds to continue service under this Agreement, City may submit a written notice to



Provider terminating this Agreement. Such notice shall be in writing and shall be not less than thirty (30) days prior to the date of termination. The notice shall include a written statement documenting the reason for termination and an official document certifying the non-availability of funds (e.g., Bethel City Council action; official budget or other official government document). City shall be liable to Provider for all charges and costs for products and/or services incurred up to the effective date of the termination. The City's appropriation process will not be used as a reason to terminate this Agreement and select an alternative means to deliver these services if the Provider is otherwise in compliance with this Agreement. The City represents that the funding for the year ending June 30, 2021, for this Agreement have been properly appropriated and that it will provide 90 day's notice in the event that it is unable to fund IT services in a future year of the Agreement.

Section 09 Modifications

The parties may mutually agree to modify the terms of the Agreement. Modifications to the Agreement shall be incorporated into the Agreement by written amendments.

Section 10 Equal Employment Opportunity

The Provider and its subcontractors will not discriminate against any employee on the basis of race, national origin, color, age, creed, religion, sex, sexual orientation, gender identity, political affiliation, marital status, ancestry, disability, status as a disabled veteran or any other protected reason.

Section 11 Assignability

A. The Provider shall not assign any interest in this Agreement and shall not transfer any interest in the same (whether by assignment or novation) without the prior written consent of the City, thereto; provided, however that claims for money due or to become due to the Provider from the City under this Agreement may be assigned by court order or to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the City, or the Provider shall be responsible to the City for any moneys due the assignee of this Agreement which are paid directly to the Provider.

B. Provider shall remain responsible for any subcontract work or services under this Agreement to the same extent as if the work had been done directly by Provider.

Section 12 Permits, Laws and Taxes

The Provider shall acquire and maintain in good standing all permits, licenses and other entitlements necessary to the performance under this Agreement. All actions taken by the Provider under this Agreement shall comply with all applicable statutes, ordinances, rules and



regulations. The Provider shall pay all taxes pertaining to its performance under this Agreement.

Section 13 Relationship of the Parties

In the performance of services under this Agreement, the Provider shall be, and acknowledges that Provider is, in fact and law, an independent contractor and not an agent or employee of the City. Provider has and retains the right to exercise full supervision and control of the manner and methods of providing services to City under this Agreement. The City may administer this Agreement and monitor the Provider compliance with this Agreement but shall not supervise or otherwise direct the Provider.

Section 14 Liability

Without limiting the obligation of City to pay for the Services under this Agreement, in no event will the aggregate liability of either Party, regardless of theory of liability, exceed an amount equal to the monthly recurring charges under this Agreement during the 12 months prior to the event giving rise to the first cause of action. This section does not apply to City's failure to pay all amounts owing to Provider under this Agreement or for early termination. NEITHER PARTY WILL BE LIABLE TO THE OTHER PARTY FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, SPECIAL, RELIANCE OR PUNITIVE DAMAGES (INCLUDING BUT NOT LIMITED TO DAMAGES FOR LOST PROFITS, LOST REVENUES, LOSS OF ANTICIPATED SAVINGS, OR LOSS OF REVENUES OF ANY KIND OR INCREASED COST OF OPERATIONS), WHETHER OR NOT SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. PROVIDER WILL NOT BE LIABLE FOR ANY DAMAGES ARISING OUT OF OR RELATING TO (i) SERVICE INTERRUPTIONS OR LOST OR ALTERED MESSAGES OR TRANSMISSIONS; (ii) UNAUTHORIZED ACCESS TO OR THEFT, ALTERATION, LOSS OR DESTRUCTION OF CITY'S, USERS' OR THIRD PARTIES' APPLICATIONS, CONTENT, DATA, PROGRAMS, INFORMATION, NETWORK OR SYSTEMS; (iii) INTEROPERABILITY, INTERACTION OR INTERCONNECTION PROBLEMS WITH APPLICATIONS, EQUIPMENT, SERVICES OR NETWORKS PROVIDED BY CITY, USERS OR OTHER THIRD PARTIES. PROVIDER MAKES NO WARRANTIES, EXPRESS OR IMPLIED AND SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NONINFRINGEMENT OR ANY WARRANTY ARISING BY USAGE OF TRADE, COURSE OF DEALING OR COURSE OF PERFORMANCE. PROVIDER DOES NOT WARRANT THAT THE SERVICES WILL BE UNINTERRUPTED OR ERROR-FREE OR THAT THE SERVICES WILL PREVENT UNAUTHORIZED ACCESS BY THIRD PARTIES. PROVIDER DOES NOT AUTHORIZE ANYONE TO MAKE A WARRANTY OF ANY KIND ON ITS BEHALF AND CITY SHOULD NOT RELY ON ANYONE MAKING SUCH STATEMENTS.

Section 15 Interpretation and Enforcement

This Agreement is being executed by the parties following negotiations between them. It shall be construed according to the fair intent of the language as a whole, not for or against any



party. The titles of sections in this Agreement are not to be construed as limitations or definitions but are for identification purposes only.

Section 16 Provider Insurance

It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of the Agreement to create in the public or any member thereof a third party benefit hereunder, or to authorize anyone not a party to this Agreement to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Agreement.

It is highly recommended that Provider confer with their respective insurance companies or brokers to determine if their insurance program complies with the City's Insurance requirements.

Section 17 Severability

If any section or clause of this Agreement is held invalid by a court of competent jurisdiction, or is otherwise invalid under the law, the remainder of this Agreement shall remain in full force and effect.

IT service provider must complete the following tasks upon contract termination:

- Destroy all documented City of Bethel confidential and proprietary information (including network credentials) that reside with the provider (either digital or physical) within 30 days of contract termination.
- If the service provider is using software to provide any of the services requested, the provider shall work with the City of Bethel IT director to schedule the removal of the software from all devices it has been installed on within 30 days of contract termination
- Advise the City of Bethel on what vulnerabilities it might face once their software or service has been terminated (e.g., ransomware protection will no longer exist without the provider's software) within 60 days of contract termination.
- Adhere to any nondisclosure agreements that were agreed upon at the beginning of the contract. City of Bethel confidential and proprietary information will never be shared with any other entity before, during, and after contract termination.
- Work with City of Bethel IT director to determine the logistics of returning onsite hardware that belongs to the provider that may be residing at one of the service locations in Bethel within 90 days of contract termination
- Work with City of Bethel IT director to determine the logistics of returning any hardware that belongs to the City of Bethel that may be residing with the provider within 90 days of contract termination.

Section 18 Understanding



The Provider acknowledges that the Provider has read and understands the terms of this Agreement, has had the opportunity to review the same with counsel of their choice, and is executing this Agreement of their own free will.

Section 18 Notices

Any notice required pertaining to the subject matter of the Agreement shall be personally delivered or mailed by prepaid first-class, registered or certified mail to the following address:

City of Bethel
Attn: IT Director
PO Box 1388
Bethel AK 99559
bfoley@cityofbethel.net

Section 19 Provider's Violations of Tax Obligations

The Provider shall purchase from and maintain in a company or companies lawfully authorized to do business in the State of Alaska as admitted insurers or surplus lines insurers approved by Bethel, such insurance as will protect the Provider from claims set forth below and others, which may arise out of or as a result from the Provider's operations under this contract, whether such operations are by the Provider or by a sub-Provider or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Restrictions, conditions or exclusions contained in the insurance policies shall not reduce the obligations of the Provider under this contract.

- (a) Claims under worker's compensation, employer's liability, disability benefits, and other similar employee benefit acts, which are applicable to the work to be performed under this contract.

Claims for damages because of bodily injury, mental anguish, sickness, disease or death of any person other than the Provider's employees.

Claims for damages insured by usual personal injury liability insurance coverage which are sustained (1) by a person as a result of an offense directly or indirectly related to the employment of such person by the Provider, or (2) by any other person or entity.

Claims for damages, other than to the product supplied, or to the services performed, itself because of damage to or destruction of tangible property, including loss of use resulting therefrom.



Claims for damages because of bodily injury, including death of a person, or damage to property arising out of the ownership, maintenance or use of any motor vehicle.

Liability insurance shall include at a minimum, all major divisions of coverage and be on a commercial general liability form including:

- Premises/Operations Liability
- Products/Completed Operations Liability
- Personal/Advertising Injury Liability
- Fire Damage Liability
- Medical Payments
- Professional (Errors & Omissions) Liability (this may be a separate policy)

(b) The insurance required in II including subsection (a), shall be written for not less than the limits listed in (c) below or those limits required by law, whichever limit is higher. Insurance, whether written on an occurrence, or a claims-made basis, shall be maintained without interruption from the date of commencement of the work to the date of final payment, or termination of any insurance required to be maintained after final payment.

(c) The insurance required in II including subsection (a). shall be written for not less than the following limits:

1. Worker's Compensation Insurance:
Statutory Requirements of the State of Alaska, and
Employer Liability Insurance limits of:
\$500,000.00 each accident.
\$500,000.00 disease each employee.
\$500,000.00 disease policy limit.
2. Commercial General Liability Insurance: Form CG0001 04/13 or equivalent.
\$2,000,000.00 Combined Single Limit of Liability per Occurrence
\$2,000,000.00 Personal/Advertising Injury Limit of Liability per Occurrence
\$2,000,000.00 Annual General Aggregate Limit of Liability
\$2,000,000.00 Annual Products/Completed Operations Aggregate Limit of Liability
\$100,000.00 Fire Damage Limit of Liability Any One Fire
\$5,000.00 Medical Payment Limit Any One Person
3. Commercial Automobile Liability Insurance: Form CA0001 03/10 or equivalent.
\$1,000,000.00 Combined Single Limit of Liability per Accident
For all Owned, Hired, and Non-Owned Vehicles.



4. Professional (Errors & Omissions) Liability Insurance:

\$1,000,000.00 Limit of Liability per Claim.

\$2,000,000.00 Limit of Liability Annual Aggregate for all Claims.

Effective date: Prior to effective date of contract, and for at least 24 months after completion of contract.

- (d) Worker's compensation insurance and employers liability insurance shall be in compliance with the statutory requirements of the State of Alaska, and any other statutory obligation, whether federal or state pertaining to compensation of injured employees.
- (e) The commercial general liability insurance shall name Bethel as an additional insured as respects this contract, but only to the extent of Provider's fault and subject to the limitations of liability contained in this agreement.
- (f) Provider's required insurance is subject to review and adjustment by Bethel.
- (g) Certificates of insurance acceptable to Bethel shall be filed with Bethel prior to the commencement of the beginning of any services by the Provider. These certificates and the insurance policies shall contain a provision that the policy shall not be canceled until prior written notice has been sent to the insured (Provider).

If any of the insurance policies required above are canceled for any reason, the Provider shall provide immediate notice to Bethel of the cancellation and either provide: evidence of replacement or notice of reinstatement. Immediately in this section means within five (5) business days of receipt of cancellation by the Provider.

Failure to maintain these insurance provisions required of the Provider or failure to immediately notify Bethel of cancellation shall be considered a material breach of this contract by the Provider, subject to termination provisions of this contract.

Notice described above shall be by confirmed delivered to the following location:

City of Bethel
Attention: Contracting
PO Box 1388
300 State Highway
Bethel, AK 99559
(907) 545-4847

- A. Any Provider in arrears on a City obligation, including, but not limited to tax, assessment, lease, sale, or rental payments, whether as an individual, or as a



representative of a business, organization, firm, corporation, or partnership, shall not be awarded the Agreement if the delinquency is not cured within ten calendar days of receipt of written notice sent by the City of the delinquency.

- B. This Agreement can be terminated for cause, pursuant to Section 8, if it is determined that a Provider whether the amounts owed are in the name of the Provider as an individual or as a representative of a firm, business, corporation, or partnership, is in arrears of any taxation, lease or rental agreement that is due to the City that is not remedied within 10 calendar days of notification by regular mail.
- C. The City reserves any right it may have to offset amounts owed by an individual, firm, corporation or business for delinquent City taxes, moneys owed on sales, assessments, leases and rental agreements, against any amount owing to the same under an agreement between the City and the same.

CITY OF BETHEL

Alaska Communications



By: Vincenzo S. Corazza

Title: City Manager

Dated: 5-28-2020



By: Bill Bishop

Title: President

Dated: May 27, 2020



Attachments:

- Attachment A – Service Description – ConstantlyOn IT
- Attachment B – ConstantlyOn IT Minimum Security Requirements and Client Agreement



**Service Description
ConstantlyOn IT**

Attachment to Alaska Communications Services Agreement

1. ConstantlyOn IT Service

A. The Services

The Services include Network Monitoring, Vendor Management, Remote Help Desk support, and Proactive Support as described below. Regular business hours are 7:00 AM through 6:00 PM Alaska Time, Monday through Friday, excluding Alaska and federal holidays observed by Alaska Communications. Services are provided for the locations and number of covered users specified in the City of Bethel, Professional Services Agreement for Remote Technical Support Services (agreement). If Customer's network structure or equipment use is beyond that normally encountered for the number of users covered, Alaska Communications reserves the right to upwardly adjust the Monthly Recurring Charge (MRC).

(a) Network Monitoring. Alaska Communications will monitor the customers local area network(s) identified in the agreement. Only those devices that can be monitored via WMI/SNMP will be included. Should that monitoring expose any problems, Alaska Communications will endeavor to promptly address them remotely within regular business hours.

(b) Vendor Management. On behalf of Customer, Alaska Communications will serve as point of contact for Information Technology vendors, that customer has ongoing contracts with, for covered systems under the agreement. Alaska Communications will track vendor work order requests and regularly update the Customer on progress. Customer understands the resolution time needed for issues requiring vendor assistance cannot be controlled by Alaska Communications, Alaska Communications serves only as the local assistance for the vendor. Any effort with vendor outside of regular business hours are in addition to the MRC agreed upon in the agreement. Additionally, extended troubleshooting activities with vendor and work not directly related to problem resolution such as assisting vendor in configuring and using remote access capability or the acquisition, installation and configuration costs of any tools, software or hardware, may be in addition to the MRC agreed upon in the agreement.

(c) Remote Help Desk. Alaska Communications will provide Information Technology support for hardware, systems, and Microsoft operating systems covered by the agreement. Alaska Communications will provide help desk services for end user support questions, and where possible, troubleshoot hardware & software, through remote means.

(d) Proactive Support. Alaska Communications will provide proactive support, such as monitoring backup jobs for completion status, monitoring anti-virus software for issues, and proactive maintenance on covered system such as deploying required feature packs, hot fixes, firmware updates, anti-virus software database updates, etc. Software upgrades are not considered proactive.

(e) Incident and Service Requests. Any need for assistance will be initiated by a covered user by creation of a "Trouble Ticket" to be delivered to Alaska Communications as follows: (i) sent by email to the Remote Help Desk; or (ii) communicated by telephone. Customer may also choose to have a single representative in Customer's organization forward all covered end-user assistance requests to Alaska Communications by the methods listed above. Tickets will be assigned tracking numbers and Alaska Communications will respond to Service Requests in the order received, or if an Incident, based on the



Service Description

ConstantlyOn IT

severity of the incident. See Annex A "Response Times" table for reference on the service's expected

response times based on ticket type and severity.

(f) Onsite Service Call. On occasion, a customer may request an onsite visit for a service call that cannot be easily resolved remotely. Customer and Alaska Communications will determine together if the onsite visit is necessary, and if so, a clear statement of work in the form of a service ticket will be created. Once onsite, the Alaska Communications technician assigned to the service ticket will perform the tasks in the service ticket only. Onsite visits are restricted to the customer business locations that are included in the agreement. Alaska Communications reserves the right to dispatch technicians to solve any trouble ticket or service request.

(g) Onsite Service Call – No Trouble Found. In the event that Alaska Communications furnishes a technician onsite, in response to Customer's service request, and Customer is not able to identify or reproduce the problem at issue, the Customer agrees to pay Alaska Communications for its services at Alaska Communications' standard labor rates at the time of the service.

(h) Hardware, Systems, and Microsoft Operating System Software Support. Throughout the entire term of the agreement, all software supported must be genuine, fully and properly licensed, and vendor supported. Any hardware, system, or software failing to meet the above conditions will not be supported under Services described in this document and, if Alaska Communications determines that the failure substantially impairs its ability to provide services hereunder, Alaska Communications may terminate the agreement immediately. Alaska Communications acknowledges that in certain rare cases hardware, systems and operating systems not under warranty or support must remain in use based on vendor and/or business requirements. In those cases, any support provided by Alaska Communications will not be subject to the Response and Resolution Times targets in Annex A. Any additional costs associated with this support may be in addition to the MRC agreed to in the agreement.

(i) Breach, Viruses and Infection Remediation Efforts. Although it is impossible to prevent all security incidents, good security practices can reduce the likelihood of an incident and its severity. Alaska Communications may suggest security steps a customer may take to reduce this likelihood. It is strongly recommended to consider these suggestions as Alaska Communications provides no included breach or virus infection remediation with this service, rather the focus is on prevention. In the event of a breach or virus infection, Alaska Communications may, at its discretion, provide some modest recovery efforts up to 1 times MRC for ConstantlyOn IT services covered by the agreement, such as restoring lost files from a known good back up, but in no case will in-depth recovery and/or forensics be included in the monthly recurring charge.

B. Conditions to Provision of ConstantlyOn IT Services

Customer will ensure that its network, systems and hardware meet the conditions outlined in Section 1 A (h) above and additionally comply with each of the following requirements:

(a) Customer-provided anti-virus products (used in lieu of the standard Alaska Communications included product in this Service) must be a currently licensed, updated and vendor-supported server-based antivirus solution protecting all servers, desktops, notebooks/laptops, and email.



(b) Customer's environment must have a currently licensed, vendor-supported server-based, cloud based, or dedicated appliance- based backup solution that can be monitored and sends notifications regarding job failures and successes. The selection of data to be backed up, retention requirements and recovery time objectives will be determined by a Customer-defined selection list created with the assistance of Alaska Communications.

(c) Customer's environment must have a licensed, vendor-supported, enterprise class hardware firewall between the internal network and the internet. As each business may have its own unique inbound/outbound security requirements, Alaska Communications expects the customer to participate in the definition of the firewall security policies applied. Alaska Communications' role is to advise only, to assist in applying the defined policies to the firewall, and to assist in revising those policies as customer needs require.

(d) Customer should have a static IP address assigned to the Internet facing interface on the firewall to permit or allow Virtual Private Network (VPN) access for required remote support capability; This is recommended for each client location. Without this static IP address, Alaska Communications ability to perform remote support is severely impacted and Alaska Communications would not expect to be able to achieve the resolution times detailed in Annex A.

(e) The physical environment where Customer's servers and/or networking hardware are installed should be compatible with the manufacturer's recommendations for proper ventilation, cooling and power. In addition, proper earthquake and flood damage mitigation mechanisms should be in place. The environment must also provide ConstantlyOn IT staff the ability to work uninhibited by space restrictions.

(f) Customer must provide administrative access to all systems requiring support covered by the agreement, whether it is an on-premise system, or in the cloud. In cases where this administrative access requires an account that may require costs to acquire, customer is responsible for those costs.

(g) Customer will notify Alaska Communications of all instances and locations containing Personal Healthcare Information ("PHI"), electronic Personal Healthcare Information ("ePHI"), Payment Card Industry Data Security Standard information ("PCI-DSS"), Personally-Identifiable Information ("PII") and any other protected information. This information is used by Alaska Communications solely to determine where data may be subject to increased security scrutiny and protection.

It is recommended that customer maintain at least one spare PC, either desktop or laptop or both. If a covered employee has a complete PC failure, without a spare, the time to return that person to full working order will be dictated by the speed at which a replacement can be acquired, a length of time Alaska Communications has no control over.

C. Exclusions from ConstantlyOn IT Services

The Services provided by Alaska Communications to Customer do not include:

(a) After the start of the service, any equipment, hardware, parts and software not disclosed to Alaska Communications during the onboarding process;



(b) The costs to acquire, configure and install new or replacement equipment, hardware or parts, licensing or software and any associated delivery or shipping charges of any kind;

(c) The costs to acquire technology vendor support contracts or warranties to support customer equipment and software;

(d) Equipment, hardware, parts and software not covered by any vendor or manufacturer warranties or support agreement;

(e) Wiping, re-imaging, and rebuilding of existing PC's for redistribution. This is considered a new or replacement PC under the terms of the agreement and costs to complete will be in addition to the MRC agreed to in the agreement.

(f) Any hardware, software, or systems whose intended purpose is for in home use.

(g) Any hardware, software, or systems whose failure or defect was caused by improper use;

(h) All service and repairs made necessary by the alteration or modification of equipment, other than that authorized by Alaska Communications, including alterations, software installations or modifications of equipment made by Customer's employees or anyone other than Alaska Communications;

(i) All maintenance of applications software packages, whether acquired from Alaska Communications or any other source;

(j) All programming (modification of software code) and program (software) maintenance, unless already covered;

(k) Training of any kind;

(l) If customer is asked to perform an audit or self-audit on regulation compliance, Alaska Communications will assist where possible solely by providing information on covered systems under the agreement as it relates to Information Technology. Alaska Communications will not provide data on compliance in other areas such as but not limited to, policies or employee training. Additionally, the cost associated with Alaska Communications assisting in this effort will be in addition to the MRC;

D. Additional Covered Users and/or Business Locations

If Customer wishes to add additional covered users and/or physical business locations to those currently covered under the current agreement, Alaska Communications must be notified of the additions and obtain Alaska Communications' prior written consent. Any addition of covered users and/or business locations not originally included in the current agreement may require an adjustment to Customer's MRC for ConstantlyOn IT services. Once per year, Alaska Communications and customer will perform a true up to determine if any users or locations currently supported, or needing support, are not currently identified as covered by the current agreement. Any additions may result in an adjustment to Customer's MRC for ConstantlyOn IT services covered by the agreement. Any changes will be captured in an Addendum document to the agreement currently in force.



Support Tiers and Response/Resolution Times

Alaska Communications Support Tier levels are as follows:

Support Tier	Description
Tier 1 Support	All support incidents begin in Tier 1, where the initial trouble ticket is created, the issue is identified, and clearly documented, and basic hardware/software troubleshooting is initiated.
Tier 2 Support	All support incidents that cannot be resolved with Tier 1 Support are escalated to Tier 2, where more complex support on hardware/software issues can be provided by more experienced Engineers.
Tier 3 Support	Support Incidents that cannot be resolved by Tier 2 Support are escalated to Tier 3, where support is provided by the most qualified and experienced Engineers who have the ability to collaborate with 3 rd Party (Vendor) Support Engineers to resolve the most complex issues.

Alaska Communications' target response and resolution times, during regular business hours, for each priority level are as follows:

Trouble	Priority	Response time	Resolution time*
Service not available (All users affected, functions, and systems unavailable causing significant business impact).	1	Within 1 Hour	Reasonable Efforts to resolve within 2 hours
Significant degradation of service (large number of users or business critical functions affected, able to work with exceptions).	2	Within 2 Hours	Reasonable Efforts to resolve within 4 hours
Small service degradation (Business process can continue with effort, one or a few users affected).	3	Within 4 Hours	Reasonable Efforts to resolve within 16 hours
Service Requests (typical service requests include asks from a user for information, advice, a standard change, or access to a service).	4	Within 8 Hours	Resolution times vary as they are based on the nature of the request and amount of effort to resolve.

*Resolution times do not include time waiting for assistance from vendors on affected systems and/or responses for additional information or problem testing by customer that may be required by Alaska Communications.



Annex B

Service Rates

Labor	Rate	*All times noted are Alaska Standard Time and exclude the observance of the following holidays: New Year's Day Memorial Day Independence Day Labor Day Thanksgiving Friday after Thanksgiving Christmas **One hour minimum, thereafter, Service is billed in 30-minute increments.
Remote Management/Help Desk 7am-6pm M-F*	INCLUDED	
Ongoing Network Alerting (active response is limited to 7am-6pm M-F*)	INCLUDED	
Onsite ConstantlyOn IT Labor (Only for hardware and software issues affecting properly supported and warranted systems. 8am-5pm M-F*)	INCLUDED	
No Trouble Found Fee**	\$150/hr.	
Afterhours Support**	\$225/hr.	
Non ConstantlyOn IT Service and Project Labor	\$150/hr	
Travel Labor (Any potential required travel labor will be determined based on location of service)	\$75/hr.	



Annex C

Deployment Schedule

This exhibit is intended to be a brief overview of a typical deployment schedule for implementation of the services defined within this contract and is to be further defined and negotiated by both parties AFTER contract execution.

Task	Responsible Party
Alaska Communications receives Contract	Alaska Communications and Customer
Customer can utilize Alaska Communications IT services until the on-boarding process is finalized at our standard rates. Services provided before onboarding is complete could be limited in our abilities to provide support as defined in this document, as all service requirements are not in place.	Customer
Information Technology Assessment Starts	Alaska Communications Engineer
Information Technology Assessment Completion	Alaska Communications Engineer
Internal (peer-peer) Alaska Communications meeting to review Information Technology Assessment	Alaska Communications Engineer and Staff
Alaska Communications Meeting with Customer to introduce Technical Account manager and review of Information Technology Assessment to include identification of items of a critical nature and remediation recommendations.	Alaska Communications Staff and Customer
Alaska Communications finalizes On-Boarding activities	Alaska Communications Engineer
Customer signs LOA's for Vendor Management provides authorized employees list for billable service requestor and provides employee directory & priority employee listing.	Customer
Full ConstantlyOn IT support starts	Alaska Communications and Customer

*



Annex D

Covered Features

This exhibit is intended to be a reference of included and excluded support features of ConstantlyOn IT. This list is for reference only and is not to be considered an absolute representation of all covered or excluded features.

Feature		Included	Excluded
Remote Support		X	
Technical Account Manager		X	
Compute Support			
	Desktops	X	
	Laptops	X	
	PC Peripherals	X	
	Printers/Scanners	X	
	Physical Servers	X	
	Virtualized Servers	X	
	Storage Arrays	X	
Proactive Maintenance			
	Service/Feature Packs	X	
	Hot Fixes/Patching	X	
	Firmware Updates	X	
Networking			
	Wired/Wireless Routers/Access Points	X	
	Hotspots/Guest Wireless		X
	Network Printing	X	
	Switches	X	
	Firewalls	X	
	Managed Routers	X	
Anti-Virus/Malware Mitigation			
	Anti-Virus Software Provided	X	
	Proactive AV Software Updating	X	
	Modest Reactive Virus/Malware removal – See Section 1 A (i) for details	X	
	Large Scale Incident Recovery/Forensics		X



Service Description
ConstantlyOn IT

Data Backup Systems Support			
	Monitoring Backup Process	X	
	Perform Simple File Restore Operations*	X	
	Disaster Recovery Assistance		X
Miscellaneous Equipment			
	Tablets and Mobile Devices		X
	Business Audio-Visual Equipment		X
	Point of Sales Equipment/Systems		X
	Telephone Equipment/Systems		X
Email Client Support			
	Current Vendor Supported Clients	X	
Email Server Support			
	Microsoft Exchange	X	
	Microsoft 365	X	
Internet Tools			
	Social Media Applications		X
	Web Browsers	X	
Operating System Support*			
	Windows Desktop Operating Systems	X	
	Microsoft Server Operating Systems	X	
	*Support typically is restricted to Operating Systems supported by Microsoft		
Microsoft 365 Tenant/Administration Support**		X	
Microsoft Azure Tenant/Administration Support**		X	
Non-Microsoft Cloud based Applications Administration Support**		X	
Server Based Application Support (e.g. SQL, IIS)		X	
Other Apps e.g. Adobe			X

* Simple File restores are define as file/folder data that can easily be restored via the in-place backup system using the data in the backup selection list. Complete disaster recovery or the need to recover an entire system just to recover a simple file/folder are excluded.

**Administration of cloud-based services include routine tasks such as adding new users, helping with passwords, assigning application licenses etc. Advanced administration such as configuring and maintaining SharePoint are excluded.



ConstantlyOn IT Minimum Security Requirements

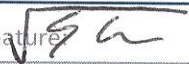
Impacts from cyberattacks are both far reaching and costly with damages that can include; data extortion/ransomware, business reputation, and trust, as well as customer loyalty. Alaska Communications is committed to working with our ConstantlyOn IT clients to create an IT environment with layers of security to provide protection for your business resources and data. This approach combines multiple mitigating security controls such as:

- an anti-virus application
- a firewall
- an anti-spam application
- email encryption
- web filtering
- back-up solution with offsite replication
- local area network monitoring and alerting
- guest wireless network segregated from production network
- authorized personnel activity accounting (network administrative accounts)
- end-user awareness training
- end-user general policy management of password requirements, account lockouts and not using shared accounts
- upgrade, replacement or retirement of non-supported legacy systems
- physical environment security

This list is not all inclusive, and your organization may have additional security controls based on regulatory compliance requirements specific to your business. Your organization may utilize some or all these security tools and policies. (See back)

It is impossible to prevent all security incidents. Good security practices can reduce the likelihood of an incident and its severity. Alaska Communications' Managed IT services includes an extra annual allotment of one time your monthly ConstantlyOn IT charge to assist with remediating security incidents' regardless of the root cause of the incident. If at the time of an incident, you are in full compliance with the security recommendations provided by Alaska Communications on page two then this allotment will be increased to up to two times your ConstantlyOn IT monthly charges. Compliance with these requirements may involve a change to your network or network access policies, which will be coordinated in advance.

Customer

Signature: Print Name: VINCENZO S. CORAZZABusiness Name: CITY OF BETHELDate: 5-28-2020

Alaska Communications

Signature: _____

Print Name: _____

Business Name: Alaska Communications

Date: _____



ConstantlyOn IT Minimum Security Requirements and Client Agreement

Please review the table below and indicate your acknowledgment with initials.

#	Minimum Requirement	What this means to you	Risk of non-compliance	COIT
1	Passwords must be a minimum of 8 characters; contain standard complexity, and changed every 90 days.	User must maintain complex passwords which are changed when prompted	Attackers can use dictionary and brute force attacks to guess your password	✓
2	Accounts locked out for 24 hours after 5 invalid logon attempts to systems and Microsoft 365	User must call COIT helpdesk to unlock account	Attackers can use dictionary and brute force attacks to guess your password	✓
3	Firewall/UTM policy to block all unsecured inbound connections	Transparent to user	Reduces attack surface of system(s) exposed to potential attackers	✓
4	Wireless networks to be configured with WPA2 or stronger encryption; guest WLAN access must be segregated from production network	Wireless networks must use transport encryption stronger than WEP and WPA to prevent unauthorized use	Minimizes attacker ability to use brute-force techniques to gain unauthorized wireless access	✓
5	Each user must use his/her account; no sharing or group accounts permitted.	Each user has his or her own account	Allows COIT technicians to investigate security incidents	✓
6	Non-supported legacy systems must be upgraded, migrated, unsupported, or retired.	Any computers running, for example, Windows 7, must be decommissioned, upgraded to Windows 10, or migrated to newer hardware	Protects customer by ensuring that attackers cannot exploit old software that cannot be patched	✓

Please select one of the following:

☐ I agree to meet the above minimum security requirements to the best of my ability with the understanding that I can request assistance in any of these areas from the COIT helpdesk at any time.

Initial: _____

☒ I do not agree to the following minimum-security requirements (list by number):

Initial: VSC Number: 5

Initial: _____ Number: _____

Initial: _____ Number: _____

Initial: _____ Number: _____

Initial: _____ Number: _____

Initial: _____ Number: _____



Signature: Bill Bishop
Bill Bishop (May 21, 2020 16:21 AKDT)

Email: william.bishop@acsalaska.com

Title: President

Company: Alaska Communications

We have prepared a quote for you

City of Bethel - Amendment to COIT Agreement to Include "On-Site Staff Augmentation"

Quote # 033014 Version 1



Prepared for:
City of Bethel
Bill Arnold
warnold@cityofbethel.com

Prepared by:
Stacey Simpson
Stacey.Simpson@acsalaska.com

Presented by:
David Murphy
David.Murphy@acsalaska.com



Statement of Work

This quote is being provided to the City of Bethel to amend the city's Managed IT Services agreement with Alaska Communications.

This amendment is being provided to facilitate the addition of Outsourced On-Site Staff Augmentation for Information Technology Services. Alaska Communications will provide a System Administrator Professional to work onsite in the City of Bethel one week a month for 12 months. Alaska Communications will attempt to utilize the same technician each month but reserves the right to change if necessary.

This provided resource will facilitate on-site support services to the City of Bethel for the below departments:

- Police Department
- City Sub Water Plant
- Fire Department
- YK Fitness Center
- Bethel Heights Water Plant
- Court House
- Transit Office
- Public Works
- Utility Maintenance
- Landfill
- Boat Harbor
- Post Office
- City Hall

Alaska Communications and the City of Bethel will schedule the technician site visit at least one month in advance of the visit. The scheduling will need to account for holidays and technician time off to best serve the City's needs and unnecessary OT charges being accrued due to holidays, etc. If the OT hours for any site visit are going to exceed the 10 hours included in this agreement, the City of Bethel will be notified prior to any extra hours being worked so the City of Bethel may provide written approval to perform the work. All OT hours will be billed at \$240.00 / hour.

The provided System Administrator will work in conjunction with the Alaska Communications Constantly OnIT Remote Help Desk to facilitate IT Services for the City of Bethel.

The provided System Administrator while onsite will provide the following services:

- Creation of Information Technology Tickets for the Constantly On IT Help Desk
 - Issue documentation and resolution steps

- Responding to inquiries from COB End Users
 - Conducting End User Support and Desktop/ End User Device Service Requests
- Assisting with end point (Desktop) application software installations and configurations
- Identifying and escalating unresolved issues to higher support tiers
- Work Station Life Cycle Management (Workstation Provisioning and Decommissioning)
- Providing onsite smart hand support for Information Technology Projects.
- Facilitating inspection of On premises Information Technology Infrastructure.
- Other IT needs as applicable to the City's needs and within the technician's ability complete.

This service will be provided to City of Bethel as a supplemental service to enhance Information Technology Managed IT Services provided to the city under their Constantly OnIT Agreement with Alaska Communications. The provided Support Professional will work in conjunction with the current help desk and will be leveraged accordingly.

The City of Bethel will make all pertinent systems available to the technician as required to perform required work.

City of Bethel will provide lodging and a vehicle.

- **Lodging:**
 - Studio apartment with a private bathroom/shower & kitchenette (small fridge, microwave, coffee maker & induction cooktop).
 - if kitchen necessities are missing the City will provide/replace.
 - Small table with two chairs and a dresser.
 - There are 9 units in the building with laundry room downstairs.
 - The building and apartment are both secured with a key code.
- **Tenant Expectations:**
 - Technician will take out the garbage prior to departure.
 - Clean up & at a minimum strip the bedding so the City can have the unit cleaned.

Storage:

- Technician will be able to store personal supplies (i.e. toiletries, etc) in the IT office when not in Bethel so easily retrievable.

Travel: Technician to be onsite 1 week per month for 12 months. Travel Sunday night / return Friday night. Please note that travel expenses can increase with weather or flight delays.

Agreement

Description	Qty	Recurring
Professional Outsource Agreement (Regular Hours - Fixed)	40	\$170.00
Professional Outsource Agreement (After Hours Estimated - Bill Actuals)	10	\$240.00
Travel Costs - Airfare (Round-Trip)	1	\$290.00
Travel Costs - Tech Per Diem (Meals x 6 days)	6	\$81.00
Monthly - 12 Subtotal:		\$9,976.00

City of Bethel - Amendment to COIT Agreement to Include "On-Site Staff Augmentation"

Prepared by:

**Alaska Communications Services,
Inc.**

Stacey Simpson
 9075647809
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Prepared for:

City of Bethel

300 State Highway
 Bethel, AK 99559
 Bill Arnold
 (907) 543-2047
 warnold@cityofbethel.com

Quote Information:

Quote #: 033014

Version: 1
 Delivery Date: 06/18/2024
 Expiration Date: 07/31/2024

Monthly - 12 Expenses Summary

Description	Amount
Agreement	\$9,976.00
Monthly - 12 Total:	\$9,976.00

Alaska Communications generates billing and/or recognizes revenue for work performed on a monthly basis. This may consist of material delivered and accepted by the customer for storage at the customers location or if agreed upon at an Alaska Communications facility, non-tangible software licenses or subscriptions, and professional services performed to date. Purchase orders under this quote are subject to Alaska Communications' Terms and Conditions at www.alaskacommunications.com/businesstermsandconditions . This quote expressly limits acceptance to the terms herein

Amendment No. 1 Professional Services Agreement Between the City of Bethel, Alaska, and
Alaska Communications for Remote Technical Support Services

AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT

Pursuant to Section 09, Modifications, of the Professional Services Agreement (“Agreement”) by and between the City of Bethel (“City”) and Alaska Communications (“Contractor”) dated May 28, 2020, the Agreement is hereby modified as follows:

Section 03, Scope of Services, and Section 5, Compensation, will include the services and pricing referenced in Attachment C, City of Bethel -Amendment to COIT Agreement to Include “On-Site Staff Augmentation” Quote # 033014 Version 1.

Except as amended hereby, the Agreement shall otherwise remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment this _____ day of _____, 2024

City of Bethel:

By: _____

William Arnold

Acting City Manager

Contractor, Brilliant Media Strategies

By: _____

Debra Reinwand

President/CEO

City of Bethel Action Memorandum

Action memorandum No.	AM 24-XX		
Date action introduced:	July 9, 2024	Introduced by:	Port Commission
Date action taken:		Approved	Denied
Confirmed by:			

ActionTitle: Authorizing The City of Bethel Administration to Sign Statement of Non-Objection for the KNIK Dock Project

Attachment(s): (1) Letter of Non-Objection to KNIK Dock Project (2) KNIK Dock Project Location Map, Site Plan, and Navigation Plan (3) PND Engineers INC. Project Summary. (4) 2002 Signed PCA Amendment No. 1. (4) Arial Photos (5) Project Cooperation Agreement (6) Tie-In Area (7) USACE AK District, Bethel Bank Stabilization Overview 2019 (8) USACE AK District, Bethel Bank Stabilization Map Feb 2001

Amount of fiscal impact:	Source	Account information:
N/A	N/A	N/A
Route to Department/Individual	Initials	Remarks
Administration	<i>N/A</i>	This project holds no fiscal impact to the City of Bethel.

Summary Statement:

On behalf of KNIK, PND Engineers, INC. are requesting a letter of non-objection from the City of Bethel. The non-objection letter, a requirement of the U.S. Army Corps of Engineers (USACE) would, permit KNIK to enhance erosion projection on the riverbanks of Bethel on the KNIK property which is adjacent to the seawall the City is responsible for maintaining.

Per the Operating Agreement with the USACE from 1994, the City shares certain responsibilities for maintenance and repairs for the Bank Stabilization Project(seawall), as the non-federal sponsor of the project. Because the City is responsible for the maintenance the City must document awareness of proposed projects that interact or influence the function of the seawall.

The proposed plan is to overlap the existing rock rip-rap at the downriver end past the Petro Port with approximately 150 feet of rock rip-rap. This addition extends the bank protection through the downriver side of the KNIK dock project without gaps.

The City will not be responsible for any costs for repair and maintenance that the KNIK Dock Project. Further the project will continue to be evaluated by USACE, the agency responsible for ensuring adequate care for the entire seawall.

AMENDMENT NO. 1
TO
PROJECT COOPERATION AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE CITY OF BETHEL
FOR CONSTRUCTION OF THE
BETHEL BANK STABILIZATION PROJECT

THIS AMENDMENT NO. 1 is entered into this 27th day of December, 2002, by and between the Department of the Army (hereinafter the "Government"), represented by the District Engineer for Alaska District and the City of Bethel (hereinafter the "Local Sponsor"), represented by its Mayor.

WITNESSETH, THAT:

WHEREAS, the Government and the Local Sponsor entered into a Project Cooperation Agreement on March 3, 1994 (hereinafter the "Agreement") for construction of the Bethel Bank Stabilization Project (hereinafter the "Project");

WHEREAS, construction of the Project was completed in the fall of 1997;

WHEREAS, the Energy and Water Development Appropriations Act of 2001, as enacted by Section 1 (a) (2) of Public Law 106-377, and House Conference Report No. 106-988, page 211, authorized and directed the Secretary of the Army, acting through the Chief of Engineers, to extend the existing Bethel Bank Stabilization project in Alaska an additional 1,200 feet upstream;

WHEREAS, the extension of the Project has been evaluated in a Letter Report entitled "Bethel Emergency Bank Stabilization: Brown's Slough to Small Boat Harbor Entrance, Bethel, Alaska" dated December 2001, approved by Pacific Ocean Division on December 20, 2001 (hereinafter the "Letter Report");

WHEREAS, the Government and the Local Sponsor desire to enter into an Amendment to the Agreement for construction, operation, and maintenance of the Project as modified;

NOW, THEREFORE, the Government and the Local Sponsor agree to amend the Agreement as follows:

1. Article I.a. of the Agreement is amended to read as follows:

"a. The term "Project" shall mean the 9,200 feet of river bank protection on the right bank of the Kuskokwim River at Bethel, Alaska, as described in the Bank Stabilization, Bethel, Alaska General Design Memorandum, dated May 1988, and approved by North

Pacific Division on June 28, 1988 as modified by the Limited Reevaluation Report, dated October 1993, and approved by the Office of the Assistant Secretary, Civil Works on December 23, 1993 as further modified by the Letter Report, dated December 2001, and approved by Pacific Ocean Division on December 20, 2001.”

2. Amend Article I.c. of the Agreement to delete the term “Contracting Officer” and replace it with “District Engineer.” Replace the term “Contracting Officer” with “District Engineer” in each and every location in the Agreement where it appears.

3. Article II.f. of the Agreement is amended to read as follows:

“f. As of the effective date of this Agreement, \$18,768,000 of Federal funds have been appropriated for the Project. This amount is less than the Federal share of the projected total project costs and the Government makes no commitment to seek additional Federal funds for the Project. Notwithstanding any other provision of this Agreement, the Government’s financial participation in the Project shall not exceed the total amount of Federal funds that heretofore have been appropriated and hereafter may be appropriated or otherwise made available for the Project. In the event that funds sufficient to meet the Government’s share of funds required to continue construction of the Project in the then-current or upcoming fiscal year are not made available for the Project, the Government shall notify the Local Sponsor of the insufficiency of funds and the parties, within the Federal and non-Federal funds available for the Project, shall suspend construction or terminate this Agreement in accordance with Article XVI.b. of this Agreement. To provide for this eventuality, the Government may reserve a percentage of the total Federal funds available for the Project and an equal percentage of the total funds contributed by the Local Sponsor pursuant to paragraph c. of this Article as a contingency to pay the costs of termination, including any costs of contract claims and contract modifications.”

4. The following is made part of the Agreement by adding a new Article IV.b.3:

“3. Solely for contracts awarded and executed after the effective date of this Amendment crediting for relocations performed within the Project boundaries is subject to satisfactory compliance with applicable federal labor laws covering non-Federal construction, including, but not limited to the Davis-Bacon Act (40 USC 276a et seq), the Contract Work Hours and Safety Standards Act (40 USC 327 et seq) and the Copeland Anti-Kickback Act (40 USC 276c). Crediting may be withheld, in whole or in part, as a result of the Local Sponsor’s failure to comply with its obligations under these laws.”

5. Article V of the Agreement is amended to read as follows:

“ARTICLE V - PROJECT COORDINATION TEAM

a. To provide for consistent and effective communication, the Local Sponsor and the Government, not later than 30 days after the effective date of this Agreement, shall appoint named senior representatives to a Project Coordination Team. Thereafter, the Project Coordination Team shall meet regularly until the end of the period of construction. The

Government's Project Manager and a counterpart named by the Local Sponsor shall co-chair the Project Coordination Team.

b. The Government's Project Manager and the Local Sponsor's counterpart shall keep the Project Coordination Team informed of the progress of construction and of significant pending issues and actions, and shall seek the views of the Project Coordination Team on matters that the Project Coordination Team generally oversees.

c. Until the end of the period of construction, the Project Coordination Team shall generally oversee the Project, including issues related to design; plans and specifications; scheduling; real property and relocation requirements; real property acquisition; contract awards and modifications; contract costs; the application of and compliance with the Davis-Bacon Act, Contract Work Hours and Safety Standards Act and the Copeland Anti-Kickback Act for relocations; the Government's cost projections; final inspection of the entire Project or functional portions of the Project; preparation of the proposed OMRR&R Manual; anticipated requirements and needed capabilities for performance of operation, maintenance, repair, replacement, and rehabilitation of the Project; and other related matters. This oversight shall be consistent with a project management plan developed by the Government after consultation with the Local Sponsor.

d. The Project Coordination Team may make recommendations that it deems warranted to the District Engineer on matters that the Project Coordination Team generally oversees, including suggestions to avoid potential sources of dispute. The Government in good faith shall consider the recommendations of the Project Coordination Team. The Government, having the legal authority and responsibility for construction of the Project, has the discretion to accept, reject, or modify the Project Coordination Team's recommendations.

e. The costs of participation in the Project Coordination Team shall be included in total project costs and cost shared in accordance with the provisions of this Agreement."

6. Article VI.a. of the Agreement is amended to read as follows:

"a. The Local Sponsor shall provide, during the period of construction, the cash payments required under Article II of the Agreement. The total project costs are estimated to be \$28,981,000 and the Local Sponsor's share of the total project costs is currently estimated to be \$7,245,000. In order to meet the Local Sponsor's share, the Local Sponsor must provide a cash contribution currently estimated to be \$770,000. The dollar amounts set forth in this Article are based upon the Government's best estimates which reflect projections of costs, price level changes, and anticipated inflation. Such cost estimates are subject to adjustments based upon cost actually incurred and are not to be construed as the total financial responsibilities of the Government and the Local Sponsor."

7. The following is made part of the Agreement by adding it to the end of Article XII:

"The Local Sponsor is also required to comply with all applicable federal labor standards requirements including, but not limited to the Davis-Bacon Act (40 USC 276a et seq), the

Contract Work Hours and Safety Standards Act (40 USC 327 et seq) and the Copeland Anti-Kickback Act (40 USC 276c)."

8. Article XVI.c. of the Agreement is deleted in its entirety.

9. Article XX of the Agreement is amended to read as follows:

"The Local Sponsor has reviewed the provisions set forth in Section 902 of Public Law 99-662, as amended, and understands that Section 902 establishes the maximum amount of total project costs for the Bethel Bank Stabilization Project. Notwithstanding any other provision of this Agreement, the Government shall not make a new Project financial obligation, make a Project expenditure, or afford credit toward total project costs for the value of any contribution provided by the Local Sponsor, if such obligation, expenditure, or credit would result in total project costs exceeding this maximum amount, unless otherwise authorized by law. On the effective date of this Agreement, this maximum amount is estimated to be \$32,191,000, as calculated in accordance with ER 1105-2-100 using October 1, 2002 price levels and allowances for projected future inflation. The Government shall adjust this maximum amount in accordance with Section 902."

10. The following is made part of the agreement by adding a new Article XXI:

"ARTICLE XXI - HISTORIC PRESERVATION

a. The costs of identification, survey and evaluation of historic properties shall be included in total project costs and cost shared in accordance with the provisions of this Agreement.

b. As specified in Section 7(a) of Public Law 93-291 (16 U.S.C. Section 469c(a)), the costs of mitigation and data recovery activities associated with historic preservation shall be borne entirely by the Government and shall not be included in total project costs, up to the statutory limit of one percent of the total amount authorized to be appropriated for the Project.

c. The Government shall not incur costs for mitigation and data recovery that exceed the statutory one percent limit specified in paragraph b. of this Article unless and until the Assistant Secretary of the Army (Civil Works) has waived that limit in accordance with Section 208(3) of Public Law 96-515 (16 U.S.C. Section 469c-2(3)). Any costs of mitigation and data recovery that exceed the one percent limit shall be included in total project costs and shared in accordance with the provisions of this Agreement."

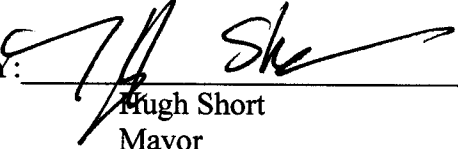
11. All other terms and conditions of the Agreement remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment No. 1 which shall become effective upon the date it is signed by the Principal Deputy Assistant Secretary of the Army (Civil Works).

DEPARTMENT OF THE ARMY

CITY OF BETHEL

BY: 
Steven T. Perrenot
Colonel, Corps of Engineers
District Engineer

BY: 
Hugh Short
Mayor

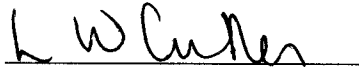
DATE: 12-27-02

DATE: 12-23-02

CERTIFICATE OF AUTHORITY

I, Louisiana W. Cutler, do hereby certify that I am a partner with Preston, Gates & Ellis LLP, which has a contract with the City of Bethel to perform legal services; that the City of Bethel is a legally constituted public body with full authority and legal capability to perform the terms of Amendment No. 1, between the Department of the Army and the City of Bethel in connection with the Bethel Bank Stabilization Project, and to pay damages in accordance with the terms of Amendment No. 1, if necessary, in the event of the failure to perform, as required by Section 221 of Public Law 91-611 (42 U.S.C. Section 1962d-5b), and that the person who has executed Amendment No. 1 on behalf of the City of Bethel has acted within his statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 23rd day of January, 2002.



Louisiana W. Cutler
Preston Gates & Ellis LLP

CERTIFICATION REGARDING LOBBYING

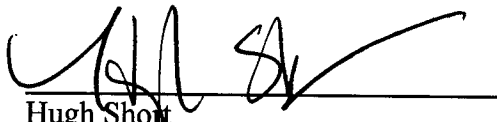
The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.



Hugh Short
Mayor

DATE: 12-23-2



**CROWLEY
FUEL
DOCK**

**EXISTING
RIPRAP**

KUSKOKWIM RIVER

**KNIK CONSTRUCTION
YARD**

POA-2014-00064



**CROWLEY FUEL
DOCK**

EXISTING RIPRAP

EXISTING RIPRAP

**PHOTO 1.
OBLIQUE AERIAL PHOTO.
8:00AM, JULY 8, 2022.
TIDE AT 0 FT. MLLW**

POA-2014-00064



**EXISTING
RIPRAP**

**CROWLEY
FUEL
DOCK**

**EXISTING
RIPRAP**

**PHOTO 2.
OBLIQUE AERIAL PHOTO.
8:00AM, JULY 8, 2022
TIDE AT 0 FT MLLW.**

POA-2014-00064.

An oblique aerial photograph showing a riverbank. The river is on the left, with a sandy and rocky shoreline. A dense line of green vegetation runs along the bank. Behind the vegetation, there are some buildings and a construction site with cranes in the distance. The sky is overcast.

**EXISTING
RIPRAP**

**EXISTING
RIPRAP**

**PHOTO 3.
OBLIQUE AERIAL PHOTO.
8:00AM, JULY 8, 2022
TIDE AT 0 FT. MLLW.**

PROJECT COOPERATION AGREEMENT
BETWEEN
THE DEPARTMENT OF THE ARMY
AND
THE CITY OF BETHEL, ALASKA
FOR THE CONSTRUCTION OF THE
BETHEL BANK STABILIZATION PROJECT

THIS AGREEMENT is entered into this 3rd day of March, 1994, by and between the DEPARTMENT OF THE ARMY (hereinafter referred to as the "Government"), acting by and through the Assistant Secretary of the Army (Civil Works), and the City of Bethel (hereinafter referred to as the "Local Sponsor"), acting by and through Donna J. Chris, Mayor.

WITNESSETH, THAT:

WHEREAS, the Bethel Bank Stabilization Project, at Bethel, Alaska, was authorized by the Water Resources Development Act of 1986, Public Law 99-662, Title VI, Section 601(a);

WHEREAS, the Government and the Local Sponsor desire to enter into a Project Cooperation Agreement for construction of Bethel Bank Stabilization Project at Bethel Alaska (hereinafter referred to as the "Project" and defined in Article I.a. of this Agreement);

WHEREAS, the Energy and Water Development Appropriations Acts of 1992 and 1993 (Public Laws 102-104 and 102-377) included an appropriation of \$7,000,000 and directed that construction of the Bethel Bank Stabilization Project be undertaken;

WHEREAS, Section 108 of the Water Resource Development Act of 1986, Public Law 99-662, as amended, directs that the Federal share of any cost of a project authorized by that Act for which cost a Federal share is not established in title I of that Act, shall be the share of such cost otherwise provided by law;

WHEREAS, Section 601(a) of the Water Resources Development Act of 1986, Public Law 99-662, as amended, specifies the cost-sharing for the Project at 75 percent Federal and 25 percent non-Federal;

WHEREAS, Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended, provides that the construction of any water resources project by the Secretary of the Army shall not be commenced until each non-Federal interest has entered into a written agreement to furnish its required cooperation for the project;

WHEREAS, the Government and the Local Sponsor have the legal authority and capability to perform as hereinafter set forth and intend to cooperate in the cost-sharing and financing of the construction of the Project in accordance with the terms of this Agreement;

NOW, THEREFORE, the Government and the Local Sponsor agree as follows:

ARTICLE I - DEFINITIONS AND GENERAL PROVISIONS

For purposes of this Agreement:

a. The term "Project" shall mean the 6,500 feet of river bank protection on the right bank of the Kuskokwim River at Bethel, Alaska, as described in the GDM dated May 1988 entitled "Bank Stabilization, Bethel, Alaska," and the Limited Reevaluation Report dated October 1993.

b. The term "total project costs" shall mean all costs incurred by the Local Sponsor and the Government directly related to construction of the Project. Such costs shall include, but not necessarily be limited to: all continuing planning and engineering costs incurred after October 1, 1985; all advanced engineering and design costs; all preconstruction engineering and design costs; engineering and design costs during construction; actual construction costs, including the costs of constructing, relocating or modifying railroad bridges and approaches thereto; supervision and administration costs; costs of contract dispute settlements or awards; the value of lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and the value of utility and facility relocations, as may be required for the construction, operation and maintenance of the Project; and the cost of investigations to identify the existence of hazardous substances as identified in Article XVII a; but shall not include any costs for operation, maintenance, repair, replacement, or rehabilitation or increased costs for betterments.

c. The term "Contracting Officer" shall mean the U. S. Army Engineer for the Alaska District.

d. The term "period of construction" shall mean the time from the advertisement of the first construction contract to the time the Contracting Officer certifies in writing to the Local Sponsor that construction of the Project is complete. The Contracting Officer shall furnish to the Local Sponsor copies of the Government's Written Notice of Acceptance of Completed Work furnished to the contractor(s) for all contracts for the Project.

e. The term "highway" shall mean any highway, thoroughfare, roadway, street, or other public road or way.

f. The term "relocations" shall mean the preparation of plans and specifications for, and the accomplishment of all, alterations, modifications, lowering or raising in place, and/or new construction related to, but not limited to, existing: railroads (excluding construction, modification, or relocation of existing railroad bridges and approaches thereto), highways, and other bridges, pipelines, public utilities (such as municipal water and sanitary sewer lines, telephone lines, and storm drains), aerial utilities, cemeteries, and other facilities, structures, and improvements determined by the Government to be necessary for the construction, operation and maintenance of the Project.

g. The term "fiscal year" shall mean one fiscal year of the Government. The Government fiscal year begins on October 1 and ends on September 30.

h. The term "functional portion of the Project" shall mean a completed portion of the Project as determined by the Contracting Officer in writing to be suitable for tender to the Local Sponsor to operate and maintain in advance of completion of the entire Project. To be suitable for tender, the Contracting Officer must determine that the completed portion of the Project can function independently and for a useful purpose, although the balance of the Project is not complete.

i. The term "betterment" shall mean the design and construction of a Project feature accomplished on behalf of, or at the request of, the Local Sponsor in accordance with standards which exceed the standards which the Government would otherwise apply for accomplishing the design and construction of the Project.

ARTICLE II - OBLIGATIONS OF THE GOVERNMENT AND LOCAL SPONSOR

a. The Government, subject to receiving funds appropriated by the Congress of the United States and using funds provided by the Local Sponsor, shall expeditiously construct the Project (including construction, modification, or relocation of existing railroad bridges and approaches thereto), applying those procedures usually followed or applied in Federal projects, pursuant to Federal laws, regulations, and policies. The Local Sponsor shall be afforded the opportunity to review and comment on all contracts, including relevant plans and specifications, prior to the issuance of invitations for bids. Before initial construction of the Project can proceed, the Local Sponsor must concur in writing with issuance of the invitation for bids for the first construction contract. To the extent possible, the Local Sponsor thereafter also will be afforded the opportunity to

review and comment on all modifications and change orders prior to the issuance to the contractor of a Notice to Proceed. In those cases where providing notice to the Local Sponsor of the required contract modifications or change orders is not possible prior to issuance of Notice to Proceed, such notification will be provided after the fact at the earliest date possible. The Contracting Officer will, in good faith, consider the comments of the Local Sponsor, but award of contracts, modifications or change orders, and performance of all work on the Project (whether the work is performed under contract or by Government personnel), shall be exclusively within the control of the Contracting Officer.

b. After the Government determines that the Project or a functional portion of the Project is complete, and notifies the Local Sponsor in writing of such determination, the Government shall turn the Project or functional portion of the Project over to the Local Sponsor, which shall accept the Project or functional portion of the Project and be solely responsible for operating, maintaining, repairing, replacing, and rehabilitating the Project or functional portion of the Project in accordance with Article VIII hereof.

c. The Local Sponsor shall contribute through a combination of cash payments and the provision of Project lands, easements, rights-of-way and relocations, as herein specified and further specified in Article VI, 25 percent of total project costs.

1. As further specified in Article III hereof, the Local Sponsor shall provide all lands, easements, rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform all relocations determined by the Government to be necessary for construction, operation, and maintenance of the Project.

2. If the value of the contributions provided under paragraph 1. of this Article is less than 25 percent of total project costs, the Local Sponsor shall provide, during the period of construction, additional cash contributions in the amount necessary to make the Local Sponsor's total contribution equal to 25 percent of total project costs.

d. The Local Sponsor may request the Government to acquire lands, easements, or rights-of-way, or perform relocations on behalf of the Local Sponsor. Such services as the Government may elect to provide, shall be performed in accordance with terms or conditions of separate agreements and all such work shall be paid for in advance by the Local Sponsor.

e. The Local Sponsor may request the Government to accomplish betterments. The Local Sponsor will be solely responsible for any increase in costs resulting from the

betterments and all such increased costs will be paid in advance by the Local Sponsor in accordance with Article VI.

f. The Congress has appropriated \$7,633,000 for the Project. The Government's present ability to participate in this Project is limited to this amount. This amount is less than the Federal share of the estimated total project cost, and the Government makes no commitment to budget for the balance of such funds. In the event that Congress does not provide appropriations, the Government will terminate construction in a manner necessary to provide for the safety of the public and the integrity of the Project. Such termination shall be accomplished within the amount of presently available funds, currently estimated to be \$10,177,000. To provide for such an eventuality, 5% of available project funds (75% Federal and 25% non-Federal) will be reserved as a contingency to pay the cost of termination. In the event Congress provides additional appropriations for construction of this project, the Government will undertake additional construction of the Project using the subsequently appropriated funds and any funds required from the Local Sponsor in accordance with Article II.c. hereof.

g. Within one year after completion of the Project, or termination under Article II.f. hereof, the Local Sponsor shall provide and maintain a stockpile of 12,000 cubic yards of rock, as specified in the LRR dated October 1993, for the purpose of conducting emergency maintenance of the completed works.

h. Not less than once each year the Local Sponsor shall inform affected interests of the limitations of the protection afforded by the project.

i. No Federal funds may be used to meet the Local Sponsor's share of project costs under this Agreement unless the expenditure of such funds is expressly authorized by statute as verified in writing by the granting agency.

ARTICLE III - LANDS, RELOCATIONS, AND PUBLIC LAW 91-646

a. The Government shall provide, in coordination with the Local Sponsor, a written description of the anticipated real estate requirements for the Project. Thereafter, the Local Sponsor shall furnish all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, as may be determined by the Government in that description, or in any subsequent description coordinated with the Local Sponsor, to be necessary for the construction, operation and maintenance of the Project, and shall furnish to the Government evidence supporting the Local Sponsor's legal authority to grant rights-of-entry to such lands. The necessary lands, easements, and rights-of-way for the Project may be provided incrementally for each construction contract. All

lands, easements, and rights-of-way determined by the Government to be necessary for work to be performed under a construction contract must be furnished prior to the advertisement of that construction contract.

b. The Local Sponsor shall provide or pay to the Government the cost of providing all retaining dikes, wasteweirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for construction, operation, and maintenance of the Project.

c. Upon notification from the Government, the Local Sponsor shall accomplish or arrange for accomplishment of all relocations determined by the Government to be necessary for construction, operation and maintenance of the Project.

d. The Local Sponsor shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way, and performing relocations for construction, operation, and maintenance of the Project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

ARTICLE IV - VALUE OF LANDS AND RELOCATIONS

a. The Local Sponsor shall not receive any credit for lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, previously provided as an item of cooperation for another Federal project nor shall the value thereof be included in total project costs. The value of the lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, to be included in total project costs and credited towards the Local Sponsor's share of total project costs shall be determined in accordance with the following procedures:

1. If the lands, easements, or rights-of-way are owned by the Local Sponsor as of the date the first construction contract for the Project is awarded, the credit shall be the fair market value of the interest at the time of such award or in exceptional circumstances, upon request of the Local Sponsor and in the sole discretion of the Assistant Secretary of the Army for Civil Works, the actual purchase price paid by the Local Sponsor. The fair market value, if used, shall be determined by an appraisal, to be obtained by the Local Sponsor, which has been prepared by a qualified appraiser who is acceptable to both the Local Sponsor and the Government. The appraisal shall be reviewed and approved by the Local Sponsor and the Government.

2. If the lands, easements, or rights-of-way are acquired by the Local Sponsor after the date of award of the first construction contract for the Project, the credit shall be the fair market value of the interest at the time such interest is acquired. The fair market value shall be determined as specified in Article IV.a.1. of this Agreement. If the Local Sponsor pays an amount in excess of the approved appraised fair market value, the Local Sponsor may be entitled to a credit for the actual purchase price paid provided that the purchase price is approved by the Government in writing.

3. If the Local Sponsor acquires more land, easements, or rights-of-way than the Government determines are necessary for construction, operation, and maintenance of the Project, then only the value of such portions of those acquisitions as have been determined by the Government to be necessary for the construction, operation, and maintenance of the Project shall be included in total project costs and credited towards the Local Sponsor's share.

4. Credit for lands, easements, and rights-of-way acquired through eminent domain proceedings occurring after the date of this Agreement will be based on court awards for the real property interests taken, or on stipulated settlements or portions of stipulated settlements that have received written Government approval. The fair market value for the purposes of filing an eminent domain proceeding in court shall be based on an appraisal prepared and approved as specified in Article IV a.1. of this Agreement.

5. Credit for lands, easements, or rights-of-way acquired by the Local Sponsor within a five-year period preceding the date of this Agreement, or at any time after this Agreement is signed, will also include the reasonable documented incidental costs of acquiring the interest, e.g., closing and title costs, appraisal costs, survey costs, attorney's fees, plat maps, and mapping cost, as well as the actual amounts expended for payments of any Public Law 91-646 relocation assistance benefits provided in accordance with the obligations under this Agreement.

b. The Government shall provide the Local Sponsor with a written description of required relocations. The value of relocations which will be included in total project costs and credited towards the Local Sponsor's share of total project costs shall be determined by the Government as set forth below:

1. Highways and Highway Bridges: Only that portion of the cost as would be necessary to construct substitute bridges and highways to the design standard that the State of Alaska would use in constructing a new bridge or highway under similar conditions of geography and traffic loads.

2. Utilities and Facilities, Structures and Improvements (including railroads): Actual relocation cost, less depreciation, less salvage value, plus the cost of removal, less the increased cost of betterments. New materials shall not be used in any alteration or relocation if materials of value and usability equal to those in the existing facility are available or can be obtained as salvage from the existing facility or otherwise, unless the provision of new material is more economical. If, despite the availability of used material, new material is used, where the use of such new material represents an additional cost, such cost will not be included in total project costs, nor credited toward the Local Sponsor's share.

ARTICLE V - CONSTRUCTION PHASING AND MANAGEMENT

a. To provide for consistent and effective communication, the Local Sponsor and the Government shall, prior to the advertisement of the first construction contract, appoint representatives to coordinate on all facets of Project development, including Project design, scheduling, plans, specifications, real estate requirements, award of contracts, contract modifications and change orders, contract costs, claims, and other related matters.

b. These representatives shall generally oversee the Project construction and shall be identified as the Project Coordination Team. They shall meet regularly during the period of construction and will be informed of all changes in total project costs. The Project Coordination Team shall make recommendations concerning construction as it deems are warranted to the Contracting Officer, including suggestions to avoid potential sources of dispute.

c. The Contracting Officer shall, in good faith, consider the recommendations of the Project Coordination Team on all matters relating to construction and anticipated requirements for operation, maintenance, repair, replacement and rehabilitation of the Project. The Contracting Officer, having the legal authority and responsibility for construction of the Project, has discretion to accept, reject, or modify the recommendations of such representatives.

ARTICLE VI - METHOD OF PAYMENT

a. The Local Sponsor shall provide, during the period of construction, the cash payments required under Article II of this Agreement. Total project costs are currently estimated to be \$19,600,000 and the Local Sponsor's share of the total project costs is currently estimated to be \$4,900,000. In order to meet the Local Sponsor's share, the Local Sponsor must provide a cash

contribution currently estimated to be \$4,300,000. The dollar amounts set forth in this Article are based upon the Government's best estimates which reflect projections of costs, price level changes, and anticipated inflation. Such cost estimates are subject to adjustments based upon cost actually incurred and are not to be construed as the total financial responsibilities of the Government and the Local Sponsor.

b. The Local Sponsor shall provide the Local Sponsor's required cash contribution during the period of construction in accordance with the following provisions:

1. For purposes of budget planning, the Government shall notify the Local Sponsor by the first day of August of each year of the estimated funds that will be required from the Local Sponsor to meet the Local Sponsor's share of total project costs for the upcoming fiscal year.

2. No later than sixty (60) calendar days prior to the award of the first construction contract, the Government shall notify the Local Sponsor of the Local Sponsor's share of the total project costs required for the first fiscal year of construction, including the Local Sponsor's share of costs attributable to the Project incurred prior to the initiation of construction. Not later than 30 calendar days thereafter, the Local Sponsor shall verify to the satisfaction of the Government that the Local Sponsor has deposited the requisite amount in an escrow or other account acceptable to the Government, with interest accruing to the Local Sponsor.

3. For the second and subsequent fiscal years of Project construction, the Government shall, no later than 60 calendar days prior to the beginning of the fiscal year, notify the Local Sponsor of the Local Sponsor's share of total project costs for that fiscal year. No later than 30 calendar days prior to the beginning of the fiscal year, the Local Sponsor shall make the necessary funds available to the Government through the funding mechanism specified in Article VI b.2. of this agreement.

4. As construction of the Project proceeds, the Government shall on a regular basis each year, adjust the amounts required to be provided under this paragraph to reflect actual costs to date. If at any time during the period of construction the Government determines that additional funds will be needed from the Local Sponsor, the Government shall so notify the Local Sponsor, and the Local Sponsor, no later than sixty (60) calendar days from receipt of such notice, shall make the necessary funds available through the funding mechanism specified in Article VI.b.2. of this Agreement.

c. The Government will draw on the escrow or other account provided by the Local Sponsor such sums as the Government deems necessary to cover contractual and in-house fiscal obligations

attributable to the Project as they are incurred, as well as project costs incurred by the Government prior to the initiation of construction.

d. During the period of construction, the Government shall provide quarterly financial reports on the status of total project cost and the status of contributions made by the Local Sponsor. Upon completion of the Project and resolution of all relevant contract claims and appeals, the Government shall compute the total project costs and tender to the Local Sponsor a final accounting of the Local Sponsor's share of total project costs.

1. In the event the total contribution by the Local Sponsor is less than the Local Sponsor's required share of total project costs, the Local Sponsor shall, no later than 90 calendar days after receipt of written notice, make a cash payment to the Government of whatever sum is required to meet the Local Sponsor's required share of the total project costs.

2. In the event the total contribution by the Local Sponsor is more than the Local Sponsor's required share of total projects costs, the Government shall, no later than 90 calendar days after the final accounting is complete, subject to the availability of funds, return the excess to the Local Sponsor. In the event existing funds are not available to repay the Local Sponsor for excess contributions provided, the Government shall seek such appropriations as are necessary to repay the Local Sponsor for excess contributions provided.

ARTICLE VII - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or other forms of nonbinding alternative dispute resolution mutually acceptable to the parties.

ARTICLE VIII - OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND REHABILITATION (OMRR&R)

a. After the Contracting Officer has determined that construction of the Project or functional portion of the Project is complete and provided the Local Sponsor with written notice of such determination, the Local Sponsor shall operate, maintain, repair, replace, and rehabilitate the completed Project, or functional portion of the Project, at no cost to the Government, in accordance with applicable Federal and State laws as provided in Article XII and specific directions prescribed by the Government in an OMRR&R Manual and any subsequent amendments thereto.

b. The Local Sponsor hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon land which the Local Sponsor owns or controls for access to the Project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. If an inspection shows that the Local Sponsor for any reason is failing to fulfill the Local Sponsor's obligations under this Agreement without receiving prior written approval from the Government, the Government will send a written notice to the Local Sponsor. If after 30 calendar days from receipt of notice, the Local Sponsor continues to fail to perform, then the Government shall have the right to enter, at reasonable times and in a reasonable manner, upon lands the Local Sponsor owns or controls for access to the Project for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the Project. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Government shall operate to relieve the Local Sponsor of responsibility to meet the Local Sponsor obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to assure faithful performance pursuant to this Agreement.

ARTICLE IX - RELEASE OF CLAIMS

The Local Sponsor shall hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement and rehabilitation of the Project and any Project-related betterments, except for damages due to the fault or negligence of the Government or the Government's contractors.

ARTICLE X - MAINTENANCE OF RECORDS

Within 60 days of the date of this Agreement, the Government and the Local Sponsor shall develop procedures for keeping books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total project costs. The Government and the Local Sponsor shall maintain such books, records, documents, and other evidence in accordance with these procedures and for a minimum of three years after completion of construction of the Project and resolution of all relevant claims arising therefrom, and shall make available at their offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

ARTICLE XI - GOVERNMENT AUDIT

The Government shall conduct an audit, when appropriate, of the Local Sponsor's records for the Project to ascertain the allowability, reasonableness, and allocability of the Local Sponsor's costs for inclusion as credit against the Local Sponsor's share of total project costs.

ARTICLE XII - FEDERAL AND STATE LAWS

In the exercise of the Local Sponsor's rights and obligations hereunder, the Local Sponsor agrees to comply with all applicable Federal and State laws and regulations, including Section 601 of Title VI of the Civil Rights Act of 1964, Public Law 88-352, and Department of Defense Directive 5500.II issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army."

ARTICLE XIII - RELATIONSHIP OF PARTIES

The Government and the Local Sponsor act in an independent capacity in the performance of their respective functions under this Agreement, and neither is to be considered the officer, agent, or employee of the other.

ARTICLE XIV - OFFICIALS NOT TO BENEFIT

No member of, or delegate to, the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XV - COVENANT AGAINST CONTINGENT FEES

The Local Sponsor warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Local Sponsor for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability, or in its discretion, to add to the Agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XVI - TERMINATION OR SUSPENSION

a. If at any time the Local Sponsor fails to make the payments required under this Agreement, the Assistant Secretary of the Army (Civil Works) shall terminate or suspend work on the Project until the Local Sponsor is no longer in arrears, unless the Assistant Secretary of the Army (Civil Works) determines that continuation of work on the Project is in the interest of the United States or is necessary in order to satisfy agreements with any other non-Federal interests in connection with the Project. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 per centum of the average bond equivalent rate of the 13-week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

b. If the Government fails to receive sufficient annual appropriations to meet project expenditures for the then-current or upcoming fiscal year, the Government shall so notify the Local Sponsor. After 60 calendar days either party may elect without penalty to terminate this Agreement pursuant to this Article or to defer future performance hereunder; however, deferral of future performance under this Agreement shall not affect existing obligations or relieve the parties of liability for any obligation previously incurred. In the event that either party elects to terminate this Agreement pursuant to this Article, both parties shall conclude their activities relating to the Project and proceed to a final accounting in accordance with Article VI of this Agreement. In the event that either party elects to defer future performance under this Agreement pursuant to this Article, such deferral shall remain in effect until such time as the Government receives sufficient appropriations or until either the Government or the Local Sponsor elects to terminate this Agreement.

c. Notwithstanding any other provision of this Agreement, if the award of any contract for construction of the Project would, at the time of award, result in the total obligations for construction of the Project exceeding \$20,000,000 the award of that contract and subsequent contracts shall be deferred until such time as the Government and the Local Sponsor agree to resume construction of the Project.

ARTICLE XVII - HAZARDOUS SUBSTANCES

a. After execution of this Agreement and upon direction by the Contracting Officer, the Local Sponsor shall perform, or cause to be performed, such environmental investigations for hazardous substances as are determined necessary by the Government or the Local Sponsor to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation and Liability

Act (CERCLA), 42 U.S.C. 9601-9675, on lands necessary for Project construction, operation, and maintenance. All actual costs incurred by the Local Sponsor which are properly allowable and allocable to performance of any such investigations for hazardous substances shall be included in total project costs and cost-shared as a construction cost in accordance with Section 103 of Public Law 99-662.

b. In the event it is discovered through an investigation for hazardous substances or other means that any lands, easements, rights-of-way, or disposal areas to be acquired or provided for the Project contain any hazardous substances regulated under CERCLA, the Local Sponsor and the Government shall provide prompt notice to each other, and the Local Sponsor shall not proceed with the acquisition of lands, easements, rights-of-way, or disposal areas until mutually agreed.

c. The Government and the Local Sponsor shall determine whether to initiate construction of the Project, or if already in construction, to continue with construction of the Project, or to terminate construction of the Project for the convenience of the Government in any case where hazardous substances regulated under CERCLA are found to exist on any lands necessary for the Project. Should the Government and the Local Sponsor determine to proceed or continue with construction after considering any liability that may arise under CERCLA, the Local Sponsor shall be responsible as between the Government and the Local Sponsor, for any and all necessary cleanup and response costs, to include the costs of any studies and investigations necessary to determine an appropriate response to the contamination. Such costs shall not be considered a part of total project costs as defined in this Agreement. In the event the Local Sponsor fails to provide any funds necessary to pay for cleanup and response costs or to otherwise discharge the Local Sponsor's responsibilities under this paragraph upon direction by the Government, the Government may either terminate or suspend work on the Project or proceed with further work as provided in Article XVI of this Agreement.

d. The Local Sponsor and the Government shall consult with each other under the Construction Phasing and Management Article of this Agreement to assure that responsible parties bear any necessary cleanup and response costs as defined in CERCLA. Any decision made pursuant to paragraph c of this Article shall not relieve any party from any liability that may arise under CERCLA.

e. As between the Government and the Local Sponsor, the Local Sponsor shall be considered the operator of the Project for purposes of CERCLA liability. To the maximum extent practicable, the Local Sponsor shall operate, maintain, repair, replace and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA.

ARTICLE XVIII - NOTICES

a. All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally, given by prepaid telegram, or mailed by first-class (postage-prepaid), registered, or certified mail, as follows:

If to the Local Sponsor:

Mayor
City of Bethel
Post Office Box 388
Bethel, Alaska 99559

If to the Government:

District Engineer
U.S. Army Engineer District, Alaska
Post Office Box 898
Anchorage, Alaska 99506-0898

b. A party may change the address to which such communications are to be directed by giving written notice to the other in the manner provided in this section.

c. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at such time as it is personally delivered or seven calendar days after it is mailed, as the case may be.

ARTICLE XIX - CONFIDENTIALITY

To the extent permitted by the law governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XX - SECTION 902 PROJECT COST LIMITS

The Local Sponsor has reviewed the provisions set forth in Section 902 of Public Law 99-662, as amended, and understands that Section 902 establishes the maximum total Project cost. For purposes of this Agreement, the Section 902 cost limit is \$30,300,000 as calculated on December 22, 1992. This amount is calculated using procedures set forth in Appendix P of ER 1105-2-100. It shall be adjusted to allow for appropriate increases for inflation and changes in total project costs as provided in Section 902. Should this cost maximum be reached, no additional funds may be expended on the Project until additional authority is obtained from Congress.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement which shall become effective upon the date it is signed by the Assistant Secretary of the Army (Civil Works).

THE DEPARTMENT OF THE ARMY

THE CITY OF BETHEL

BY: 

JOHN H. ZIRSCHKY, Acting
Assistant Secretary
of the Army (Civil Works)

BY: 

Mayor, City of Bethel

DATE: 3-3-94

DATE: 2-9-94

CERTIFICATE OF AUTHORITY

I, Brooks W. Chandler, do hereby certify that I am the principal legal officer for the City of Bethel; that the City of Bethel is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the City of Bethel in connection with the Bethel Bank Stabilization Project and to pay damages, if necessary, in the event of the failure to perform, in accordance with Section 221 of Public Law 91-611; and that the person who has executed this Agreement on behalf of the City of Bethel has acted within his statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 11th day of February, 1974.

B. W. Chandler

[SIGNED]

City Attorney

Title

CERTIFICATION REGARDING LOBBYING

The undersigned certified, to the best of his knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, an officer or employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.



[Signature]

[Typed name]

Donna J. Chris

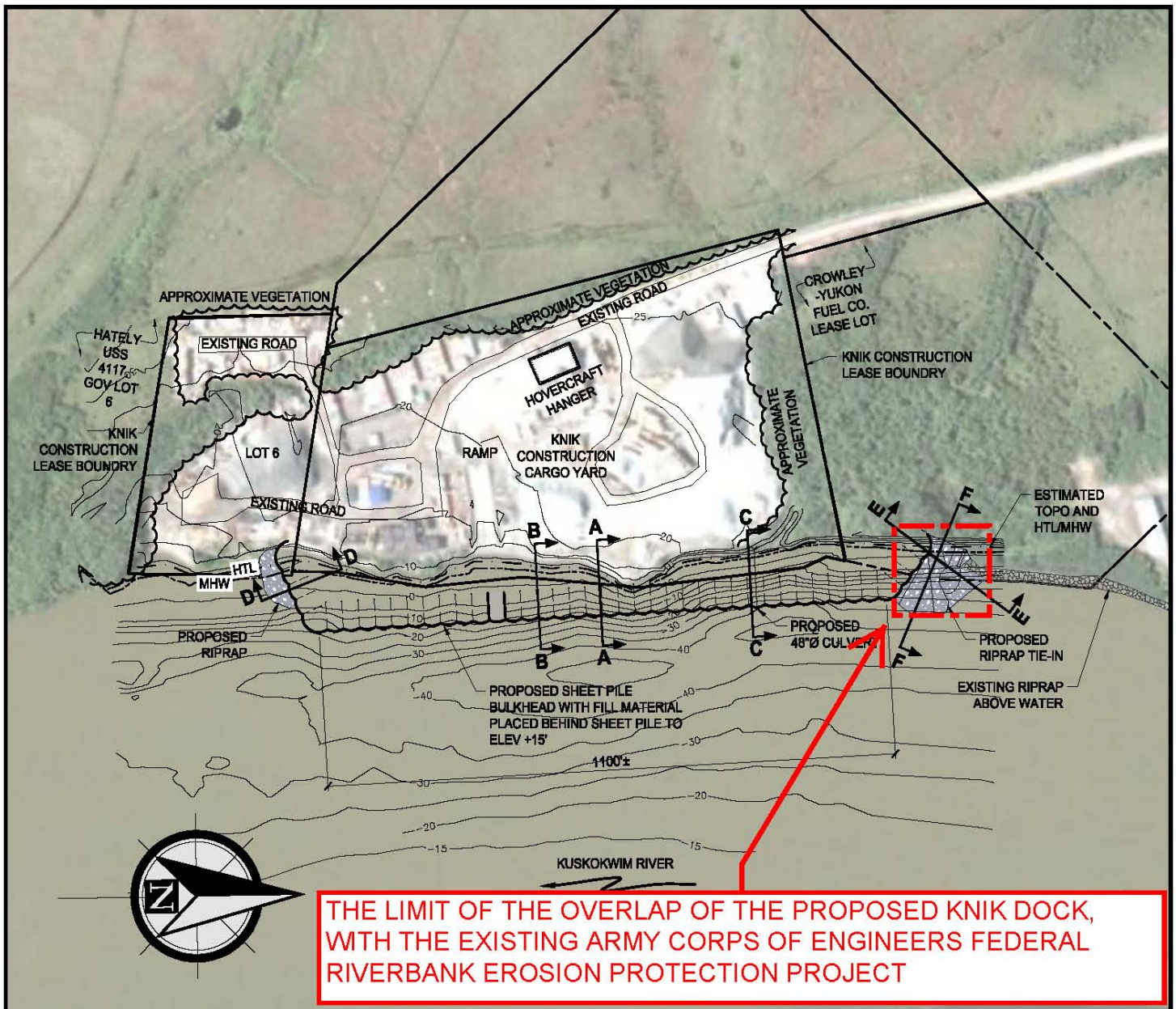
Mayor

2/9/94

Date: _____

Knik Construction Bethel Yard Dock – Project-Specific Background and Key Considerations

- USACE specifically requested that we design this Knik dock project to tie into the downstream end of the existing Bank Stabilization Project, in order to extend the bank protection through the downstream limit of the Knik project without gaps. Doing so enhances the erosion protection of the entire bank; both projects should benefit from this decision.
- PND completed a Hydrology and Hydraulics (H&H) study earlier in 2023 and submitted to USACE. We evaluated design flood information and considered storm surge potential, finding that the proposed project has negligible impacts to flood elevations or flow velocities under a wide range of assumed tidal and flood condition combinations. We can provide a copy of that H&H report upon request.
- Due to the 1994 Operating Agreement and later amendment, the City shares certain responsibilities for maintenance and repairs for the Bank Stabilization Project. As the non-federal sponsor of the Bank Stabilization Project, the City must document awareness of proposed projects that interact with or influence the project and, if all City concerns regarding that project interaction are satisfied, provide the requested statement of non-objection prior to the project being able to move forward.
- The City will not be responsible for any costs for repair and maintenance that the Knik dock project may directly have on the USACE Bank Stabilization Project resulting from construction and operation of the Knik dock. All costs for repairs and maintenance of the Bank Stabilization Project which may result from the proposed dock project, would be the direct and sole responsibility of Knik Construction, not the City.
 - Based on the hydraulic analysis that was conducted, we do not anticipate any adverse effects to the existing Bank Stabilization Project as a result of the proposed project, but if they were to occur, Knik would be responsible to remedy them.
- The Tie-In Overlap that will feature a new riprap blanket along the riverbank is approximately 150 feet long. The existing Bank Stabilization Project is about 9400 feet long. The proposed project will effectively increase the protected bank line from erosion by another 1300 feet.
- This project has already gone through the USACE Public Notice process for the pending Sections 10 and 404 permit to construct and operate the Knik Dock. The public notice for the permit in spring 2022 requested comments from state and federal regulatory agencies, the City, the local regional and village corporations and consultation invitations to the village tribal governments. The USACE public notice and review process has been completed. All prior concerns have been addressed such that no further objections were raised in those processes.
- Several regulatory approvals have also already been issued for the construction of the Knik dock; these are from the Alaska Department of Environmental Conservation for Water Quality Certification, from the Alaska Department of Fish and Game for in-water work and pile driving, and from the United States Coast Guard for navigation.



THE LIMIT OF THE OVERLAP OF THE PROPOSED KNIK DOCK, WITH THE EXISTING ARMY CORPS OF ENGINEERS FEDERAL RIVERBANK EROSION PROTECTION PROJECT

TIDAL LEVELS	
HIGH TIDE LINE (HTL)	+4.1 FT
MEAN HIGHER WATER (MHW)	+2.7 FT
MEAN LOWER LOW WATER (MLLW)	+0.0 FT

PILE QUANTITIES				
TYPE	TOTAL	BELOW HTL	BELOW MHW	
SHEET PILE	1,900 EA	1,840 EA	1,825 EA	
30"Ø MOORING BOLLARD PILE	12 EA	—	—	

FILL QUANTITIES			
	DOCK FILL (CY)	RIPRAP (CY)	FOOTPRINT (ACRE)
TOTAL	120,000	5,800	5.0
BELOW HTL	50,000	4,000	3.5
BELOW MHW	44,000	3,600	3.2

PURPOSE:
INSTALL SHEET PILE DOCK FOR EROSION PROTECTION, NAVIGATION SAFETY, AND FREIGHT TRANSFER.

DATUM: MLLW= 0.0

SEC.017 T8W R71W

LAT: 60.7784

LONG: -161.7786

SITE PLAN

KNIK CONSTRUCTION CO., INC.
6520 KULIS DRIVE
ANCHORAGE, AK 99502

12/08/2023

KNIK CONSTRUCTION BETHEL YARD DOCK

AT: BETHEL, AK
IN: KUSKOKWIM RIVER

SHEET 2 of 7

Bethel Bank Stabilization

Condition of Improvements

31 December 2019

Bethel Bank Stabilization, Alaska

(CWIS No. 012314, 075440)

Authorization Public Law 99-662, under Section 202, 17 November 1986, as adopted, provides for the placement of 8,500 linear feet of rock rip-rap along unprotected river bank and existing bulkhead structures. Energy and Water Development Appropriations Act of 2001, as enacted by Section 1 (a) (2) of Public Law 106-377, and House Conference Report Number 106-988, page 211, authorized and directed the Secretary of the Army, acting through the Chief of Engineers, to extend the Bethel Bank Stabilization project an additional 1,200 feet upstream.

Table 1

Existing Project	Length ft.
Rock rip-rap (Completed 1997)	8200
Rock rip-rap (Completed 2007)	1200

Project Usage Located on the north bank of the Kuskokwim River 400 air miles west of Anchorage, Bethel is a commercial and cultural center for the southwest region of the state. Improvements to the project will protect the city from the harmful effects of rapid riverbank erosion.

Work Prior to Existing Project

1985	Under the continuing authority of Section 14, Public Law 79-526, dated 24 July 1946, emergency bank protection is authorized by the Chief of Engineers 13 September 1985. Approximately 200 linear feet of rock rip-rap is placed at the toe of the petroleum dock, and 40 linear feet of rock rip-rap is positioned at the downstream end of the Mission Road bulkhead for a total of 1,650 cubic yards of rock. Total cost for emergency protection equals \$ 553,970 of which \$ 30,000 is contributed by non-Federal sources.
1986	Under Section 116 of Public Law 99-190 (House Joint Resolution 465) dated 19 December 1985, emergency protection is authorized for the Mission Road bulkhead. A contract is awarded in August and completed before freeze-up in October at a cost of \$ 538,942.

Progress of Work

1984	Initial planning and preparation of the General Design Memorandum is begun.
1985	The City of Bethel constructs 4,000 linear feet of bulkhead to protect the river bank. A storm in May endangers the bulkhead; the Corps moves ahead with an emergency bank protection project to save the works.
1986	Work on the General Design Memorandum is 75% complete; the plan calls for rock rip-rap protection for 8,500 feet of river bank.
1987	The General Design Memorandum is published in November.
1989	The project is inspected by the Corps this year and the next.
1991	Project dimensions are revised to protect 3,000 linear feet of previously installed bulkhead and 3,500 feet of unprotected river bank.
1992	Plans and specifications are initiated, surveys conducted, and plans reviewed by the Corps.
1993	Plans and specifications are approved in October.
1994	Real estate acquisition is initiated.
1995	Necessary real estate is acquired, and a construction contract is awarded in June. Armor rock protection is placed along 300 feet of the City Cargo Dock and along 700 feet of river bank downstream from the Mission Road Bulkhead. Placement of steel tie-back rods to hold the pipe-pile bulkheads in place is begun in September.
1996	Bank protection work nears completion: (1) structural tie-backs along the pipe-pile bulkhead are completed, (2) 157,220 tons of "B" rock are placed along the embankment with only minor placement remaining, and (3) the embankment requires some erosion protection and seeding to reach completion.
1997	Final inspection of the project, except for seeding, occurs in September. The completed project protects 8,200 feet of river bank and included placement of 221,220 tons of rock. Seeding of the sloped river bank is scheduled for June 1998.
1998	The project is physically completed. Some contract issues are still outstanding.
1999	Inspection finds the project in generally good condition. Minor erosion is noted at the downstream end of "Bootlegger Beach" where the rock ties into the bank. The bank slope downstream of the Petroleum Dock is filled and seeded.
2000	The Federal project appears to be in good condition. Locals are notified of the need to keep adequate quantities of rock stockpiled in case of an emergency.
2001	The rock revetment is found in good condition. Local interests make recommended repairs to eroded areas. Additional areas requiring fill and seeding are noted.
2002	The bank stabilization project is inspected by the Corps and found to be in good condition with some minor areas of maintenance needed. The City of Bethel has been notified. Vertical aerial photography is taken in June.

Progress of Work

2003	Corps and local officials inspect the project in August. The project is reported to be in good condition with minor areas of needed maintenance. Continued monitoring is required.
2004	The project is found in good overall condition. Areas of concern were noted, recommendations made, and continued monitoring is required.
2005	The federal bank stabilization project was thoroughly inspected in June and found to be in good condition with some minor areas of maintenance needed. The City and Petro docks should be monitored on a continuing basis, especially after high water and breakup events.
2007	A FY 2001 Congressional Add authorized and directed the Corps to extend the existing project an additional 1,200 feet upstream. Phase 1 of the project extension, placement of rip rap at the toe of the existing bulkhead was completed in September 2007.
2009	The control of overland flow and traffic on the slope face appears to have greatly helped the establishment of vegetation and the prevention of erosion of the bluff behind the revetment. Overall the project looks to be in good condition, but the rock revetment needs maintenance.
2011	The bank stabilization project was inspected and found to be in good condition with some minor areas of maintenance needed.
2013	The bank stabilization project was inspected and found to be in good condition with some minor areas of maintenance needed.
2014	The bank stabilization project was inspected and found to be in good condition with some minor areas of maintenance needed.
2016	The bank stabilization project was inspected and found to be in good condition. Rock repairs on the revetment were noted. Minor loss of fill behind the seawall was observed near the store by the seaplane beach.
2017	The bank stabilization project was inspected and found to be in good condition. Lost fill behind the seawall had been replaced. Contract W911KB17C0036 for East Bulkhead - Wale and Tiebacks was awarded to STG, Inc. in August.
2018	Construction to install tube-steel wale and anchor beams and thread-bar tiebacks at the east bulkhead is completed.
2019	The bank stabilization project and the recently completed East Bulkhead-Wale and Tiebacks project were inspected in August. Visible portions of the bank stabilization project and the East Bulkhead project were found to be in good condition.

Table 2 Cost to Date

Project	Description	Cost \$
012314	CG Appropriation	26,409,279
	CG Costs	25,169,004
	CG Contributed Appropriation	7,089,000
	CG Contributed Costs	6,600,099
075440	CG Appropriation	537,000
	CG Costs	537,000

Table 3 Range of Tides in feet

Tide Station	Mean Range	Diurnal Range	Extreme Range
946 6477 Bethel, Kuskokwim River AK	January 2, 1900	January 3, 1900	-

NOAA Publication Date: 01/14/2011

Bethel Bank Stabilization, Bethel, Alaska



Aerial of Bethel along the Kuskokwim River, 2014



Typical rock revetment and seawall at downstream end of Mission Road, 2017

Bethel Bank Stabilization, Bethel, Alaska



The Port of Bethel along the Kuskokwim River, August 2019



Bethel Bank Stabilization along Brown's Slough, June 2007

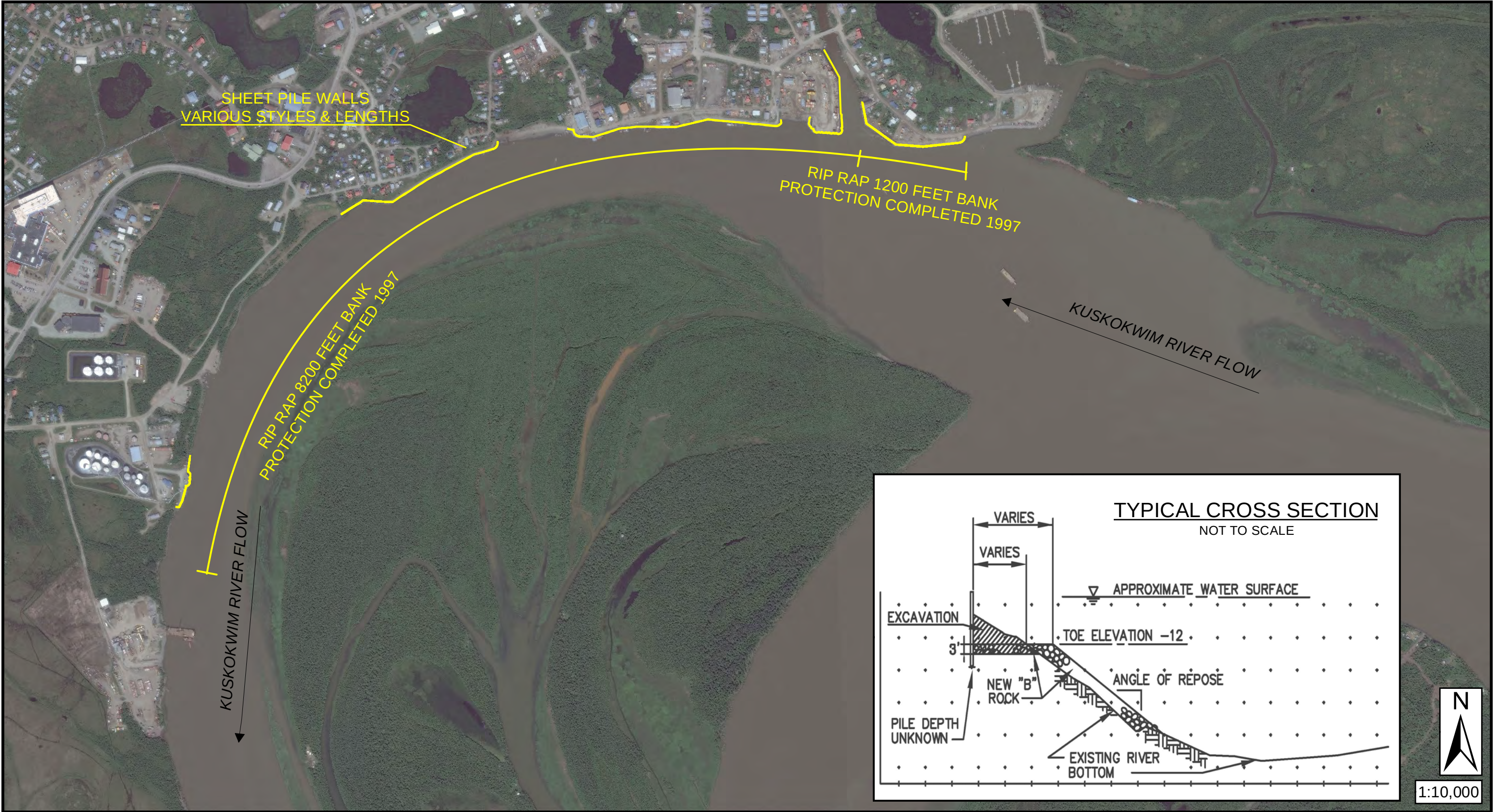
Bethel Bank Stabilization, Bethel, Alaska



Riprap transport for the Bethel Bank Stabilization project, July 2007



Placement of riprap, August 2007



**BETHEL BANK
STABILIZATION**

BETHEL, ALASKA



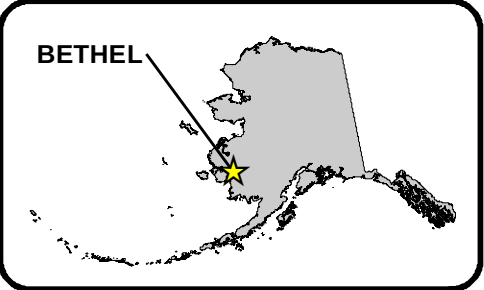
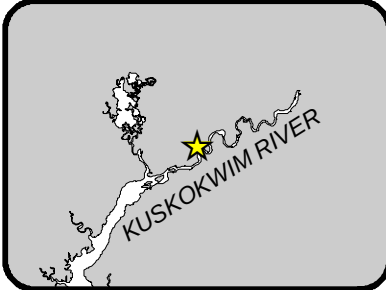
US Army Corps of Engineers Alaska District

NOTES:

1. THIS LOCALITY IS SHOWN ON USGS QUADRANGLE: BETHEL D-8
2. CURRENT SURVEY INFORMATION FOR THIS PROJECT AT <https://navigation.usace.army.mil/Survey/Hydro>

MAP DATE: 202001 IMAGERY DATE: 201807

Imagery Credits: National Geographic, ESRI, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, METI, NRCAN, GEBCO, NOAA, IPC, DigitalGlobe, GeoEye, Earthstar Geographics, SIO



City of Bethel, Alaska

Acting City Manager's Office

Council Meetings

July 23, 2024 Regular Meeting

August 13, 2024 Regular Meeting

City Manager's Office

- Met with the Facility Maintenance Foreman to go over current and future maintenance needs for the Pinky's Park Boardwalk. Within the last week, in advance of the Fourth of July Celebration, the team has priorities improving the boardwalk with safety in mind. They are aware of and will continue to address the areas that still need to be fixed. This has also been added to the July 8, Community Parks and Recreation Committee Agenda.

Committees and Commission

- Attended the Port Commission meeting on 6/24/2024 to learn more about the Knik letter of support for the seawall riprap extension toward the Knik Dock project location.
- Prepared the agendas for the Community Parks and Recreation Committee Agenda and the Public Works Committee Agenda.
- Met with Community Parks and Recreation Committee Chair to go over agenda items.
- Assigned Ex Officio responsibilities to Frank Bayer for attending the Community Parks and Recreation Committee.

Staff

- Assisted with the onboarding of three employees for public works.
- Worked with Police Department staff and Human resources to organize the pickup and welcome of Chief Harris. Cleaned the rental unit Chief will be staying in.
- Worked with the Human Resources Director on some end of year personnel related item.
- Began reviewing applications for the Finance vacancies, and the Admin Assistant vacancies.
- Interviewed two individuals for accounting specialist position with Finance.

Request for Proposals

- Affordable Housing Units: Executed a contract with Urban KNKT LLC for the construction of affordable housing units-AHFC Grant.
- Electrical Services: Closed the RFP for electrical services, requested the review board be established and recommend contracting based on review board scores. An AM for contract services is anticipated to be presented to the Council July 23.
- Professional Housing Units: Held a Pre Bid Conference. RFPs are due July 19. Drafted an Addendum 4 in response to questions from interested parties. Thanks to City Attorney for assisting with the drafting of Addendum 3.

Grants

Met with Alaska Housing Finance Corporation to discuss the payment processing for the AHFC Grants.

General

- Drafted a corrective action plan for the Water Treatment Plant after coordination with the operators.
- Participated in the Pinky’s Park clean-up Event.
- Sent out year to date actuals to each of the department heads to evaluate the end of year budget summary in anticipation of needing to do a end of year balance budget ordinance in August.
- Continue to work through website and form improvements on the new site.
- KYUK will be transferring the City’s radio equipment from the KYUK tower to a temporary tower while their new tower is constructed. The equipment housed is the radio equipment for our first responders. We are quickly coordinating with our contractors Pro Comm, to identify a solution to prevent interruption in our radio services and have asked ProComm to be present during that switch out to make sure we have experts on the ground in the case of failure.
- High five to the former Acting Public Works Director Jake Thompson and his team for their swift response to the AFFF incident at the Army National Guard. After meetings with DEC and DMVA, the City was able to return to normal operations on Friday 6/28/2024.
- The Finance team was able to jump over some hurdles with the timely completion of our water quality reports that are required to be distributed to residents on the 1st. Big thank you to the Port and the Fire Department for leaning in and providing staff support!
- After some staff shortages, it become aware there was still a lot of work to be done for the organizing of the Fourth of July Celebration. Thank you to the Planning Department and the Fire Department for leaning in and assisting with some of the last minute details.

Council Legislation Prepared/ Supported

- Ordinance 24-04 (a) Operating Budget Amendment for FY25
- Ordinance 24-05 (a) Capital Budget Amendment for FY25
- Provided amendment to Ordinance 24-06 Committee Membership Requirements-Initially drafted by the City Attorney.
- AM 24-18 Negotiate and Execute Contract for IT Services

The Acting City Clerk was out of the office so there were some carry over duties for the Acting City Manager:

Prepared agenda packet for July 9th meeting.

Reviewed and finalized the Kids Vote Ballot Programing.

Task	Period Total	Year to Date Total
Passport Appointments		36
Burial Permits/Reservations	1	21
Notary Services		15
Meeting Minutes Drafted	1	11
Resolutions Drafted		6
Ordinances Drafted	2	5
AM/IM Drafted	1	3

MEMORANDUM

Date: July 1, 2024

To: Lori Strickler, Acting City Manager

From: Lee Foley, Planning Director

Subject: Planning Director's Report

June 2024 Events

- **Property Issues/Public Nuisances:**

- 1. **New:**

- a. 325 Mission Lake Road – Ongoing effort to identify owner(s)
 - b. 621 Setter – Ongoing effort to identify owner(s)
 - c. 679 6th Street – Certified letter sent to owners
 - d. Long House Hotel – Anonymous phone call alleged illegal dumping of sewage. Met with General Manager Brandon West, inspected property, and determined there was no illegal evacuation going on

- 2. **Revisited**

- a. 211 3rd Avenue aka Watson's Corner – Corrective action ongoing in compliance with certified letter. Structure demolition and debris removal to be conducted by Dale Construction
 - b. IPHC-Alaska Subdivision – Certified Letter sent to head of United Pentecostal Holiness Church in Oklahoma City on June 30, 2024. Property still presents a biohazard due to human and animal feces on the ground
 - c. 1025A Ridgecrest Drive – Public Nuisance issues corrected
 - d. 17 Kwethluck – DA's office for action
 - e. 236 Akiak – Owner lives in Toksook Bay. Working with Planning telephonically. Given 2-week extension to correct issues due to residing remotely
 - f. 121 State Chief Eddie Hoffman Highway – Corrected
 - g. 110 & 330 Schwalde Street – Still trying to identify owners

- **Site Plan Permits:** Planning received and processed three (3) Residential Site Plan Permits

- **Planning Commission:** The monthly Planning Commission meeting was cancelled due to a lack of quorum.

- **Abandoned Vehicles:** Acting on a request from the Planning Department, Bethel PD had two (2) abandoned vehicles next to 380A 6th Street, and two (2) abandoned vehicles near the Small Boat Harbor, removed and disposed of in accordance with the provisions of Chapter 10.15 of the Bethel Municipal Code.

On Wednesday, June 26, 2024, Planning notified BPD of two (2) derelict and apparently abandoned vehicles at 380 1st Street and requested they be removed and disposed of in accordance with the applicable provisions of the BMC.

- **Vacancies:** There are no vacant positions in the Planning Department.
- **Large Projects:**
 1. **KYUK Tall Tower Project** – KYUK’s “Studio Tower” sustained damage due to icing and extreme winds. An inspection of the tower, foundation, and soil samples confirmed replacing the structure and foundation to improve structural integrity and stability was the most prudent course of action. The existing tower will be replaced with an updated self-support tower at the current site. DOWL took the lead for this project and worked in conjunction with KYUK and the Planning Department to determine what documentation was needed for a Special Use Permit to be approved. DOWL submitted a Completeness Review on September 19, 2023, that specified the requirements that KYUK had to fulfill to gain approval. It is anticipated that all of those requirements have been met, or will be met, by Monday, July 1, 2024. The current plan is to submit the entire package for inclusion on the Planning Commission’s agenda for the July 11 meeting for review and consideration.
 2. **Ptarmigan Street Encroachments** – Working with DOWL and DOT in an important infrastructure improvement project funded by federal dollars and the State of Alaska Department of Transportation and Public Facilities. Ptarmigan Street will be upgraded to improve user safety and address functional deficiencies within the roadway. Improvements to drainage, roadside hardware, pedestrian usage, lighting and signage are planned as our dust mitigation, utility relocations, and vegetation clearing and grubbing. Letters have been sent to ten (10) property owners who DOT has identified as presenting encroachment issues that could impede the project. To date, five (5) property owners have responded, all requesting clarification with respect to the DOT photos and maps that were enclosed with the certified letters. A tentative virtual meeting schedule with DOWL, DOT, and the City is planned for the week of July 8, 2024

CITY OF BETHEL POLICE DEPARTMENT



June 2024 Monthly Report

Personnel:

Current Staffing			
Position	Allocated	Staffed	Vacant
Safety Patrol (three grant funded)	3	2	1
Community Service Officer	2	2	0
Evidence and Record Custodian	1	0	1
Administrative Assistant/Taxi Inspector	1	0	1
Public Safety Dispatcher (one E911 funded)	5	3	2
Public Safety Dispatch Supervisor	1	1	0
Peace Officers (one grant funded/reimbursed SRO)	20	15	5

Operations:

Operations Tempo				
	June 2024	May 2024	May 2023	2024 Total
Calls Total	1176*	1254*	1143	7518
Reports Total	124	139	72	647
Intoxicated Pedestrian Calls	152	179	136	892
Driving Under Influence Calls	21	14	17	83
Domestic Violence Reports	19	29	12	195
Disturbance Calls	102	111	75	509
Subject Removal Calls	59	59	66	412
Animal Calls	46	43	31	221
Animal Bite Reports	3	2	0	8
Sexual Assault Reports	4	9	3	42
Death Investigation Reports	1	5	0	11

PERSONAL:

James Harris, the public safety director, has started.

We have hired Pamela Hare-Cleveland as a dispatcher, and she is currently in training.

Officer Bouma and Officer Ferguson have resigned.

Officer Watson and Officer Roberson has been promoted to Sergeants.

We continue to recruit officers, dispatchers, CSP, evidence tech, and admin assistant.

TRAINING:

Lt. Wigner attended and FBI-LEEDA training for Public Information Officer.

Other:

(*) calls for service security checks removed from this number. Officers conducted 606 security checks.

Officers conducted 18 traffic stops on ATV and issued 5 citations. 2 ATV's fled from the officer, and officer did not pursue.

Will be participating in a High Visibility Traffic Enforcement campaign for the month of July. This campaign is being sponsored by the Alaska Department of Highway Safety.

Bethel Police Department is going to host a Crafts with a Cop community function on July 8th at the community center. We are partnering with the library to host this event.

We had 2308 calls that came into dispatch to include 911, non-emergency and admin calls. Compared to 2379 last month.



CITY OF BETHEL

Post Office Box 1388

Bethel, Alaska 99559

Phone: 907-543-2047

TO: City Manager
FROM: Human Resources
SUBJECT: Monthly Manager Report

DATE: July 1, 2024

The following identifies significant projects that were in addition to general personnel action-based activities (hiring, terminations, benefits review, employee support, etc):

Benefits

Open enrollment closed on June 30th. Few employees changed their voluntary elections, twelve (12) employees dropped spousal coverage due to ineligibility, and two (2) employees declined continued coverage. Of the two that declined, one has coverage elsewhere and the other determined that family coverage was too expensive.

Compensation and Classification

The City has submitted a draft Letter of Agreement (LOA) to the union to standardize pay increases upon promotion to a flat percentage. Current language results in employees potentially making as little as 20 cents more an hour, depending upon the interpretation of their Department Head. The LOA, if accepted, will ensure that employees taking on more responsibility are able to enjoy equitable pay increases.

Recruitment and Hiring

Current vacancies at the Management Team level include City Manager and Finance Director. HR is focusing on staff-level vacancies in the Finance Department while the City has the support of Carmen Jackson fulfilling some of the upper-level administrative responsibilities. In lieu of an IT Director, the City is hoping to expand its remote support contract with Alaska Communications to include monthly on-site visits. The combination of responsive remote support with scheduled hands-on support will allow the City to maintain day-to-day operations, plan and implement IT infrastructure improvements, and have on source for the City to rely upon for IT expertise.

Nine new employees were hired during the month of June – five for permanent positions, two seasonals and two temporary drivers. Two offers were made for future permanent hire, both to start work in July in the Public Works Department. Those are still reflected as vacancies in the charts (Landfill Technician and Utility Maintenance Foreman).

Department	Number of Budgeted Positions	Vacancies	Change Since Last Report	
			Hired	Separated
Administration	3	1		
City Clerk	2	0		
Finance	9	4	+1	
Planning	2	0		
IT	2	2		
Attorney	1	0		
Fire	12	3	+1	
Police	33	8		
Public Works	54	21		
Port and Harbor	3	0		
Total	121	39		

A total of 17 new applications were received by HR during June for advertised positions. Three (3) were specific to seasonal employment and one was for a temporary driver position.

Dept/Position	Number of FY25 Budgeted Positions	Number of Vacancies	New Applications Received in June	Qualified Applications Under Review	Number Hired During June
Finance Director	1	1			
Accounting Spec I/Clerk	5	3	3	2	1
IT Director	1	1			
IT Technician	1	1	1	1	
Fire Chief	1	1			1
Fire Captain	1	1			
Firefighter/EMT	6	1	2	2	1
Chief of Police	1	0		N/A	1
Sworn Police Officers	19	2	2		
Community Service Patrol	3	1	1	2	
Evidence Custodian	1	1	1	1	
Dispatcher	5	3	1	1	1
Landfill Technician	1	1		1	Offered
Utility Maintenance Foreman	1	1		1	Offered
Util. Maint. Worker	4	2	1	3	
Hauled Utility Driver	17	12	1	2	1
Water Treatment Operator	3	1	1	5	
Mechanic	5	3	1		

NeoGOV Transition

NeoGov is completing the import of positions and employees, with online onboarding to begin in July. This will ensure a consistent process and allow for improved communication to new hires as well as the managers and supervisors involved in the hiring process..

The E-forms component has been started, with several processes already entered into the system. In addition to the electronic personnel files, the e-forms module will standardize City processes through checklists that are accessible to all employees. E-forms is scheduled to be complete by the end of the summer.

Online Timekeeping

No update.

HR is continuing to work with Caselle to activate the online timekeeping. Work is focusing on transitioning pay codes from payroll into hourly categories for the employee side. Once complete, employees will log in and enter their daily hours – digitally vs. the paper form. Finance will then be able to import the digital file and process payroll without having to manually enter employee hours. The caveat is that Department Heads must pay particular attention to the timesheets as they are approved, as this system does not provide for HR or payroll oversight or corrections. Corrections and/or changes should not happen after Dept Head approval, so this functionality brings the City into better compliance with solid payroll practices.

Workplace Safety, Injuries and OSHA Notifications

There was one reported workplace injury during the period which did not meet OSHA-notification criteria. All required forms were completed.

IT Support

IT support tickets continue to be routed through ACS's remote service, constantlyonit, with results that are timely and responsive. ACS has jumped in to assist with the oversight and research of longer-term projects, and is working with Administration to incorporate an onsite support element to enhance their contracted services. HR continues to maintain administrative access to most IT accounts.

Ongoing and Future Projects

- Coordinating recruitment efforts with the Alaska Job Center and local training sites.
- Continuing to work on creative strategies for filling vacant managerial positions.
- Presentation and acknowledgment of City Drug and Alcohol Policies.
- Developing a digital policy manual.
- Updating the Employee Handbook, last adopted by City Council in 2015.

MEMORANDUM

DATE: July 2, 2024

TO: William Arnold, Acting City Manager

FROM: John Sargent, Grant Manager

SUBJECT: Grant Manager's Report for July 9, 2024 Bethel City Council Meeting



Coronavirus Capital Projects Fund (CCP)

The City was awarded \$9 million in CCP grant funds to design and construct a new community center and gymnasium attached to the YK Fitness Center. The City and DOWL are working to complete the Environmental Review and Environmental Assessment. The environmental review documents are needed by the grantor before they issue a grant agreement to the City.

Grant Applications in Preparation

EPA Grant for Removal of Derelict Vessels

The City must apply for a grant from the Environmental Protection Agency in order to secure the \$5.018 million appropriation from Senator Murkowski's Office.

Energy Efficiency and Conservation Block Grant Program

The City of Bethel has a chance to secure \$75,220 in formula grant funding from Energy Efficiency Conservation Block Grant Program. City Administration is planning to purchase a solar power project for use at the YK Fitness Center.

Current Grants

#	Grant	Amount	Expiration
1	Coronavirus Capital Projects Fund	\$9,000,000	12/31/2026
	DOWL prepared the Environmental Review Checklist. I submitted it to grantor. A few agency letters might be needed to complete Environmental Review. Once ER is completed, the grantor will issue the grant agreement to the city.		
2	CSP - DHSS FY 2024	\$323,081	6/30/2025
	Police Department is responsible for overseeing the hiring of three CSPs to help people who are unable to care for themselves.		

3	23SHSP-GY23 – Virtual Simulator & Fencing	\$268,000	9/30/2025
	I completed and submitted the Environmental Historical Preservation (EHP) forms and supporting documentation for review and approval by the Alaska Division of Homeland Security and Emergency Management. Once EHP is approved, the City can prepare and issue an RFP to hire a fence installer.		
4	COPS Hiring Program - School Resource Officer (SRO)	125,000	6/30/2023
	City must complete final progress report and final financial report. The City must request LKSD to pay for SRO salary not covered by grant.		
5	Yukon-Kuskokwim Health Corporation Diabetes Prevention & Control Program	\$4,738	None
	To do: Complete Final Report and close grant.		

6	Coronavirus Local Fiscal Recovery Fund (ARPA)	\$3,361,604	12/31/2024
	The City spent \$2,001,041 thus far and has \$1,360,563 to spend, some of which is obligated or soon to be obligated in construction contracts. The City is using ARPA funds to pay for its new chemical storage facility and to make Q2 lift station upgrades.		
7	Designated Legislative Grant YK Fitness Center Gym/Track Design	\$500,000	6/30/2026
	The City plans to spend this money first as it designs the new multipurpose community center. Engineer firm, DOWL, LLC, is working on the preliminary design.		
8	Designated Legislative Grant Public Safety Communication Tower	\$500,000	6/30/2028
	STG, Inc. hired to purchase and install the Public Safety Communications Tower.		
9	Justice Assistance Grant (JAG)	\$14,108	9/30/2023
	The Police Department purchased a drug dog and sent an officer to training with the dog. All grant funds have been spent. Grant reports are being completed.		
10	Healthy & Equitable Funding	\$242,057	TBD
	The contractor installed two sets of playground equipment in June 2024. One playground set was installed at Pinky's Park and one set was installed at Harbor Park. Grant report due this month will seek reimbursement for expenditures made.		
11	VSW Capital Improvement Project Grant	\$13,860,000	TBD
	City hired an electrical firm to complete the water treatment plant improvements. These improvements are necessary to make the plant ready to connect water pipes to the new school and the Martina Oscar Subdivision.		

12	State Revolving Fund Loan – Drinking Water	\$86,893	6/29/2027
	All invoices have been uploaded. The City should be receiving this money and returning \$11,893 to close out the loan.		
13	State Revolving Fund Loan – Clean Water	\$86,893	6/29/2027
	All invoices have been uploaded. The City should be receiving this money and returning \$11,893 to close out the loan.		

PORT OF BETHEL

Post Office Box 1388
Bethel, Alaska 99559
Voice: 907-543-2310
Fax: 907-543-2311



To: Lori Strickler, Acting City Manager
From: Edward Flores, Port Director
Subject: June 2024 Managers Report

- **Small Boat Harbor**

The Small Boat Harbor is in full operation. In the month of June we had a couple of fishing openings that highlighted the need for more and or a renewed parking layout for the harbor. I met with Alaska Fish and Game about the possibility of moving the free fish bin to a location closer to the harbor. Ultimately, we decided the most beneficial location would be on the south bank next to the no-wake sign before you enter the mouth of the harbor.

For the summer, we have sold the following:

- 125 - Ramp Permits
- 65 - General Permits
- 75 - Float Spaces
-

- **City Dock/Beach 1/Petro Port**

The City Dock is in full swing, we met with the representatives for our bigger companies to have them move all conexs 20 feet off of the east wall of the dock. After the holiday barges we will go back out to remeasure and add some hard lines on the ground with spray paint. We have been changing out exterior light fixtures on the warehouse in the City Dock. We will also change the lighting inside the warehouse this coming week. As well as lighting around the back of the sandshed.

- **Port Office**

There are no issues to report for the Port Office. We have handed out roughly five boxes of alpar clean-up bags. Building maintenance has reduced us to one boiler for the summertime, mainly for the hot water.

- **Admin**

Our monthly storage was prepared and will leave the Port office this first week of July. The Port Commission had its regular meeting on June 24th as well as a special meeting. Our next meeting will be at City Hall on July 15, 2024, at 7 p.m.

- **Seawall**

The Port personnel have resumed daily checks along the seawall we have walked the moorable seawall and laid out where the companies will moor this summer. We do have a couple hundred feet of unassigned space below the office that we will keep open for transient boat & barge sets that make port in Bethel. We will have the port attendants backfilling the seawall pipes where needed. We will be looking at painting the bits along the seawall yellow for visibility in July.

- **Misc.**

We are maintaining the cleanliness around the waterfront as much as we can safely. Our port grader should be in this summer. We currently have two port attendant positions open at this time. We are looking to fill them as soon as we can.

IN THE DISTRICT/SUPERIOR COURT FOR THE STATE OF ALASKA
AT BETHEL

CHRISTOPHER ENGBRETH, ET AL.

vs.

CITY OF BETHEL

Plaintiff(s),

Defendant(s).

CASE NO. 4BE24-170 CI

**SUMMONS
AND
NOTICE TO BOTH PARTIES
OF JUDICIAL ASSIGNMENT**

To Defendant: CITY OF BETHEL

You are hereby summoned and required to file with the court a written answer to the complaint which accompanies this summons. Your answer must be filed with the court at (address): P.O. Box 130, Bethel, Alaska 99559 within 20 days* after the day you receive this summons.

In addition, a copy of your answer must be sent to:

Plaintiff's attorney or plaintiff (if unrepresented): Whitney Power Wilson

Address: 10950 O'Malley Centre Drive, Suite C

Anchorage, Alaska 99515

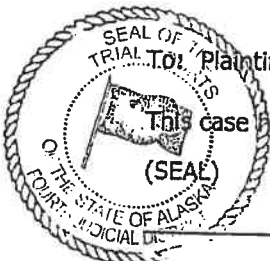
If you fail to file your answer within the required time, a default judgment may be entered against you for the relief demanded in the complaint.

If you are not represented by an attorney, you must inform the court and all other parties in this case, in writing, of your current mailing address and any future changes to your mailing address and telephone number. You may use court form *Notice of Change of Address / Telephone Number* (TF-955), available at the clerk's office or on the court system's website at <https://public.courts.alaska.gov/web/forms/docs/tf-955.pdf>, to inform the court.

-OR-

If you have an attorney, the attorney must comply with Alaska R. Civ. P. 5(i).

NOTICE OF JUDICIAL ASSIGNMENT



To: Plaintiff and Defendant

This case has been assigned to Judge Nathaniel Peters

CLERK OF COURT

By: Brittany Demontreaf
Deputy Clerk

5/6/24
Date

*The state or a state officer or agency named as a defendant has 40 days to file its answer. If you have been served with this summons outside the United States, you also have 40 days to file your answer.

CIV-100 (10/17)(cs)
SUMMONS

Civil Rules 4, 5, 12, 42(c), 55

POWER & POWER LAW, LLC

Attorneys at Law

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ADMIN@AKPOWERLAW.COM
ATTORNEYS FOR PLAINTIFF

IN THE SUPERIOR COURT FOR THE STATE OF ALASKA
FOURTH JUDICIAL DISTRICT AT BETHEL

CHRISTOPHER ENGBRETH, in his
personal capacity, and as Personal
Representative of the ESTATE OF SOPHIE
MARIE ENGBRETH, the ESTATE OF
BRIANNA ALEXANDRA ENGBRETH,
and the ESTATE OF MELISSA MARIE
ENGBRETH; RALPH ENGBRETH, JR.;
BARBARA ENGBRETH; BETHANY
KOHL, a minor, by and through her mother,
Barbara Engbreth; SOPHIA KOHL, a minor,
by and through her mother Barbara Engbreth;
RICHARD ENGBRETH; ASHLEY FOX, a
minor, by and through her father, Richard
Engbreth; ELLIANA ENGBRETH, a
minor, by and through her father Richard
Engbreth; ELLIOTT ENGBRETH, a minor,
by and through his father, Richard Engbreth,

Plaintiffs,

vs.

CITY OF BETHEL,

Defendant.

Case No. 4BE-24-_____ CI

COMPLAINT FOR DAMAGES

Plaintiffs, by and through counsel, Power & Power Law, LLC, for their causes of
action against Defendant, state and allege as follows:

Complaint For Damages
Engbreth, et al., v. City of Bethel
Page 1

PARTIES

1. Plaintiff Christopher Engebret is, and all material times was, a resident of Bethel, Alaska.
2. Decedent Sophie Marie Engebret was at all material times and a resident of Bethel, Alaska.
3. Decedent Brianna Alexandra Engebret was at all material times and a resident of Bethel, Alaska.
4. Decedent Melissa Marie Engebret was at all material times and a resident of Bethel, Alaska.
5. Plaintiff Ralph Engebret is, and all material times was, a resident of Bethel, Alaska.
6. Plaintiff Barbara Engebret is, and all material times was, a resident of Bethel, Alaska.
7. Plaintiff Bethany Kohl, a minor (DOB 10/24/2015), represented herein by and through her mother, Barbara Engebret, is, and all material times was, a resident of Bethel, Alaska.
8. Plaintiff Sophia Kohl, a minor (DOB 4/16/2017), represented herein by and through her mother, Barbara Engebret, is, and all material times was, a resident of Bethel, Alaska.
9. Plaintiff Richard Engebret is, and all material times was, a resident of Bethel, Alaska.
10. Plaintiff Ashley Fox, a minor (DOB 1/15/2012), represented herein by and through her father, Richard Engebret, is, and all material times was, a resident of Bethel, Alaska.
11. Plaintiff Elliana Engebret, a minor (DOB 4/21/2016), represented herein by and through her father, Richard Engebret, is, and all material times was, a resident of Bethel, Alaska.

12. Plaintiff Elliott Engebretth, a minor (DOB 9/25/2017), represented herein by and through his father, Richard Engebretth, is, and all material times was, a resident of Bethel, Alaska.

13. Defendant City of Bethel ("the City") is an Alaska municipality in western Alaska, Fourth Judicial District.

II. JURISDICTION AND VENUE

14. This Court has jurisdiction and venue over this matter under AS 22.10.020 and Alaska Civil Rule 3(c).

III. FACTUAL ALLEGATIONS

15. Early in the morning of August 12, 2022, a fire broke out in unit 15 of the Association of Village Council Presidents' apartment complex located at 405 Ptarmigan Street, Bethel, Alaska.

16. The City's Community Service Patrol (CSP) officer arrived at 405 Ptarmigan first and notified the City's dispatch of the fire in unit 15.

17. The nature and extent of the City's response to the fire constitutes negligence. Defendant's negligence was a cause of Plaintiffs' damages.

18. Because of Defendant's negligence, Plaintiffs, and each of them, suffered damages, in an amount to be proven at trial but, in any event, greater than \$100,000.

IV. CAUSES OF ACTION

A. Wrongful Death Claims

19. All prior allegations of this Complaint are incorporated herein by reference.
20. Sophie Marie Engebret, Brianna Alexandra Engebret, and Melissa Marie Engebret died as a result of Defendant's negligence.
21. Plaintiff Christopher Engebret, as Personal Representative of the Estates of the above decedents, is entitled to an award of damages against Defendant for the benefit of each of the Estates' wrongful death statutory beneficiaries, under AS 09.55.580.

B. Survival Claims

22. All prior allegations of this Complaint are incorporated herein by reference.
23. Sophie Marie Engebret, Brianna Alexandra Engebret, and Melissa Marie Engebret experienced pain, suffering, and fear of death as a result of Defendant's negligence.
24. Plaintiff Christopher Engebret, as Personal Representative of the Estates of the above decedents, is entitled to an award of damages against Defendant for each of the Estates, under AS 09.55.570.

C. Personal Injury Claims

25. All prior allegations of this Complaint are incorporated herein by reference.
26. Plaintiff Christopher Engebret sustained personal injuries because he was forced to jump out of a second-story window as a result of Defendant's negligence.

D. Claims for Negligent Infliction of Emotional Distress

27. All prior allegations of this Complaint are incorporated herein by reference.

28. Plaintiffs Christopher Engebret, Ralph Engebret, Jr., Barbara Engebret, Bethany Kohl, Sophia Kohl, Richard Engebret, Ashley Fox, Eliana Engebret, and Elliott Engebret each suffered damages resulting from Defendant's negligent infliction of emotional distress.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs demand relief against Defendant as follows:

1. An award for their damages, in an amount in excess of \$100,000.
2. An award for prejudgment interest.
3. An award for their attorney's fees and costs for having to bring this action.
4. Such other relief as appears just to the Court.

DATED this 1st day of May 2024 at Anchorage, Alaska.

POWER & POWER LAW, LLC
ATTORNEYS FOR PLAINTIFFS

By: /s/ Whitney Power Wilson
WHITNEY POWER WILSON
BAR NO. 1005010

POWER & POWER LAW, LLC

Attorneys at Law

10950 O'Malley Centre Drive, Suite C • Anchorage, AK 99515

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ADMIN@AKPOWERLAW.COM
ATTORNEYS FOR PLAINTIFF

IN THE SUPERIOR COURT FOR THE STATE OF ALASKA
FOURTH JUDICIAL DISTRICT AT BETHEL

CHRISTOPHER ENGBRETH, in his
personal capacity, and as Personal
Representative of the ESTATE OF SOPHIE
MARIE ENGBRETH, the ESTATE OF
BRIANNA ALEXANDRA ENGBRETH,
and the ESTATE OF MELISSA MARIE
ENGBRETH; RALPH ENGBRETH, JR.;
BARBARA ENGBRETH; BETHANY
KOHL, a minor, by and through her mother,
Barbara Engebret; SOPHIA KOHL, a minor,
by and through her mother Barbara Engebret;
RICHARD ENGBRETH; ASHLEY FOX, a
minor, by and through her father, Richard
Engbret; ELLIANA ENGBRETH, a
minor, by and through her father Richard
Engbret; ELLIOTT ENGBRETH, a minor,
by and through his father, Richard Engebret,

Plaintiffs,

vs.
CITY OF BETHEL,

Defendant.

Case No. 4BE-24-_____ CI

Consent to E-Service
Engbreth v. City of Bethel
Case No. 4BE-24-_____ CI
Page 1 of 2

CONSENT TO SERVICE BY ELECTRONIC MAIL

In accordance with Civil Rule 5.1(c), Plaintiffs, by and through counsel Power & Power Law, LLC, hereby consent to service of documents in the above captioned matter by electronic mail at the following addresses:

- admin@akpowerlaw.com;
- wpower@akpowerlaw.com

DATED the 1st day of May 2024 at Anchorage, Alaska.

POWER & POWER LAW, LLC
Attorneys for Plaintiff

By: /s/ Whitney Power Wilson
WHITNEY POWER WILSON
ABA No. 1005010

Consent to E-Service
Engbreth v. City of Bethel
Case No. 4BE-24-_____ CI
Page 2 of 2

POWER & POWER LAW, LLC

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ADMIN@AKPOWERLAW.COM
ATTORNEYS FOR PLAINTIFF

IN THE SUPERIOR COURT FOR THE STATE OF ALASKA
FOURTH JUDICIAL DISTRICT AT BETHEL

CHRISTOPHER ENGBRETH, in his
personal capacity, and as Personal
Representative of the ESTATE OF SOPHIE
MARIE ENGBRETH, the ESTATE OF
BRIANNA ALEXANDRA ENGBRETH,
and the ESTATE OF MELISSA MARIE
ENGBRETH; RALPH ENGBRETH, JR.;
BARBARA ENGBRETH; BETHANY
KOHL, a minor, by and through her mother,
Barbara Engebeth; SOPHIA KOHL, a minor,
by and through her mother Barbara Engebeth;
RICHARD ENGBRETH; ASHLEY FOX, a
minor, by and through her father, Richard
Engebeth; ELLIANA ENGBRETH, a
minor, by and through her father Richard
Engebeth; ELLIOTT ENGBRETH, a minor,
by and through his father, Richard Engebeth,

Plaintiffs,

vs.

CITY OF BETHEL,

Defendant.

Case No. 4BE-24-_____ CI

JURY DEMAND

Plaintiffs, by and through counsel, Power & Power Law, LLC, hereby demand a trial

Jury Demand
Engbreth, et al., v. City of Bethel
Page 1

POWER & POWER LAW, LLC

Attorneys at Law

10950 O'Malley Centre Drive, Suite C • Anchorage, AK 99515

Tele: 907.222.9990 / Fax: 800.840.0980

Email: admin@akpowerlaw.com

by jury of twelve in the above-captioned action.

DATED this 1st day of May 2024, at Anchorage, Alaska.

POWER & POWER LAW, LLC
ATTORNEYS FOR PLAINTIFFS

By: /s/ Whitney Power Wilson
WHITNEY POWER WILSON
BAR NO. 1005010

Jury Demand
Engbreth, et al., v. City of Bethel
Page 2

IN THE SUPERIOR COURT FOR THE STATE OF ALASKA
FOURTH JUDICIAL DISTRICT AT BETHEL

CHRISTOPHER ENGBRETH, in his personal capacity, and as Personal Representative of the ESTATE OF SOPHIE MARIE ENGBRETH, the ESTATE OF BRIANNA ALEXANDRA ENGBRETH, and the ESTATE OF MELISSA MARIE ENGBRETH; ROSEMARIE MCINTYRE; RALPH ENGBRETH, JR.; BARBARA ENGBRETH; BETHANY KOHL, a minor, by and through her mother, Barbara Engebret; SOPHIA KOHL, a minor, by and through her mother Barbara Engebret; RICHARD ENGBRETH; ASHLEY FOX, a minor, by and through her father, Richard Engebret; ELLIANA ENGBRETH, a minor, by and through her father Richard Engebret; ELLIOTT ENGBRETH, a minor, by and through his father, Richard Engebret; CYNTHIA JACOBS; STUART DENNIS; JONATHAN BILLY; ARLENE BILLY; ROSE OLSEN; DAVID TUCKER EVANS; MISZENNA EVANS, a minor, by and through her father, David Tucker Evans; WILLIAM EVANS; and KARIN EVANS,

Plaintiffs,

v.

ASSOCIATION OF VILLAGE COUNCIL
PRESIDENTS REGIONAL HOUSING
AUTHORITY,

Defendant.

Case No. 4BE-23-0069 CI

FIRST AMENDED COMPLAINT FOR DAMAGES
Christopher Engebret, et al. v. AVCP Regional Housing Authority
Case No. 4BE-23-00069 CI

Page 1 of 9

FIRST AMENDED COMPLAINT FOR DAMAGES

This First Amended Complaint for Damages is filed before answer and as a mater of course, pursuant to Alaska Civil Rule 15(a). The Plaintiffs CHRISTOPHER ENGBRETH, in his personal capacity, and as Personal Representative of the ESTATE OF SOPHIE MARIE ENGBRETH, the ESTATE OF BRIANNA ALEXANDRA ENGBRETH, and the ESTATE OF MELISSA MARIE ENGBRETH; ROSEMARIE MCINTYRE; RALPH ENGBRETH, JR.; BARBARA ENGBRETH; BETHANY KOHL, a minor, by and through her mother, Barbara Engebret; SOPHIA KOHL, a minor, by and through her mother Barbara Engebret; RICHARD ENGBRETH; ASHLEY FOX, a minor, by and through her father, Richard Engebret; ELLIANA ENGBRETH, a minor, by and through her father Richard Engebret; ELLIOTT ENGBRETH, a minor, by and through his father, Richard Engebret; CYNTHIA JACOBS; STUART DENNIS; JONATHAN BILLY; ARLENE BILLY; ROSE OLSEN; DAVID TUCKER EVANS; WILLIAM EVANS; KARIN EVANS; and MISZENNA EVANS, a minor, by and through her father, David Tucker Evans, for their First Amended Complaint for Damages against Defendant ASSOCIATION OF VILLAGE COUNCIL PRESIDENTS REGIONAL HOUSING AUTHORITY, state and allege as follows:

I. PARTIES

1. Plaintiff Christopher Engebret is, and all material times was, a resident of Bethel, Alaska.
2. Decedent Sophie Marie Engebret was at all material times and a resident of Bethel, Alaska.

3. Decedent Brianna Alexandra Engebretth was at all material times and a resident of Bethel, Alaska.

4. Decedent Melissa Marie Engebretth was at all material times and a resident of Bethel, Alaska.

5. Plaintiff Rosemarie McIntyre is, and all material times was, a resident of Issaquah, Washington.

6. Plaintiff Ralph Engebretth is, and all material times was, a resident of Bethel, Alaska.

7. Plaintiff Barbara Engebretth is, and all material times was, a resident of Bethel, Alaska.

8. Plaintiff Bethany Kohl, a minor (DOB 10/24/2015), represented herein by and through her mother, Barbara Engebretth, is, and all material times was, a resident of Bethel, Alaska.

9. Plaintiff Sophia Kohl, a minor (DOB 4/16/2017), represented herein by and through her mother, Barbara Engebretth, is, and all material times was, a resident of Bethel, Alaska.

10. Plaintiff Richard Engebretth is, and all material times was, a resident of Bethel, Alaska.

11. Plaintiff Ashley Fox, a minor (DOB 1/15/2012), represented herein by and through her father, Richard Engebretth, is, and all material times was, a resident of Bethel, Alaska.

12. Plaintiff Elliana Engebret, a minor (DOB 4/21/2016), represented herein by and through her father, Richard Engebret, is, and all material times was, a resident of Bethel, Alaska.

13. Plaintiff Elliott Engebret, a minor (DOB 9/25/2017), represented herein by and through his father, Richard Engebret, is, and all material times was, a resident of Bethel, Alaska.

14. Plaintiff Cynthia Jacobs is, and all material times was, a resident of Bethel, Alaska.

15. Plaintiff Stuart Dennis is, and all material times was, a resident of Bethel, Alaska.

16. Plaintiff Jonathan Billy is, and all material times was, a resident of Bethel, Alaska.

17. Plaintiff Arlene Billy is, and all material times was, a resident of Bethel, Alaska.

18. Plaintiff Rose Olsen is, and all material times was, a resident of Bethel, Alaska.

19. Plaintiff David Tucker Evans is, and all material times was, a resident of Bethel, Alaska.

20. Plaintiff Miszena Evans, a minor (DOB 7/13/2005), represented herein by and through her father, David Tucker Evans, is, and all material times was, a resident of Bethel, Alaska.

21. Plaintiff William Evans is, and all material times was, a resident of Bethel, Alaska.

22. Plaintiff Karin Evans is, and all material times was, a resident of Bethel, Alaska.

II. JURISDICTION AND VENUE

23. This Court has jurisdiction and venue over this matter under AS 22.10.020 and Alaska Civil Rule 3(c).

III. FACTUAL ALLEGATIONS

24. Early in the morning of August 12, 2022, a fire broke out at the apartment complex owned and operated by Defendant at 405 Ptarmigan Street, Bethel, Alaska.

25. The nature and extent of the destruction caused by the fire was the result of Defendant's negligence, consisting, *inter alia*, of the following: failure to inspect and replace smoke detectors that were defective, old, or nonfunctional; failure to timely replace and install adequate working smoke detectors; failure to install an adequate number of smoke detectors for each level of Plaintiffs' apartments; failure to place smoke detectors in locations adequate to warn Plaintiffs of a fire; failure to install and maintain smoke detectors that met audibility requirements; failure to install and provide smoke detectors that met building code requirements; failure to retrofit smoke detectors to replace battery powered detectors with hard-wired detectors; failure to conduct routine safety inspections of fire extinguishers; failure to replace fire extinguishers that were defective, old, or nonfunctional; failure to install adequate fire extinguishers; failure to instruct residents of proper usage of fire extinguishers in case of fire; failure to properly indicate where fire extinguishers are located; failure to retrofit the apartment building to install a fire safety sprinkler system; failure to provide adequate means of egress from the windows of Plaintiff's apartments; failure to have adequate fire-retardant material in the apartments' walls; failure to provide a single-floor apartment for Plaintiff Sophie Engebret, an elderly and disabled woman, and her family; failure to perform adequate safety inspections; failure to timely correct deficiencies found in safety inspections; failure to provide residents with safety protection cues

to safely evacuate a building to avoid injury or death; and failure to properly educate residents of fire safety evacuation plan and procedures.

26. Because of Defendant's negligence, Plaintiffs, and each of them, suffered damages, in an amount to be proven at trial.

IV. CAUSES OF ACTION

A. Wrongful Death Claims

27. All prior allegations of this Complaint are incorporated herein by reference.

28. Sophie Marie Engebret, Brianna Alexandra Engebret, and Melissa Marie Engebret died as a result of Defendant's negligence.

29. Plaintiff Christopher Engebret, as Personal Representative of the Estates of the above decedents, is entitled to an award of damages against Defendant for the benefit of each of the Estates' wrongful death statutory beneficiaries, under AS 09.55.580.

B. Survival Claims

30. All prior allegations of this Complaint are incorporated herein by reference.

31. Sophie Marie Engebret, Brianna Alexandra Engebret, and Melissa Marie Engebret experienced pain, suffering, and fear of death as a result of Defendant's negligence.

32. Plaintiff Christopher Engebret, as Personal Representative of the Estates of the above decedents, is entitled to an award of damages against Defendant for each of the Estates, under AS 09.55.570.

C. Personal Injury Claims

33. All prior allegations of this Complaint are incorporated herein by reference.

34. Plaintiff Christopher Engebretth sustained personal injuries because he was forced to jump out of a second-story window as a result of Defendant's negligence.

35. Plaintiffs Rose Olsen, David Tucker Evans, William Evans, Karin Evans, and Miszena Evans each sustained personal injuries because they were forced to evacuate their apartment through a first-floor window as a result of Defendant's negligence.

D. Claims for Negligent Infliction of Emotional Distress

36. All prior allegations of this Complaint are incorporated herein by reference.

37. Plaintiffs Christopher Engebretth, Rosemarie McIntyre, Ralph Engebretth, Jr., Barbara Engebretth, Bethany Kohl, Sophia Kohl, Richard Engebretth, Ashley Fox, Eliana Engebretth, and Elliott Engebretth each suffered damages resulting from Defendant's negligent infliction of emotional distress.

E. Claims for Economic Displacement

38. All prior allegations of this Complaint are incorporated herein by reference.

39. Plaintiffs Cynthia Jacobs, Stuart Dennis, Jonathan Billy, and Arlene Billy each suffered economic damages resulting from their being displaced because of Defendant's negligence.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs demand relief against Defendant as follows:

1. An award for their damages, in an amount in excess of \$100,000.
2. An award for prejudgment interest.
3. An award for their attorney's fees and costs for having to bring this action.

4. Such other relief as appears just to the Court.

ANGSTMAN LAW OFFICE

Attorneys for Plaintiff Christopher Engebret, as Personal Representative of the Estate of Sophie Marie Engebret, the Estate of Brianna Alexandra Engebret, and the Estate of Melissa Marie Engebret

Dated: 4/26/2023

By: [Signature]
Myron Angstman
ABA No. 7410057

LAW OFFICE OF JOSHUA FANNON

Attorneys for Plaintiff Christopher Engebret, in his personal capacity

Dated: 4/26/2023

By: [Signature]
Joshua Fannon
ABA No. 0406038

WINNER & ASSOCIATES, P.C.

Attorneys for Plaintiffs Rosemarie McIntyre; Ralph Engebret, Jr.; Barbara Engebret; Bethany Kohl, a minor, by and through her mother, Barbara Engebret; Sophia Kohl, a minor, by and through her mother Barbara Engebret; Richard Engebret; Ashley Fox, a minor, by and through her father, Richard Engebret; Elliana Engebret, a minor, by and through her father Richard Engebret; Elliott Engebret, a minor, by and through his father, Richard Engebret; Cynthia Jacobs; Stuart Dennis; Jonathan Billy; Arlene Billy; Rose Olsen; David Tucker Evans; Miszena Evans, a minor, by and through her father, David Tucker Evans; William Evans; and Karin Evans

Dated: 4/26/2023

By: [Signature]
Russell L. Winner
ABA No. 7811149

FIRST AMENDED COMPLAINT FOR DAMAGES

Christopher Engebret, et al. v. AVCP Regional Housing Authority

Case No. 4BE-23-00069 CI

Page 8 of 9

Certificate of Service

I certify that on this 26th day of April, 2023,
A true copy of the foregoing was served by
TrueFiling, to the following:

Aaron D. Sperbeck
Birch Horton Bittner & Cherot
510 L Street, Suite 700
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Myron Angstman
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Teela Mostowy