

**W. 30<sup>TH</sup> AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**95% DESIGN  
Invitation to Bid No. 2020C0XX**

**PROJECT NUMBER  
20-24**



**Municipality of Anchorage  
PROJECT MANAGEMENT & ENGINEERING  
DEPARTMENT**

**PO Box 196650  
Anchorage, Alaska 99519**

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

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**MUNICIPALITY OF ANCHORAGE**  
**PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES**  
**SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**I**

**INVITATION TO BID**

**MUNICIPALITY OF ANCHORAGE  
PURCHASING DEPARTMENT**

Invitation to Bid

**No. 2020C0**

Sealed bids will be received in accordance with the time schedule shown below by the Municipality of Anchorage at the Purchasing Department, 632 W. 6th Avenue, Suite 520; Anchorage, Alaska, 99501, for:

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

Consisting of approximately 14,100 C.Y. of Excavation; 22,200 Tons of Classified Fill and Backfill; 1,748 L.F. of Curb and Gutter Removal; 7,944 S.Y. of Pavement Removal; 1,460 Tons A.C. Pavement; 4,131 L.F. Curb and Gutter Installation; 14 Curb Ramp Installations; 73,650 S.F. Insulation Installation (R-9); 4,730 S.F. Insulation Installation (R-4.5); 1,282 S.Y. P.C.C. Sidewalk (Varying Thickness); 187 C.Y. Red Colored Concrete (Varying Thickness); 187 C.Y. P.C.C. Structure/Retaining Walls; 1,304 L.F. of Storm Drain Pipe; 12 Storm Drain Manholes; 12 Storm Drain Catch Basins; 1 Stormwater Treatment Structure; 20 Roadway Luminaires (including spares); 10 Pedestrian Light Columns (including spares); 1 Type 1A Load Center; 1,184 L.F. Remove and Reset Fence; 252 S.F. Standard Signs; Landscaping and related work.

ESTIMATED CONSTRUCTION COST: Between \$2,000,000 and \$4,000,000

Site Visit(s) at \_\_\_\_\_  
\_\_\_\_\_

Pre-Bid Conference at \_\_\_\_\_  
\_\_\_\_\_

**REQUEST ANY QUESTIONS BE SUBMITTED IN WRITING TO [WWPUR@MUNI.ORG](mailto:WWPUR@MUNI.ORG). BEFORE THE PRE-BID CONFERENCE. Please reference the Project Title and Invitation to Bid No. 2020C0\_\_\_\_\_**

Bids Opened at \_\_\_\_\_  
\_\_\_\_\_

Post-Bid Conference at \_\_\_\_\_  
\_\_\_\_\_

An electronic (.pdf) copy of the Invitation to Bid is available at Municipality of Anchorage, Purchasing Office's website; (<http://purchasing.muni.org>). Should you choose to obtain a copy of the Invitation to Bid from the website; it is your responsibility to periodically check the website for addenda.

At the above-indicated time, the bids will be opened publicly and read. Bids must be received by the Purchasing Officer prior to the time fixed for opening of the bids to be considered. Time of receipt will be as determined by the time stamp in the Purchasing Office, Suite 520.

Drawings, specifications, and contract documents may be examined and will be available for pickup at 632 W. 6th Avenue, Suite 520; Anchorage, Alaska; Monday through Friday, 8 a.m. until 12 noon and 1 p.m. until 5 p.m. These documents are available for sale on a non-refundable basis at \$\_\_\_\_\_ per set (cash or check only).

Fees stated above include parcel post charges (1st class mail). Should expedited handling be desired, Federal Express or equivalent service will be utilized on a reverse billing basis only.

The Municipality of Anchorage reserves the right to reject any and all bids and to waive any informalities in the bids. No bidder may withdraw his bid after the hour set for the opening of bids or before the Award of Contract unless said award is delayed for a period exceeding forty-five (45) days from the time of the opening.

The Municipality shall not be responsible for bid preparation costs, nor for costs, including attorney fees, associated with any (administrative, judicial, or otherwise) challenge to the determination of the lowest responsive and responsible bidder and/or award of contract, and/or rejection of bids. By submitting a bid, each bidder agrees to be bound in this respect and waives all claims to such costs and fees.

Contracts shall be awarded by written notice issued by the Purchasing Officer to the lowest responsive and responsible bidder; however, preference will be given to local bidders in compliance with Anchorage Municipal Code, Section 7.20.040.

A pre-bid conference will be held at the above-indicated time in the Purchasing Office for the purpose of answering any questions bidders may have and to consider any suggestions they may wish to make. Any changes resulting from this conference will be made by Addendum immediately following the conference. This conference is held for the benefit of the bidders. It is requested that some person of authority from the office of the prospective bidder attend this meeting.

The Municipality of Anchorage assumes no responsibility for any interpretations or presentations made by any of its officers or agents unless such interpretations or presentations are made by written addendum to this Invitation to Bid.

Bonding requirements are per M.A.S.S.B./M.A.S.S. or as per Special Provisions.

PUBLISH ONE TIME

Date \_\_\_\_\_

\_\_\_\_\_  
Ronald S. Hadden

Purchasing Officer

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**II**

**SPECIAL PROVISIONS**

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

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95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**SPECIAL PROVISIONS**

**SECTION 95.01 LOCATION AND SCOPE**

All proposed Work is located within the Municipality of Anchorage corporate limits and is more particularly located on West 30<sup>TH</sup> Avenue, North Star Street, and undeveloped property between Spenard Road and Arctic Boulevard. Work is also located within Arctic Boulevard at the W. 32<sup>ND</sup> Avenue and Arctic Boulevard intersection and along W. 32<sup>ND</sup> Avenue between Arctic Boulevard and C Street, see Drawings for detailed location. The Work included under this Contract consists of but is not limited to:

- Reconstructing West 30<sup>TH</sup> Avenue and North Star Street roadways within the project limits with a new insulated roadway structural section and installing high/low spots in the roadway profile as shown on the Drawings.
- Reconstructing the adjacent driveways with a new structural section to match the new roadway profile.
- Installing sidewalks, curb ramps and pathways at locations shown in the Drawings.
- Installing a retaining wall along the pathway on North Star Street and in other locations shown on the Drawings.
- Removing and replacing the existing storm drain system and extending the storm drain system as shown on the Drawings.
- Installing new roadway lighting and pathway lighting. Replacing AWWU parking lot lighting along their west property line.
- Installing a raised pedestrian refuge island/median within Arctic Boulevard.
- Installing signing and striping and landscaping as shown on the Drawings.
- Furnishing all labor, materials, equipment, supervision, and other facilities necessary to successfully complete the Work set forth in the Drawings and Specifications.

It is the responsibility of the bidder to prepare the bid so that all materials and/or fittings shall harmoniously conform to the intent of the Contract Drawings, Specifications, and Special Provisions.

Below are the schedules of Work that are presented in the Bid Proposal of this Contract:

**SCHEDULE DESCRIPTION**

A.	Roadway Improvements	Base Bid
B.	Drainage Improvements	Base Bid
C.	Illumination & Signalization Improvements	Base Bid
D.	Landscaping Improvements	Base Bid

**SECTION 95.02 REFERENCE TO MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS**

This Contract is subject to and hereby incorporates by reference the Municipality of Anchorage Standard Specifications, dated 2015, hereinafter referred to as M.A.S.S.; the Alaska Sign Design Specifications (ASDS) as adopted and amended by the Municipality; the Municipality of Anchorage Sign Manual; the Alaska Traffic Manual (ATM)-Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition, with the Alaska supplement, dated 1/13/12; the National Electrical Safety Code (NESC) as amended and adopted by the Municipality; the National Electrical Code as amended and adopted by the Municipality of Anchorage; and the Edition of the Standard Specifications for Structural Supports for Highway Sign, Luminaires and Traffic Signals provided in the appropriate divisions. When conflicts exist between M.A.S.S. and MUTCD, the requirements of M.A.S.S. and these Special Provisions shall govern.

**SECTION 95.03 TIME OF COMPLETION**

This Project shall be completed within one hundred ten (110) calendar days after the Notice to Proceed is issued.

**SECTION 95.04 MODIFICATIONS AND/OR ADDITIONS TO MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS**

The following listed provisions of M.A.S.S. are amended as hereinafter stated:

## **A. DIVISION 10 STANDARD GENERAL PROVISIONS**

*Add the following Section:*

### **SECTION 10.00 ALL APPLICABLE M.A.S.S. ARTICLES**

Delete all references to and requirements for compliance with Anchorage Municipal Code Chapter 7.60 the Disadvantaged/Women Owned Business (DBE/WBE) program and specifications.

### **SECTION 10.01 DEFINITIONS**

*Add the following item to the list of definitions:*

**BMP** – Best Management Practices

**CEA** – Chugach Electric Association

**FHWA** - Federal Highway Administration

**NPDES** – National Pollutant Discharge Elimination System

**Record Drawings** – Detailed drawings which accurately depict all changes in location (both horizontal and vertical), material, equipment, and other elements of Work accomplished by Contractor. The drawings shall also depict the horizontal and vertical locations of all other utilities and obstructions encountered during construction. Final elevations and locations shall be clearly marked with actual dimensions, or existing dimensions shall be noted with “ASB” if no changes occur.

**UL** – Underwriters Laboratories, Inc.

### **SECTION 10.04 SCOPE OF WORK**

#### **Article 4.8 Work Incidental to the Contract**

*Add the following items which shall be incidental to the cost of the Contract:*

14. Asphalt for tack coat.
15. Sawcutting, unless otherwise noted to be paid for.
16. Repair of existing infrastructure or areas outside of demolition limits that are damaged by Contractor.
17. Furnishing and installing grounding conductors, ground rods, and ground rod clamps.
18. Installation of flexible delineators at the end of culverts, ends of retaining walls, field inlets, and other locations that may be hazardous or should be delineated for snow removal operations as determined by the Engineer.
19. Removal and/or abandonment of soil boring caps, borings and piezometer tubes.
20. Remove and salvage existing signs.

21. Removal and disposal or replacement of private improvements within construction limits unless Pay Item is specifically identified on the Drawings.
22. Dewatering as required for construction.
23. Relocation of existing Opticom Detector on existing signal mast pole arm.

#### **Article 4.17 Utilities**

*Add the following sentence to the end of the seventh paragraph:*

Utilities are the responsibility of the Contractor to request locates for, coordinate with the Work, maintain, and protect.

*Add the following after the first sentence of the ninth paragraph:*

Contractor shall have no right to proceed first with the Work under this Contract in advance of any utility company. Utility work being done by others within the project area will generally take place while the Contractor is performing Work necessary for this project. In the event that the Contractor is unable to continue Work without interfering with utility relocation or protection Work by others, the Engineer will direct the Contractor to Work in a different area. The Engineer may choose to suspend Work until the conflict is resolved. The Contractor shall not be entitled to additional compensation resulting from suspension of work because of conflicts with existing utilities or work incidental to utility relocation activities by others.

Below is a summary of contacts names and numbers and the work to be performed by utility companies within the project area. Once received by utility companies, Appendix C will include drawings of proposed utility work available at time of bidding but is not all inclusive of the utility relocation work required for this project. Field conditions of existing utilities may vary including depth of cover and location. Additional conflicts with utility lines and facilities may be present that will require relocation by others. No additional money will be owed to the Contractor due to any delay caused by utility companies work even if work is not specifically stated below.

**Chugach Electric Association, Inc. (CEA):** CEA has existing electrical facilities in the project area including lines, pedestals, poles, switch cabinets, transformers and junction boxes. CEA will be relocating their facilities as shown in their drawings in Appendix C. The following is a brief summary of their work:

1. Will be provided at final design after utility potholing has been completed.

The CEA contact is Mike Miller at 762-4490.

**Alaska Communications (ACS):** ACS has existing telephone facilities within the project area, including lines and pedestals. ACS will be relocating their facilities as shown in their drawings in Appendix C. The following is a brief summary of their work:

1. Will be provided at final design submittal after utility potholing has been completed.

The ACS contact is Francisco Martin at (907) 564-1785 (office) or 907) 231-7369 (mobile).

**Enstar Natural Gas (Enstar)**: Enstar has existing plastic underground gas mains and services in the project area. Enstar will be relocating their facilities as shown in their drawings in Appendix C. The following is a brief summary of their work:

1. Will be provided at final design after utility potholing has been completed.

The ENSTAR contact is Jeff Hebert at 334-7756.

**General Communications, Inc. (GCI)**: GCI has existing underground coaxial cable, fiber optics lines, and structures within the project area. GCI will be relocating their facilities as shown in their drawings in Appendix C. The following is a summary of their work:

1. Will be provided at final design after utility potholing has been completed.

The GCI contact is Mark Cypher at (907) 868-1476 (office) or (631) 921-4444 (mobile).

*Add the following paragraph:*

Underground utilities shall be continuously supported during backfill placement and compaction. Geotextile shall be separated from nearby utilities with a minimum of 1 foot of backfill material to prevent undue stress during the compaction and settlement process.

C. Gas

*Add the following paragraph:*

The Contractor shall download and follow the most current construction guidelines published by ENSTAR. Those guidelines can be downloaded from:

<https://www.enstarnaturalgas.com/safety-education/natural-gas-safety/safety-for-excavators-contractors/>

*(Click on the link in the last sentence of the first paragraph.)*

The Final Rule from the PHMSA website can be obtained from:

<http://www.phmsa.dot.gov/nprm-anprm/PHMSA-2009-0192>

*(Click on the "Excavation Damage 80 FR 43836 Final Rule" link on the right hand side.)*

D. Electrical and Telecommunications

*Add the following paragraph:*

The Contractor shall download and follow the most current construction guidelines published by CEA. Those guidelines can be downloaded from:

W. 30<sup>th</sup> Avenue & North Star Street Upgrades  
Spenard Road to Arctic Boulevard  
MOA PM&E Project No. 20-24



<http://www.chugachelectric.com/media-room/publications-request>

*Click on the link titled "Electrical facility Clearance Requirements".*

*Replace the list of Utility Companies after Article E with the following:*

The following contact information is provided as a courtesy to the Contractor and is the most current list available.

Alaska Communications (ACS) – Francisco Martin, 564-1785

Anchorage Water & Wastewater Utility (AWWU) – Joe Sanks, 564-2717

AT&T – Mike Barsalou, 264-7325

Chugach Electric Association (CEA) – Mike Miller, 762-4490

ENSTAR Natural Gas – Jeff Hebert 334-7756

GCI, Inc. – Mark Cypher at (907) 868-1476 (office) or (631) 921-4444 (mobile)

Municipal Light & Power (ML&P) – Lance Cluff, 263-5244

Municipal Street and Storm Drain Maintenance – Eric Hodgson, 343-8100 or 317-7059

Municipal Street Light Maintenance – Paul VanLandingham, 317-7054

Municipal Traffic Signals Section – Mike Sickler, 343-8335

Solid Waste Services (SWS) – Evala Filitaula, 343-6258 or 317-6863

Alaska Waste – Josh James, 688-4446

*Add the following Articles:*

#### **Article 4.22 Project Information Signs**

Prior to beginning of any Work on the project, Contractor shall install two owner-furnished project information signs and posts, in accordance with Section 70.12, Article 12.7 - Traffic Control Devices, in a location directed by the Engineer. The skid mounted project information signs, frames, and post skids shall be available for pick up at 5701 Northwood Drive, Monday through Thursday from 8:00 a.m. to 4:00 p.m. Owner-supplied materials for each sign assembly are as follows:

- Project Information Sign - one (1) 4'x8'x $\frac{3}{4}$ " MDO wood sign
- Sign Frame - one (1) 2"x4" Pressure Treated (PT) lumber pre-assembled in a rectangular shape measuring 4-foot by 8-foot
- Post Skids - two (2) 4"x4" PT Lumber pre-assembled measuring 6-foot at the base and standing 8-foot in height

Signs shall be affixed to frame; frame and sign shall be affixed to the post skids accordingly. Once assembled and positioned as directed by the Engineer, the Contractor shall supply and secure each post skid with two (2) each 50-pound sand bags, or provide equivalent anchoring system as approved by the Engineer.

Following final completion of the project, Contractor shall disassemble the signs and return the owner-provided materials to 5701 Northwood Drive. This Work shall be considered incidental to the project.

#### **Article 4.23 Responsibility of Contractor to Act in Emergency**

In case of an emergency that threatens loss and/or injury of property and/or safety of life, the Contractor shall act, without previous instructions from the Engineer, as the situation may warrant. The Contractor shall notify the Engineer thereof immediately thereafter. Any claim for compensation by the Contractor, together with substantiating documents in regard to expense, shall be submitted to the Owner through the Engineer. The amount of compensation shall be determined by agreement.

The Contractor shall supply the Engineer, prior to commencement of Work, with an emergency telephone number through which a responsible Contractor's representative can be contacted on a twenty-four (24) hour a day basis, seven (7) days a week.

#### **Article 4.24 Coordination with Other Projects in the Area**

It shall be the responsibility of the Contractor to coordinate with and minimize impact to other projects in the area including, but not limited to, the following:

1. Utility Relocation/Protection Work by others, per Section 10.04.17 of these Special Provisions.

The Contractor shall be responsible for affirmatively coordinating with other projects in the area so as to not unreasonably interfere with the performance of the other projects.

If the Work of the Contractor is delayed or disrupted because of the construction or transportation activities of other projects in the area, the Contractor shall not be entitled to additional compensation from the Owner, but may be entitled to an extension of time in accordance with Article 5.23 – Delays and Extension of Time.

Except with regard to a possible entitlement to an extension of time, the Contractor shall hold harmless, defend, and indemnify the Owner from and against any and all claims by the Contractor arising directly or otherwise out of the other projects in the area.

Work required to coordinate with and minimize impact to other work in the Project area shall be considered incidental to the Project.

#### **Article 4.25 Payment for Common Work Items**

The following Common Work Items may be necessary for more than one Work Schedule within the project Base Bid. For these Common Work Items, all of the necessary Work for all Schedules in the Base Bid will be considered part of Schedule A - Roadway Improvements.

MASS Section	Common Work Item
20.02	Storm Water Pollution Prevention Plan (Type 3)
20.04	Clearing and Grubbing
65.02	Construction Survey Measurement
70.12	Traffic Maintenance

The following Common Work Items may be necessary for more than one Work Schedule within the project Base Bid. For these Common Work Items, all of the necessary Work for all Schedules in the Base Bid will be considered part of Schedule B – Drainage Improvements.

MASS Section	Common Work Item
55.27	Storm Drain Bypass System

## **SECTION 10.05 CONTROL OF WORK**

### **Article 5.27 Liquidated Damages**

*Add the following paragraph:*

The Owner may withhold from any progress payment the sum of Five Hundred Dollars (\$500.00) per day as Liquidated Damages for each and every calendar day that the Substantial Completion Date is delayed beyond Contract Completion Date. The Owner may withhold out of any progress payment the sum of Five Hundred Dollars (\$250.00) per day as Liquidated Damages for each and every calendar day that the Final Acceptance Date is delayed beyond the Contract Completion Date. If no money is due Contractor, the Owner will have the right to recover said sums from Contractor, the Surety, or both.

### **Article 5.31 Winter Suspension**

#### **C. Suitable Conditions for Winter Maintenance**

*Add the following paragraphs:*

8. Contractor shall install temporary flexible delineators at the end of culverts, end of retaining walls, field inlets, and other locations as determined by the Engineer.

*Add the following Article:*

#### **Article 5.34 Work Plan**

Contractor shall prepare a Work Plan for approval by the Engineer prior to beginning construction. The goals of the Work Plan shall include the following:

- Maintain a safe transportation corridor through the project area for vehicles and pedestrians.
- Minimize impacts to existing utilities and protect existing utilities where required.
- Minimize impacts to vehicular and pedestrian traffic.
- Minimize impacts to operations at AWWU facilities.
- Coordinate with and minimize impacts to other Contractors working in the area.
- Minimize dust and erosion generated by Construction activities.
- Minimize overall construction noise.
- Finish the project within the time of completion requirement.

Contractor shall submit a project Work Plan for approval by the Engineer within seven (7) days after signature of the Contract. Contractor shall coordinate the Work Plan with the Traffic Control Plan, Dewatering/Trench Dewatering Plan, SWPPP Plan, Storm Drain Bypass System Plan, Creek Diversion Plan and adhere to all permit requirements. Work shall not proceed until the Engineer has approved in writing the Work Plan. The Work Plan shall include estimated dates of completion for each significant element of Work. The Work Plan shall also include an AWWU construction coordination plan to ensure AWWU daily operations will be able to function without impacts during the duration of construction operations. Contractor shall submit plan to AWWU for review and approval prior to beginning construction operations.

No separate payment shall be made for the Work described in this Article and all Work required to provide an approved Work Plan is incidental to the Contract. The Work Plan shall be updated as the work progresses.

At a minimum, the Work Plan shall include the following requirements:

A. The Project shall be divided into 3 phases:

- Phase 1 shall consist of:
  - Conference with the Engineer and Contractor's Arborist to review tree protection procedures and responsibilities and install temporary tree protection fencing.
  - Performing utility test pits for utility locates to determine elevations of existing utilities at locations as determined by the Engineer in the field.

- Phase 2 shall consist of all work, except for landscaping, as identified by the Contractor that can be completed in total before winter suspension.
  - Phase 3 shall consist of all work that is not included in Phase 2.
- B. Phase 1 shall be completed prior to beginning any other construction within an individual phase other than removal of existing asphalt surfacing.
  - C. Activity in a Phase, including demolition and/or construction, shall not begin until after receiving written approval from the Engineer. Minor work necessary to prepare a Phase prior to active construction, such as utility relocation and similar construction, may take place outside of the current active Phase upon written authorization of the Engineer and only if the asphalt surfacing is maintained. Asphalt surfacing removed in any area in an inactive Phase shall be replaced with temporary asphalt or RAP surfacing within 48 hours of asphalt removal.
  - D. Incidental Work beyond the edge of the existing roadway, that does not impact traffic flow, is allowed in areas outside of the active construction Phase with written approval from the Engineer.
  - E. A transition between Phases shall be constructed in order to maintain a consistent, smooth, and safe grade for the traveling public between the new and old roadway surfaces. The transition work may require temporary regrading, pavement surfacing or curb and gutter. The actual limits of the transition area will be as directed by the Engineer. Work and materials necessary to provide transitions or temporary roadway surfacing including backfill, asphalt, or curb and gutter shall not be measured separately and shall be considered incidental to the pay item "Traffic Maintenance".
  - F. Disruption of driveways shall be kept to a minimum. Driveway surfacing shall not be removed until necessary for excavation or regrading. Contractor shall provide and maintain access to all adjacent properties and side streets in accordance with M.A.S.S. 10.04.10 and 10.04.12.
  - G. Contractor shall provide for emergency vehicle access at all times in accordance with M.A.S.S 10.04.10.
  - H. The Contractor shall protect existing surfaces located beyond the limits of the proposed improvements identified in the demolition plan.
  - I. Contractor shall maintain at least two lanes, two-way traffic along the areas of the project except within the active construction phase. Contractor shall not allow traffic delays in excess of 10 minutes per incident unless a full road closure is approved.
  - J. Contractor shall coordinate with utility companies performing other work in the project area as described in Section 10.04.17. The utility work schedule may require that the Contractor perform some work tasks, including implementing

the SWPPP Plan, removing fences, and installing temporary fences outside of the active Work zone.

- K. Contractor shall provide for uninterrupted utility service to nearby residents and shall accommodate trash collection, paper delivery and mail delivery in a manner satisfactory to the utility provider.
- L. Contractor shall provide proper notification to residents of impending construction activities. Contractor shall provide residents with contact name(s) and phone number(s) for Contractor personnel with responsibility to inform and coordinate with residents. The Contractor shall give written notice to the residents of any adjacent property having direct driveway or parking access to the project area, 48 hours in advance of installing curb and gutter, sidewalk, or approach aprons across the driveway, or driveways serving the adjacent property.

## **SECTION 10.06 LEGAL RELATIONS AND RESPONSIBILITIES**

### **Article 6.1 Laws to be Observed**

*Add the following paragraph:*

Owner is not aware of any contaminated material within the project limits. If such material is encountered, Contractor shall notify the Engineer immediately for direction. This will be treated as a changed condition, unless the contamination was caused by Contractor's operation.

### **Article 6.6 Permits**

*Add the following paragraphs:*

The Municipality plans to attain Temporary Construction Permits and easements from property owners for the purpose of constructing the proposed improvements on or near adjacent property. These permits are included in Section VI, Temporary Construction Permits and Easements.

The Contractor shall confine his operations to the existing right-of-way, existing easements, or designated Easements/Temporary Construction Permit areas. The Contractor shall comply with all special conditions, stipulations and restrictions thereof. Prior to the start of construction, the Contractor shall verify that all easements and permits necessary for construction of the project have been obtained. The Contractor shall have a copy of all permits on the job site at all times.

The Contractor shall comply with the terms of the Temporary Construction Permits. The permits are granted for the construction of the improvements as shown on the Drawings. The Contractor shall not use the permitted areas for any other construction activities including stockpiling materials, storing equipment, or performing equipment maintenance.

No private property within the permitting areas shall be damaged except as necessary to construct the proposed improvements and the Contractor shall

repair or replace damaged property to pre-project conditions to the satisfaction of the Engineer.

The Contractor shall order the Work such that the permitted areas are occupied only for brief intervals and that the permitted construction is progressing at a normal rate during the time the areas are occupied.

The Engineer reserves the right to limit the Contractor access and use of the permitted areas.

#### **Article 6.8     Safety**

*Add the following paragraphs at the end of this Article:*

The DOT&PF has developed a COVID-19 Management Plan that has been approved by the Alaska Department of Commerce, Community and Economic Development for utilization by DOT&PF contractors and consultants in compliance with the requirements of Health Mandates 10 and 12. A copy of this plan may be downloaded at:

[http://dot.alaska.gov/stwddes/dcsconst/assets/pdf/covid\\_response\\_master.pdf](http://dot.alaska.gov/stwddes/dcsconst/assets/pdf/covid_response_master.pdf)

The Contractor must either adopt the pre-approved COVID-19 Management Plan, or develop their own plan. Contractors who fail to do so may have work on their projects suspended until such time as they demonstrate compliance.

**B. DIVISION 20 STANDARD CONSTRUCTION SPECIFICATIONS FOR EARTHWORK**

**SECTION 20.01 GENERAL**

**Article 1.6 Subsurface Investigation**

*Add the following paragraph:*

The soils information for the project is located in Section V.

**SECTION 20.02 STORMWATER POLLUTION PREVENTION PLAN**

**Article 2.1 General**

*Add the following paragraph:*

Utilities: Utilities will be relocated/protected in place by others concurrently with construction of this project. All utility companies performing ground disturbing activity on the project shall be identified in the SWPPP. The Contractor shall be responsible for controlling sediment and erosion and stabilizing areas disturbed during all underground and overhead utility relocation/removal/protection work.

**Article 2.14 Construction Requirements**

**A. Prior to Construction**

*Add the following item:*

9. Coordinate with each utility company prior to submitting the SWPPP to determine scope of utility relocation/removal/protection work and schedule for relocation/removal/protection work. The SWPPP shall identify any ground disturbing activity in the project area by the utility company and shall include a detailed plan to prevent pollution and minimize erosion by the utility's work effort.

*Delete Section 20.03 Exploratory Test Pits in its entirety and replace it with the following:*

**SECTION 20.03 EXPLORATORY TEST PITS FOR UTILITIES**

**Article 3.1 General**

Work under this Section consists of furnishing an excavator, vector truck, operators, surveyors and all related supplies/materials in order to excavate and fill test pits for locating and surveying the location of utilities as directed by the Engineer prior to the commencement of below grade construction activities.

**Article 3.2 Materials**

Contractor shall furnish an excavator and vector truck capable of excavating to a maximum depth of twelve feet (12').

**Article 3.3 Construction**

Contractor shall excavate to locate utility as directed by the Engineer. Engineer shall be on site during duration of exploratory test pit for utility work. Excavation



shall be accomplished with vector truck unless otherwise directed by the Engineer. Contractor shall be responsible for coordinating with and calling for utility companies to mark the location of the utility in question prior to excavation.

Once utility is located and exposed, Contractor shall survey the horizontal and vertical location of the utility and provide the data to the Engineer. Excavated material shall be disposed of by the Contractor.

After excavation and location of the utilities is complete, Contractor shall backfill test pits with Type II Classified Fill and compact them so that the ground is returned to its original condition. If directed by the Engineer, Contractor shall segregate the cast piles to avoid contamination. Excavations in roadways shall be capped with AC pavement placed to match surrounding pavement.

Contractor shall locate utilities at locations as determined by the Engineer in the field.

#### **Article 3.4 Measurement**

Work performed under this Section is measured per hour for utility location completed as directed by the Engineer. Pay Item shall include all Work related to excavating test pits for locating utilities including coordination, preparation, excavation, survey, Type II Classified Fill and Backfill, compaction, AC pavement, traffic control, disposal of excavated materials and any other ancillary items necessary to complete the Work. Down time or delays caused by equipment failure is not included in the measurement and no additional payment shall be made.

#### **Article 3.5 Basis of Payment**

Payment for Work shall be in accordance with Division 10, Section 10.07 – Measurement and Payment, and shall include full payment for all Work described in this Section.

Payment shall be made under the following item:

ITEM	UNIT
Test Pit for Utility Locate	Hour

### **SECTION 20.04 CLEARING AND GRUBBING**

#### **Article 4.2 Construction**

*Delete this Article in its entirety and replace with the following:*

The Contractor shall do all clearing and grubbing necessary in the construction of roadways, sidewalks, landscaping, storm drainage, culverts, temporary creek diversion, utilities & other work shown on the Drawings. Prior to clearing and grubbing, the Contractor shall stake the clearing limits per Section 20.04, Article 4.2.A below. Trees, brush, roots and root mat removed in the clearing, and grubbing operations shall be hauled to a disposal site provided by the Contractor as delineated in Division 10, Section 10.04, Article 4.9 – Disposal Sites.

#### A. Clearing Limits

The Contractor shall clearly delineate the limits of clearing and grubbing using survey staking and tape. Limits of Clearing and Grubbing shall be as shown on the Drawings. After the site has been staked for clearing limits, the limits shall be field verified jointly by the Engineer, the Contractor and the Contractor's Arborist. No clearing shall begin until written approval for the clearing limits is given by the Engineer. Written approval for clearing will not be provided in advance of joint field verification of clearing limits. Damage associated with the removal of trees shall be kept to a minimum practical area within the approved limits. The Engineer reserves the right to adjust clearing limits by up to eight feet to save trees or up to eight feet to remove trees. The Engineer may elect to alter grades, or adjust the plans to save trees. No additional payment will be made for clearing limits adjusted in the field either during the initial staking or for additional clearing required beyond the limits shown on the Drawings as required for Contractor to complete the Work. The Contractor shall provide the Engineer a minimum of 24 hours of notice following delineation of the clearing limits and prior to starting clearing operations. Clearing operations shall not be commenced or continued in the absence of the Engineer.

For existing trees to remain, that are in close proximity to the clearing limits, the Contractor shall establish a Tree Protection Zone (TPZ) with temporary tree protection fencing as shown on the Drawings and as specified in Section 75.12. Ensure that the temporary fencing associated with tree protection zones is clearly visible throughout the duration of the project. Work required to delineate the clearing and grubbing limits shall be considered incidental to other work in this section and will not be paid for separately. Work required to establish tree protection zones and install temporary tree protection fencing is addressed in Section 75.12. Root pruning is addressed in Section 75.13.

All trees cut within the clearing limits shall be felled and dropped into the areas where clearing and grubbing is to occur. Trees shall not be felled into areas outside the clearing limits. All trees and brush shall be disposed of off-site.

Any trees removed outside of the approved clearing limits shall be replaced by the Contractor with new trees of similar species and of the largest practical size similar to the tree removed in increments of either 3-inch caliper (deciduous) or 6-foot height (evergreen). For example, a 12-inch caliper birch tree shall be replaced with four 3-inch caliper birch trees. A 20-foot tall spruce tree shall be replaced with four 6-foot tall spruce trees. All replacement trees shall meet specifications and shall be included in the maintenance period. Contractor shall not be entitled to any additional payment for trees replaced outside of the clearing limits.

Any trees larger than 4-inches in diameter, approved in advance for cutting and removal, shall be limbed and sawed into 4-foot lengths and

hauled off site and properly disposed of, unless directed by the Engineer to be neatly stacked on-property.

**B. Migratory Bird Treaty Act**

Tree removal scheduling must comply with the Migratory Bird Treaty Act. The habitat avoidance window for nesting song birds is May 1 to July 15. The window for raptors and ravens is April 10 to August 10. Additionally, Contractor shall notify the Engineer immediately if any active nests are found at any time during construction of the project.

**SECTION 20.07 REMOVAL OF SIDEWALK AND CONCRETE APRON**

**Article 7.4 Basis of Payment**

*Add the following pay item:*

ITEM	UNIT
Remove Sidewalk or Concrete Apron	Square Yard

**SECTION 20.09 REMOVAL OF PAVEMENT**

**Article 9.1 General**

*Add the following to the first paragraph after the word 'pavement':*

...or RAP

**Article 9.2 Construction**

*Delete the second paragraph and replace with the following:*

Contractor shall keep pavement including asphalt concrete and RAP which is designated for removal free from objectionable material (concrete, steel, etc.) and shall dispose of pavement, asphalt concrete, and RAP designated for removal at the Kloop Maintenance Station, 5701 Northwood Street. Contractor shall coordinate exact location and time of delivery with Paul VanLandingham with MOA Street Maintenance at 343-8372 or 317-7054. If the removed pavement material under this Section contains objectionable material, as identified by the Engineer, then Contractor shall dispose of this material in accordance with Division 10, Section 10.04, Article 4.9 – Disposal Sites at no additional cost to MOA.

**SECTION 20.10 EXCAVATION FOR TRAFFIC WAYS**

**Article 10.1 General**

*Replace the first paragraph with the following paragraph:*

The Work under this Section consists of furnishing all plant, labor, equipment, supplies, and material in performance of all operations pertaining to the excavation of unsuitable and/or surplus material for street, alleys, access roads, parking lots, sidewalks, curbs, gutter, and pathways.

## **SECTION 20.11 GRADING EXISTING SURFACES**

*Delete this Articles 11.3 and 11.4 in their entirety and replace it with the following:*

### **Article 11.3 Measurement**

Grading of existing surfaces as shown on the Drawings or as necessary to maintain positive drainage patterns shall be considered incidental to the contract and no separate measurement for payment shall be made.

## **SECTION 20.12 DEWATERING**

*Replace the first sentence of the fourth paragraph with the following:*

Water resulting from Contractor's dewatering effort may not be pumped or otherwise diverted into existing storm drains or creeks unless required permits, including, but not limited to, the Alaska Department of Environmental Protection Agency, are obtained by Contractor.

*Add the following paragraph at the end of the Article:*

If the Contractor elects to discharge dewatering water into the AWWU sanitary sewer system, the Contractor shall acquire and pay for an AWWU Wastewater Discharge Permit. Water discharged into the sanitary sewer system shall meet the requirements of the AWWU Wastewater Discharge Permit and the Anchorage Municipal Code Titles 26.50.050 and 26.50.060.

## **SECTION 20.13 TRENCH EXCAVATION AND BACKFILL**

### **Article 13.2 Trench Excavation and Backfill - Description**

*Add the following paragraph after the fifth paragraph:*

Payment to the Contractor for Work resulting from any trench excavation required for this project, whether paid for on a cubic yard, ton, or linear foot basis, shall not exceed the pay limits as shown on the Contract Drawings.

E. Locator Tape

*Delete the fourth sentence and replace with the following:*

The Contractor shall install the locator tape at least 18 inches but no more than 36 inches above the crown of the pipe.

## **SECTION 20.16 FURNISH BEDDING MATERIAL**

### **Article 16.1 General**

*Add the following to the end of the first sentence:*

... or as shown on the Drawings.

### **Article 16.2 Materials**

*Add the following:*

E. Self-Compacting Bedding

Self-Compacting Bedding material shall consist of crushed stone or crushed gravel, consisting of sound, tough, durable pebbles or rock fragments of uniform quality. Material shall be free from clay balls, vegetable matter, or other deleterious matters and with no adherent films or coatings of dirt, clay, dust, or other deleterious matter. Materials shall meet the following quality properties.

Item	Specification	Value
L.A. Wear, %	AASHTO T96	45, max
Degradation Value	ATM 313	50, min
Sodium Sulfate Loss, %	AASHTO T 104	9, max (5 cycles)
Fracture, %	ATM 305	90, min (single face)

Materials furnished by the contractor for use as Self-Compacting Bedding shall be graded within the limitations delineated below:

#### Self-Compacting Bedding

U.S. Std. Sieve	Cumulative % Passing (by weight)
½ inch	100
3/8 inch	90-100
No. 4	10-30
No. 8	0-8
No. 200	0-1

#### Article 16.5 Basis of Payment

*Add the following Pay Item:-*

ITEM	UNIT
Self-Compacting Bedding	Ton

#### SECTION 20.21 CLASSIFIED FILL AND BACKFILL

##### Article 21.2 Material

*Add the following paragraph after the second paragraph:*

Crushed waste glass (cullet) may be combined with soil-aggregate material and used in Type II or Type II-A classified fill and backfill. If glass cullet is incorporated, classified fill and backfill shall contain not more than ten percent (10%) by weight glass cullet smaller than three-eighths-inch (3/8"). Contractor shall ensure that glass cullet is uniformly blended with natural soil aggregate material prior to project delivery and placement. Glass cullet must conform to the specifications in SubArticle G – Glass Cullet of this Article. In addition to the normal gradation documentation for classified fill or backfill, when glass cullet is used the Contractor

shall provide documentation certifying that the glass cullet (1) is comprised only of eligible types of glass, (2) does not contain prohibited materials, (3) meets debris content requirement, and (4) meets blending percentage requirements to the Engineer prior to placement of the material.

*Add the following SubArticle G:*

#### **G. Crushed Waste Glass (Cullet)**

Glass cullet shall be free of prohibited or hazardous substances and the cullet shall contain no more than two percent (2%) debris as determined in AASHTO M318.

Eligible glass products from which glass cullet may be produced include:

- food and beverage container glass;
- plain ceramic or china dinnerware; and
- building window glass.

Prohibited glass products include:

- automobile windshields or other glass from automobiles;
- light bulbs of any type;
- porcelain products;
- laboratory glass; or
- television, computer, or other cathode ray monitor tubes.

#### **Article 21.3 Construction**

*Add the following after the last paragraph:*

Contractor shall not use classified fill and backfill incorporating glass cullet:

- within 4 feet (4') from the face of any embankment slope;
- within one hundred and fifty feet (150') of any surface water body;
- in embankment areas where culvert placement is required;
- in contact with any geotextile or geosynthetic material; or
- in any soil-aggregate base or subbase courses that are not covered by surfacing material.

#### **Article 21.4 Measurement**

*Add the following after the last paragraph:*

Use of glass cullet is incidental to the bid item Classified Fill and Backfill and no additional payments shall be made.

## SECTION 20.22 LEVELING COURSE

### Article 22.2 Material

*Add the following paragraph after the second paragraph:*

Crushed waste glass (cullet) may be combined with soil-aggregate materials and used in leveling course. If glass cullet is incorporated, leveling course shall contain not more than ten percent (10%) by weight glass cullet smaller than three-eighths-inch (3/8"). Contractor shall ensure that glass cullet is uniformly blended with natural soil aggregate material prior to project delivery and placement. Glass cullet must conform to the specifications in SubArticle D – Glass Cullet of this Article. In addition to the normal gradation documentation for classified fill or backfill, when glass cullet is used the Contractor shall provide documentation certifying that the glass cullet (1) is comprised only of eligible types of glass, (2) does not contain prohibited materials, (3) meets debris content requirement, and (4) meets blending percentage requirement to the Engineer prior to placement of material.

Upon written approval by the Engineer, recycled concrete aggregate (RCA) may be substituted for leveling course, on an inch for inch basis. RCA shall conform to this specification.

*Add the following SubArticles:*

#### D. Crushed Waste Glass (Cullet)

Glass cullet shall be free of prohibited or hazardous substances and the cullet shall contain no more than two percent (2%) debris as determined in AASHTO M318.

Eligible glass products from which glass cullet may be produced include:

- food and beverage container glass;
- plain ceramic or china dinnerware; and
- building window glass.

Prohibited glass products include:

- automobile windshields or other glass from automobiles;
- light bulbs of any type;
- porcelain products;
- laboratory glass; or
- television, computer, or other cathode ray monitor tubes.

#### E. Recycled Concrete Aggregate

RCA shall consist of a manufactured aggregate material and natural aggregate particles derived from the crushing, processing, and classification of Portland cement concrete construction debris recovered from roadways, sidewalks,



building, bridges and other sources, which conforms to AASHTO M-319 - Reclaimed Concrete Aggregate for Unbound Soil-Aggregate Base Course, and this specification. This material shall not contain deleterious substances in excess of the following amounts by mass-weight:

<u>Deleterious Material</u>	<u>%, By weight</u>
Bituminous concrete materials	5%
Brick or concrete masonry unit block	5%
Solid waste or hazardous materials	0%
Wood,metal,plaster,gypsum	0.1%

Both Coarse and Fine Aggregate shall conform to this specification and the quality requirements from AASHTO M-147 - Materials for Aggregate and Soil-Aggregate Subbase, Base, and Surface Courses. Additionally RCA shall have a minimum of seventy percent (70%) of particles with one or more mechanically fractured faces when the RCA is tested in accordance with AASHTO TP-61.

The Maximum Moisture Content is four percent (4.0%) for RCA.

The RCA Liquid Limit shall not exceed 35 when tested in accordance with AASHTO T-89 and the Plasticity Index of the fraction of RCA passing the No. 40 sieve shall not exceed 6 when tested in accordance with AASHTO T-90.

In accordance with ASTM 306, the percent of flat and elongated pieces in RCA shall not exceed eight percent (8%).

**Restrictions to Use of Recycled Concrete Aggregate:** RCA shall not be placed over a geotextile layer, gravel drain fields, drain field piping, subdrains, or open soil-lined stormwater retention or detention facilities, because soluble minerals rich in calcium salts and calcium hydroxide can be hydraulically transported from the recycled concrete aggregate. RCA is not approved for use within five feet (5') of metal culverts due to its high alkalinity and because recycled concrete aggregate in contact with aluminum or galvanized steel pipes can cause corrosion in the presence of moisture.

### **Article 22.3 Construction**

*Insert the following paragraph at the end of subArticle C. Placing:*

If used, any portion of the RCA which becomes segregated and/or develops zones of paste or crushed conglomerates during the distribution/compaction process shall be corrected by the Contractor. This correction process shall be conducted full depth and continue until the on-grade RCA meets this specification. The Engineer reserves the right to sample (or resample) the RCA for acceptance after it has been placed, watered and compacted.

*Add the following SubArticle F:*

#### **F. Crushed Waste Glass (Cullet)**

Contractor shall not use classified fill and backfill incorporating glass cullet:



- within 4 feet (4') from the face of any embankment slope;
- within one hundred and fifty feet (150') of any surface water body;
- in embankment areas where culvert placement is required;
- in contact with any geotextile or geosynthetic material; or
- in any soil-aggregate base or subbase courses that are not covered by surfacing material.

#### **Article 22.4 Measurement**

*Remove the first sentence and replace with the following:*

The leveling course shall be measured in tons of materials delivered and placed in accordance with these Specifications and adjusted for excess moisture as provided.

*Add the following after the last paragraph:*

Use of glass cullet or recycled concrete aggregate is incidental to the bid item Leveling Course and no additional payments shall be made.

### **SECTION 20.26 INSULATION**

#### **Article 26.2 Materials**

*Add the following sentence after the first sentence:*

Insulation board shall be provided in one inch-thick increments as required to meet the specified R-Value. Insulation board provided with fractional inch thickness shall be rejected.

### **SECTION 20.27 DISPOSAL OF UNUSABLE OR SURPLUS MATERIAL**

#### **Article 27.2 Construction**

*Add the following paragraph:*

If asbestos cement (AC) pipe is encountered and has to be removed from the trench and disposed of, the Contractor is hereby notified that Federal regulations governing the removal and disposal of asbestos are NESHAP 40 CFR, Part 61, Subpart M, and OSHA 29 CFR 1910. The Alaska Department of Environmental Conservation requirements include, but are not limited to 18 AAC 50, Air Quality Control Regulations, and 18 AAC 60, Solid Waste Management Regulations. The Alaska Department of Labor's governing regulations include, but are not limited to Occupational Safety and Health Standard, Subchapter 04.0103: Asbestos; 8 AAC 61.600.790 Article 8; and Alaska Workers Right to Know, AS 18.60. Asbestos cement pipe removed from the trench must be handled and disposed in accordance with the applicable Federal and State regulations. Asbestos cement pipe must be disposed of and declared at the Hiland Road Municipal Landfill.

## **Article 27.4 Measurement**

*Add the following paragraph:*

No separate payment shall be made for the removal, handling, and disposal of AC pipe. All Work associated with the removal, handling and disposal of AC pipe will be considered incidental to the Contract.

## **SECTION 20.28 RECONSTRUCT DRIVEWAY**

### **Article 28.3 Construction**

*Add the following in the second sentence of the third paragraph after the word "asphalt":*

(Class E)

*Replace the second sentence of the sixth paragraph with the following:*

Contractor shall notify and coordinate with the affected resident(s) a minimum of 48 hours prior to any necessary driveway work.

### **Article 28.4 Measurement**

*Delete this Article in its entirety and replace with the following:*

Driveway reconstruction shall not be measured separately for payment. Measurement and payment for unusable excavation, classified backfill, geotextile fabric, insulation, leveling course, PCC concrete, and asphalt will be made under the appropriate pay items. Measurement of these quantities shall be by survey measurement. No payment shall be made for temporary relocation of driveways or required driveway maintenance during construction. Removal and replacement of vegetation, structures, landscaping, planting beds, retaining walls and other private improvements, on private property or within the right-of-way, as is necessary to reconstruct driveways shall be considered incidental to the Project and no additional payment shall be made unless otherwise noted.

## **SECTION 20.30 SHORING, SHEETING, AND BRACING/SHORING AND SHEETING LEFT IN THE TRENCH AND PORTABLE**

### **Article 30.1 General**

*Add the following:*

The Work under this Section also includes all operations necessary to shore, brace and protect from harm existing utilities located within the project area. Utilities include underground facilities as well as overhead facilities and supporting structures.

The Work under this Section also includes all operations to furnishing and installing temporary or permanent sheeting, shoring, and bracing to support temporary excavations behind retaining walls to prevent any movement that might damage adjacent facilities, structures, or injure workman or the public.

## **Article 30.3 Construction**

### *Add the following:*

The shoring shall be sufficient to avoid impacting areas or facilities outside of the existing ROW, PUEs or TCPs. Methods and materials used to shore or brace utilities shall be reviewed and approved by the affected utility company before it is submitted to the Engineer for approval.

The Contractor shall prepare and submit to the Engineer for approval a Shoring Plan. The Shoring Plan shall be submitted a minimum of three (3) working days prior to work involving shoring. The Shoring Plan shall detail the methods and materials to be used for trench shoring as well as utility pole shoring, if necessary. The Plan shall be prepared by and sealed by a Professional Engineer registered in the State of Alaska.

When, in the opinion of the Engineer or affected utility company, shoring is inadequate, improper, or conditions exist such that damage may occur, the Contractor shall be notified in writing by the Engineer. Such notification shall be accompanied by a statement of corrective action. If the Contractor fails to promptly comply with such instruction, the Engineer may suspend any or all Work on the project until satisfactory corrective action is taken. Notification or lack of notification shall in no way relieve the Contractor of the responsibilities established in Section 10.04, Subsection 4.17 – Utilities.

## **SECTION 20.31 CONCRETE PAVER SAND**

### **Article 31.1 General**

This Section consists of material requirements pertaining to concrete paver sand which is for bedding sand and joint sand for the installation of interlocking concrete pavers. The Work required to furnish and install the material is covered under a separate Section.

### **Article 31.2 Background**

Bedding sand and joint sand used for concrete pavers provides the following main functions:

- Bedding for the concrete pavers
- Initial interlock and long-term interlock between the concrete pavers
- Structural support of the concrete pavers
- Drain below the concrete pavers

### **Article 31.3 Materials**

Sand used for concrete pavers shall meet the following requirements:

<b>Concrete Paver Sand Properties</b>		
Property	Allowable Value	Test Method
Durability	8% maximum	CSA A23.2-23A
Permeability	2.83 in/hr minimum	ASTM D 2434
Gradation	See Below table	ASTM C 33

<b>Concrete Paver Sand Gradation</b>	
Sieve Size	Allowable % Passing by Weight*
1/2-inch	----
3/8-inch	100
No. 4	95 to 100
No. 8	85 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10
No. 200	0 to 1

Concrete paver sand shall be moist but not saturated. Sand should have optimum moisture content at which maximum density can be attained prior to installation.

Contractor shall submit certified analysis and results of the required testing for Engineer's approval.

#### **Article 31.4 Measurement**

No separate measurement will be made for materials or Work in this Section.

#### **Article 31.5 Payment**

No separate payment shall be made for materials or Work in this Section, it will be incidental to other items of Work under this Contract.

**C. DIVISION 30 STANDARD CONSTRUCTION SPECIFICATIONS FOR  
PORTLAND CEMENT CONCRETE**

**SECTION 30.01 GENERAL**

**Article 1.3 Materials**

**B. Welded Steel Wire Fabric**

*Add the following paragraph:*

Welded Steel Wire Fabric shall be used in all 6-inch thick sidewalks and 6-inch thick colored concrete and shall be 6x6-W4.0xW4.0.

**SECTION 30.03 PORTLAND CEMENT CONCRETE SIDEWALKS**

**Article 3.4 Measurement**

*Add the following Sentences:*

Welded Steel Wire Fabric in 6-inch thick sidewalks shall be considered incidental to the P.C.C. Sidewalk Pay Item and no separate measurement or payment shall be made.

**SECTION 30.04 PORTLAND CEMENT CONCRETE CURB RAMPS**

**Article 4.1 General**

*Add the following Sentence:*

The Work covered under this Section shall also include construction of backing curb, as required.

**Article 4.2 Materials**

*Add the following Subsection:*

**C. Backing Curb**

Backing curb materials and installation shall conform to the requirements of MASS Section 30.02 Portland Cement Concrete, Curb and Gutter and Valley Gutter, the Drawings, details and these specifications. Location and height of backing curb shall be as required to retain the neighboring ground, as approved by the Engineer.

**Article 4.5 Measurement**

*Replace the second paragraph with the following:*

The Work paid for under "P.C.C. Curb Ramp (6" Thick)" shall be measured per each 6" thick curb ramp as furnished, constructed, finished and accepted in place for each curb ramp as detailed and shown on the Drawings. No separate payment shall be made for backing curbs as they will be incidental to the "P.C.C. Curb Ramp (6" Thick)" pay item. The Work paid for under "Detectable Warnings" is measured by the actual horizontal square footage of detectable warning tiles furnished, installed, and accepted in place.

*Add the following pay item:*

ITEM	UNIT
P.C.C. Curb Ramp (6" Thick)	Each

## **SECTION 30.05 STRUCTURES AND RETAINING WALLS**

### **Article 5.1 Description**

*Add the following sentence:*

The Work under this Section shall also consist of the construction of concrete driveways and elevated sidewalks as shown on the Drawings.

### **Article 5.2 Construction**

*Add the following sentence:*

Construct concrete driveways & elevated sidewalks per applicable Section 30.03 Portland Cement Concrete Sidewalks Article 3.3 Construction sections. When conflicts occur between Section 30.03.3 and this Section, the most stringent requirement shall apply.

### **Article 5.3 Measurement**

*In the first paragraph, replace the last sentence with the following sentence:*

Where sidewalks, elevated sidewalks and curb ramps are constructed adjacent and conjunction with retaining walls/structures, the sidewalks, elevated sidewalks and curb ramps concrete will be measured by neat line per cubic yard along with the retaining wall/structure. No separate measurement will be made for the sidewalk, elevated sidewalk or curb ramp under a different Section 30 pay item.

*Add the following paragraphs:*

Concrete driveways shall be measured by neat line per cubic yard per the dimensions shown on the Drawings.

Fence post sleeves cast into retaining walls shall not be measured for payment and shall be incidental to the P.C.C. Structure/Retaining Wall (Class) Pay Item.

## **SECTION 30.10 COLORED CONCRETE**

### **Article 10.2 Materials**

#### **A. Concrete**

*Replace the paragraph entirely with the following:*

Concrete mix for colored concrete shall conform to M.A.S.S. requirements for Class AA-3, normal weight concrete. Coloring shall be integral for the full depth of the concrete. It shall be added at the redi-mix concrete manufacturer plant per the manufacturer's instructions and uniformly distributed throughout the mix.

Red concrete shall be made from integral color pigment "Baja Red" RG-2827R 6% (of cement material) as manufactured by Interstar or approved equal. The red

color noted above may be modified by the Engineer. No separate payment shall be made if the red color is modified to color as requested and approved by the Engineer. Contractor shall submit color for approval by Engineer prior to ordering material.

*Add the following Subsections:*

**D. Sealer**

Sealer shall be a water-based acrylic sealer designed to provide UV protection, waterproofing, and chemical resistance. Sealer shall be manufactured by Interstar or approved equal.

**Article 10.3 Construction**

*Add the following paragraphs at the end of this Article:*

All colored concrete shall be sealed in accordance with the manufacturer of the sealer product. It may be necessary to seal the concrete approximately 28 days after the concrete has cured.

All vehicular traffic shall be kept off the colored concrete slab for the entire cure period. Pedestrian traffic may be allowed to travel on the concrete after 3 days upon approval by the Engineer. Concrete shall be protected against damage or defacement of any kind until it has been accepted by the Owner. Concrete which is not acceptable to the Engineer because of damage or defacement shall be removed and replaced at no additional cost to the Owner.

Install Welded Steel Wire Fabric in all colored concrete that is 6" thick.

**Article 10.4 Measurement**

*Add the following paragraph:*

Welded Steel Wire Fabric (where applicable), sealers and other miscellaneous items required for colored concrete shall be considered incidental to the Colored Concrete Pay Item and no separate measurement or payment shall be made.

**Article 10.5 Basis of Payment**

*Add the following pay items:*

ITEM	UNIT
Colored Concrete (Thickness, Color, Finish)	Square Yard

*Add the following New Section:*

**SECTION 30.12 REMOVE AND RESET INTERLOCKING CONCRETE PAVERS**

**Article 12.1 General**

The Work under this Section consists of providing all operations, labor and materials necessary to removing and resetting existing interlocking concrete pavers, including temporary storage and protection. Work also includes furnishing and installing edge restraints, concrete collars and all other

miscellaneous items as required for a successful installation. Any damaged pavers shall be properly disposed of and replaced at Contractor's expense. All Work shall be in accordance with these specifications and shall occur at the locations shown on the Drawings.

#### **Article 12.2 References**

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM C 936, Standard Specification for Solid Concrete Interlocking Paving Units.
  - 2. ASTM D 1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).
  - 3. ASTM D 2940, Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports.
- B. Interlocking Concrete Pavement Institute (ICPI): ICPI Tech Spec Technical Bulletins.

#### **Article 12.3 Submittals**

- A. Concrete pavers:
  - 1. If replacement pavers are required, provide one representative full-size sample of paver type, thickness, and color that matches most closely with the existing pavers. Any variations from existing shall be approved by the Engineer.
  - 2. Accepted samples become the standard of acceptance for the replacement work.
- B. Paver Installation Subcontractor:
  - 1. Current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.
  - 2. Job references for SubContractor from projects of a similar size and complexity. Provide Owner/Client/General Contractor names, postal address, phone, fax, and email address.

#### **Article 12.4 Quality Assurance**

Paver Subcontractor Qualifications:

- 1. Utilize an installer having successfully completed concrete paver installation similar in design, material, and extent indicated on this project.
- 2. Utilize an installer holding a current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.



## **Article 12.5 Delivery, Storage and Handling**

Deliver new replacement concrete pavers to the site in steel banded, plastic banded or plastic wrapped packaging capable of transfer by forklift or clamp lift. Banding shall be cushioned where it comes in contact with the pavers such as not to damage the edge of the pavers.

Unload pavers at job site in such a manner that no damage occurs to the product.

Storage and Protection:

1. Store removed and new paver materials protected such that they are kept free from mud, dirt, and other foreign materials.
2. Store concrete paver cleaners and sealers per manufacturer's instructions.
3. Cover concrete paver sand with a secure waterproof covering to prevent exposure to rainfall or erosion by wind.

## **Article 12.6 Project/Site Conditions**

Do not install sand or pavers during heavy rain or snowfall or during freezing conditions. Do not install frozen or saturated sand.

## **Article 12.7 Materials**

A. Paver Standard: Comply with quality specifications for solid concrete interlocking paving units as required by ASTM C 936 including:

1. An average compressive strength of 8,000 psi with no individual unit under 7,200 psi per ASTM C 140.
2. An average water absorption no greater than 5% with no unit greater than 7% in accordance with ASTM C 140.
3. Resistance to at least 50 freeze-thaw cycles with an average material loss not exceeding 1% in accordance with ASTM C 67.
4. Conformance to abrasion resistance tests.
5. Dimensional tolerances within 1/32-inch as measured with a steel straight edge.
6. Color to match existing pavers.

B. Concrete Paver Sand - Bedding and Joint Sand

Provide bedding and joint sand in accordance with these Specifications.

C. Edge Restraints

Provide edge restraints installed around the perimeter of all interlocking concrete paving unit areas or as directed by the Engineer. Edge restraints shall be Pave Edge Pro Rigid as manufactured by Pave Tech or approved equal.

## **Article 12.8 Construction**

### **A. Subbase Preparation**

All buried utilities, posts and below grade improvements shall be in place before installation of the concrete pavers.

Classified fill subbase to be graded and compacted to at least 98% Proctor density (per ASTM D698) for walkways and at least 98% modified Proctor density (per ASTM D1557) for road and driveway areas. The surface of the subbase shall be graded to a tolerance of 3/8" over a 10 foot straight edge.

### **B. Insulation and Geotextile**

Where shown on the Drawings, rigid board insulation and geotextile shall be placed on top of the subbase. The joints between the insulation boards shall be less 3/8-inch. Joints shall coincide with grade breaks where possible. The edges of the geotextile shall be turned up along the edge restraints so that bedding sand cannot fall into edge cracks in the insulation.

### **C. Edge Restraints**

All areas of concrete pavers shall have edge restraints.

All edge restraints shall be installed and stabilized before installation of concrete pavers. Concrete collars shall be provided around water key boxes and similar surface protrusions as shown on the Drawings or encountered in the field and directed by the Engineer.

The subbase shall be compacted to the required density up to the face of edge restraints.

### **D. Concrete Paver Bedding Sand**

Spread concrete paver bedding sand evenly over the subbase and screed to provide a smooth uncompacted surface with uniform density. The initial thickness of the sand will vary in order to account for compaction and settling of the concrete pavers. The final thickness of sand shall be 1-inch.

Use screed rails or edge restraints to produce the required sand thickness. Do not use bedding sand to fill depressions in the base surface.

The sand surface shall not be disturbed prior to setting interlocking pavers. The prepared surface shall be protected from foreign particles or moisture with a secure covering until just before paver installation.

Moisture of the bedding sand shall be carefully monitored to allow for adequate compaction. The sand should have moisture content between 6% and 8%.

### **E. Interlocking Pavers**

Reset pavers matching existing pattern found in the field. Place units hand tight without using hammers. Make horizontal adjustments to placement of laid pavers with rubber hammers and pry bars as required.

The alignment of the pavers shall be checked periodically to make sure they are oriented correctly. Joint (bond) lines shall not deviate more than  $\pm 1/2$  inch over 50 feet from string lines.

Provide joints between pavers between 1/16 in. and 3/16 in. wide. No more than 5% of the joints shall exceed 1/4 in. wide to achieve straight bond lines.

Fill gaps at the edges of the paved area with cut pavers. All cuts shall be made with a masonry saw.

All cut pavers shall be no smaller than one-third of a whole paver.

Keep skid steer and forklift equipment off newly laid pavers that have not received initial compaction and joint sand.

#### F. Compaction and Concrete Paver Joint Sand

Simultaneously spread, sweep and compact dry sand into joints until full. Do not begin compaction until joints are full of sand.

Use a low-amplitude plate compactor weighing approximately 300 pounds, providing a centrifugal force of 6,700 lbf at a frequency of 75 to 100 Hz to vibrate the pavers into the sand. The bottom surface of the vibratory compactor shall be covered with a plastic plate to avoid scratching the pavers.

Vibration compaction should start from the edges of an area and progress toward the center. After compacting the entire surface re-fill joints with sand and repeat. This will require at least 4 to 6 passes with a plate compactor.

Do not compact within 6 feet of unrestrained edges of paving units.

Compaction shall not begin before the edge restraints have cured and are secure in place.

Remove any cracked or damaged pavers and replace with new matching units.

All work within 6 feet of the laying face shall be left fully compacted with sand-filled joints at the end of each day or compacted upon acceptance of the work. Cover the laying face or any incomplete areas with plastic sheets overnight if not closed with cut and compacted pavers with joint sand to prevent exposed bedding sand from becoming saturated from rainfall.

Allow excess joint sand to remain on surface to protect pavers from damage during construction until ready for cleaning and sealing.

#### G. Cleaning

The surface of the pavers may need to be cleaned to remove oils, marks and foreign materials. High pressure spray equipment may be necessary. Special care should be taken to avoid removal of joint sand.

Cleaning agents may be necessary depending on the type of stains. Test the cleaner on a small patch area to make sure it doesn't result in discoloration. Application shall be in accordance with manufacturer's recommendations.

The cleaning should remove visible calcium carbonate (efflorescence).

Care should be taken to avoid overspray of cleaning agents onto nearby vegetation or property.

#### H. Paver Sealer

A liquid penetrating sealer shall be applied to the paver surface for long-term protection from stains and moisture.

The sealer shall have a low sheen or flat finish and should not make a significant impact to the skid resistance of the surface.

Care should be taken to avoid hazardous chemicals or fumes and overspray onto adjacent areas.

Follow all manufacturer's recommendation for surface preparation, application and curing of the product.

Sealer shall be a penetrating hydrophobic barrier similar to:

1. Saltguard as manufactured by Prosoco, Inc ([www.prosoco.com](http://www.prosoco.com))
2. Hydrozo 100 Plus as manufactured by BASF Construction Chemicals, LLC ([www.basf.com](http://www.basf.com))
3. SW-244 Water Repellent as manufactured by Chemical Products Industries, Inc. ([www.chemicalproductsokc.com](http://www.chemicalproductsokc.com))
4. Or approved equal.

For paver blocks to be installed in roadway areas and critical pedestrian traffic areas (near entrances) the sealer shall be applied to the paver off-site and allowed to cure completely before placement. This will allow the paver surface to be open to traffic sooner.

#### I. Pedestrian and Vehicular Traffic

Care should be taken to avoid any traffic on the paver until after curing times are completed.

The concrete paver surface shall be approved by the Engineer prior to allowing it to be used for pedestrian or vehicular traffic. Curing times must be observed for paver sealers and joint stabilizers.

### **Article 12.9 Field Quality Control**

The final surface tolerance from grade elevations shall not deviate more than plus or minus 3/8 inch under a 10 foot straightedge.

Check final surface elevations for conformance to the Drawings.

The surface elevation of pavers shall be 1/8 inch to 1/4 inch above adjacent drainage inlets, concrete collars or channels.

Lippage: No greater than 1/8 inch difference in height between adjacent pavers.

**Article 12.10 Protection**

The completed concrete paver surface shall be protected from damage due to subsequent construction activity on the site. Traffic shall not be allowed to flow over the paver surface until after it has been properly compacted, filled with joint sand, sealed in accordance with the manufacturer's recommendations and accepted by the Engineer.

**Article 12.11 Measurement**

No separate measurement will be made for materials or Work in this Section.

**Article 12.12 Basis of Payment**

No separate payment shall be made for materials or Work in this Section, it will be incidental to other items of Work under this Contract.

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

**D. DIVISION 40 STANDARD CONSTRUCTION SPECIFICATIONS FOR ASPHALT SURFACING**

**SECTION 40.01 GENERAL**

*Add the following Articles:*

**Article 1.7 Asphalt Price Adjustment**

This provision provides a price adjustment for asphalt material by:

1. an increase to the contract amount, or
2. a deduction from the contract amount.

The provision shall apply to asphalt concrete pavement which:

- is a major bid item as defined in M.A.S.S. Division 10, Section 10.04, Article 4.5 – Increased Quantities;
- is placed in the second or later year of the contract;
- conforms to M.A.S.S. Division 40, Section 40.06 – Asphalt Concrete Pavement; and
- is paid pursuant to M.A.S.S. Division 40, Section 40.06 – Asphalt Concrete Pavement

This provision shall only apply to cost changes in the asphalt material that occurs between the date of bid opening and the date the asphalt material is incorporated into the project.

The asphalt price adjustment shall only apply when there is more than a seven and one-half percent (7.5%) increase or decrease in the Alaska Asphalt Material Price Index from the date of the bid opening to the date the asphalt material is incorporated into the project.

As used in this Article, the Alaska Asphalt Material Price Index is calculated bi-monthly on the first and third Friday of each month, and will remain in effect from the day of calculation until the next bi-monthly calculation. The Alaska Asphalt Material Price Index is posted on the ADOT&PF's Statewide Materials website and is calculated according to the formula posted therein.

The Asphalt Price Adjustment (APA) payment is cumulative and is calculated with each progress payment. Asphalt material price index in effect on the last day of the pay period is used to calculate the price adjustment for asphalt material incorporated into the project during that pay period. The Municipality will increase or decrease payment under this contract by the amount determined with the following asphalt material price adjustment formula:

$$\text{APA} \{ \text{price}^{\text{increase/decrease}} \}^* = [(\pm \text{IPP} \mp \text{IB}) - (0.075 * \text{IB})] * Q * \% \text{AC}$$

Where,

**Q** = quantity of asphalt concrete pavement incorporated into the project during the pay period, in tons, and documented by weight tickets;

**IB** = Index at bid: the bi-monthly Alaska asphalt material price index in effect on date of bid, in dollars per ton;

**IPP** = Index at Pay Periods: the bi-monthly Alaska asphalt material price index in effect on the last day of the pay period, in dollars per ton; and

**%AC** = percentage asphalt cement content in the asphalt concrete pavement, as determined by the average asphalt cement content in project's asphalt concrete quality control testing.

\*Note: a negative price adjustment (APA) results in a price reduction to the Contract.

Method of measurement for determining quantity, Q, is the weight of asphalt concrete pavement material that conforms to M.A.S.S. Division 40, Section 40.06 – Asphalt Concrete Pavement and is incorporated into the project.

No asphalt price adjustment will be paid based on estimated quantities.

Contingent Sum payment shall be made on the following basis:

The final asphalt price adjustment on a project is the aggregate of the price adjustments paid on a project's respective progress pay estimates, i.e.,

$$\text{APA} = \text{APA}_1 + \text{APA}_2 + \dots + \text{APA}_n$$

Where  $n$  = partial payment estimate number.

## **SECTION 40.04 TACK COAT**

### **Article 4.5 Measurement**

*Delete this Article in its entirety and replace with the following:*

Tack Coat shall not be measured as it is considered incidental to pay Item 40.06 – Asphalt Concrete Pavement.

### **Article 4.6 Basis of Payment**

*Delete this Article in its entirety.*

**E. DIVISION 50 STANDARD CONSTRUCTION SPECIFICATIONS FOR  
SANITARY SEWERS**

**SECTION 50.06 EXISTING MANHOLE MODIFICATIONS**

**Article 6.3 Material**

*Add the following paragraph:*

AWWU will provide new sanitary sewer frames and lids for Contractor's use on this project per results from pre-construction inspection. Contractor will be responsible to coordinate pick up and pick up items from AWWU warehouse.

**Article 6.5 Measurement**

*Add the following paragraphs:*

The bid item Remove and Replace Manhole Cover and Frame shall also include removing and replacing grade rings and providing all miscellaneous materials as required to adjust the sewer manhole cover & frame to the finish grade elevation.

The bid item Remove and Replace Manhole Cone Section shall include removing and replacing the sewer manhole cone section, cover and frame, grade rings and providing all miscellaneous materials as required to adjust the cone section and the sewer manhole cover & frame to the finish grade elevation.

Remove existing sanitary sewer cleanout shall be measured per each unit removed and properly disposed of at a Contractor provided disposal site or if cleanout is salvageable it shall be delivered to the AWWU's Operation and Maintenance Yard.

**Article 6.6 Basis of Payment**

*Add the following pay items:*

ITEM	UNIT
Remove and Replace Manhole Cover and Frame	Each
Remove and Replace Manhole Cone Section	Each
Remove Existing Sanitary Sewer Cleanout	Each



**F. DIVISION 55 STANDARD CONSTRUCTION SPECIFICATIONS FOR STORM DRAIN SYSTEMS**

**SECTION 55.02 FURNISH AND INSTALL PIPE**

**Article 2.2 Material**

**A. General**

*Add the following:*

Concrete thrust blocks are required on all bends, tees, and deflections in storm drain pipe. Thrust blocks shall be in accordance with MASS Standard Detail 60-06.

*Add the following:*

**F. Grates**

Grates shall be installed at all storm drain pipe outfalls 12 inches and larger. Grates shall be equipped with security bolting to allow appropriate maintenance and prevent/minimize vandalism. Grates shall be either hinged or removable for maintenance access. Fabricate grate hinge to be bolted to the storm drain outfall pipe. Grate to have #4 rebar welded in a grid pattern with no more than 4-inches between bars. All metal to be zinc painted.

**G. Delineators**

Delineators shall be per section 70.21 Flexible Delineator.

**Article 2.3 Construction**

**A. Excavation and Backfill**

*Add the following:*

A trench box shall be used for all open trenching for storm drain pipe to limit the extents of excavation and impacts to adjacent property and vegetation. Furnishing and installing trench box shall be incidental to the project.

**Article 2.4 Measurement**

*Add the following:*

This Work includes the following MASS Work items:

- Mechanical Compaction

No separate payment for the above Work items will be made since they will be considered incidental to the Work included in this Section.

Furnishing and installing grates are considered incidental to the pay item and no separate payment shall be made.

Furnishing and installing thrust blocks is considered incidental to the Work described in this Section and no separate payment shall be made

## **SECTION 55.04 CONNECTIONS TO EXISTING MANHOLES OR CATCH BASINS**

### **Article 4.1 General**

*Add the following:*

The Work under this Section shall also include the performance of all operations pertaining to the construction required for connections to existing storm drain pipes.

### **Article 4.2 Construction**

*Add the following paragraph:*

When connection to an existing pipe to the new storm drain structure is called for on the Drawings, the Contractor shall minimize existing pipe removal. All additional existing pipe removal required beyond the length shown on the Drawings as required to connect the existing pipe to the new storm drain structure shall be removed and replaced by the Contractor at no cost to the owner. The Contractor shall reuse existing pipe or provide additional pipe (to match the existing pipe size and type and/or fittings as required to provide a connection acceptable to the Engineer.

### **Article 4.3 Measurement**

*Delete this Article in its entirety and replace it with the following:*

Connection to existing storm drain systems (pipes, manholes and/or catch basins) shall be measured as complete units in place.

Reconstruction of existing manhole penetrations for installation of new pipe and plugging existing unused holes in manhole from removed pipe is considered incidental to the pay item and no separate payment shall be made.

### **Article 4.4 Basis of Payment**

*Add the following Pay Item:*

ITEM	UNIT
Connect to Existing Storm Drain System	Each

## **SECTION 55.05 MANHOLES AND CATCH BASIN MANHOLES**

### **Article 5.1 General**

*Add the following sentence to the first paragraph:*

The Work also includes constructing bypass manholes complete with a gate, frames and cover.

### **Article 5.2 Materials**

*Add the following:*

C. Bypass Manhole and Gate

The bypass manhole shall meet the previous sub-sections of Article 5.2 and contain a bypass gate that shall meet the following criteria:

1. The bypass gate shall be provided by the following manufacturer as indicated on the Drawings:
  - a. CL-10 Canal Gate as manufactured by Waterman Valve, LLC, or approved equal.
  - b. The bypass gate must have a non-rising stem such that the handwheel operator remains in static operating position within manhole when opening and closing gate and not interfere with manhole cover.
  - c. The bypass gate must have a flat back frame (Type F) to attach to manhole mounting surface.
  - d. The bypass gate components must have galvanized finish.
5. The bypass gate mounting surface shall be cast by the manhole manufacturer.
6. The bypass gate shall be installed by the manhole manufacturer.
7. When the gate is open, the complete size of the outlet pipe must be unobstructed.
8. The bypass gate must have a lift mechanism that can be operated by a single person standing outside of the manhole using both hands.
9. Two access points shall be provided for the manhole as shown in the Drawings. One access point provides access to operate the lift mechanism for the bypass gate. The second access point provides personnel access for cleaning and maintenance. Each access point must comply with MASS standard details.

### **Article 5.3 Construction**

#### **B. Storm Drain Manholes and Catch Basin Manholes**

*Add the following paragraph after the first sentence in the first paragraph:*

Catch Basin Manholes shall be constructed as detailed in the Drawings with manhole access and catch basin functionality. All construction details and requirements not specified in the Drawings that are associated with Catch Basin Manholes shall be per M.A.S.S. Standard Details and Standard Specifications.

*Add the following:*

#### **C. Bypass Manhole**

Bypass Manhole shall be constructed as detailed in the Drawings. All construction details and requirements not specified in the Drawings

associated with the Bypass Manhole shall be per MASS Standard Details and Standard Specifications.

Through the Engineer, the Contractor shall schedule in-field operational testing of the completed bypass gate system with the MOA Street Maintenance personnel.

The Contractor shall provide operational testing of the bypass gate system to demonstrate compliance with all criteria listed in these special provisions. The tests shall be conducted in the field following completion of the bypass structures/diversion systems, and shall demonstrate the unimpeded access to the manhole, operation of the bypass gate, and to ensure the gate remains in the non-bypass position when unattended.

#### **Article 5.4 Measurement**

*Insert the following paragraphs immediately following the first paragraph:*

No separate measurement for payment will be made for multiple frames and/or covers on a single manhole.

Bypass Manhole shall be measured as a complete unit in place with a fully functioning bypass gate and shall include all appurtenances as shown on the Drawings.

Foundation material for storm drain structures shall not be measured for payment and shall be considered incidental to the contract.

#### **Article 5.5 Basis of Payment**

*Add the following Pay Item:*

ITEM	UNIT
Construct (Type) Bypass Manhole	Each

### **SECTION 55.09 CONSTRUCT CATCH BASIN**

#### **Article 9.4 Measurement**

*Add the following to the end of the first paragraph:*

Foundation material for catch basins shall not be measured for payment and shall be considered incidental to the contract.

### **SECTION 55.22 OIL AND GRIT SEPARATOR**

#### **Article 22.2 Description**

*Delete the second paragraph including the model and contact information and replace with the following:*

Contractor shall furnish and the following oil and grit separator as shown in the Drawings: Stormceptor model STC450i manufactured by:

CONTECH Engineered Solutions LLC

9025 Centre Point Drive, Suite 400  
West Chester, OH 45069  
Phone: 800-338-1122  
Fax: 513-645-7993

### **Article 22.3 Materials**

*Replace the last sentence of the first paragraph with the following:*

If foundation material is required, it will not be measured for payment and shall be considered incidental to the contract.

*Delete the third paragraph in its entirety and replace with the following paragraph:*

Contractor shall provide access to the Stormceptor Model STC 450i through a storm drain manhole frame and cover per MASS Standard Detail 55-4.

### **Article 22.4 Construction**

*Add the following paragraph:*

#### **1. Access**

At each round manhole access, Contractor shall provide ladder rungs on the side of the stormwater treatment structure in accordance with MASS Standard Details 50-6 and 55-4.

### **Article 22.5 Measurement**

*Replace the last sentence of the paragraph with the following:*

Foundation material, if required, is incidental to this Work item.

*Add the following New Sections:*

## **SECTION 55.27 STORM DRAIN BYPASS SYSTEM**

### **Article 27.1 General**

The Work under this Section consists of providing all planning, coordination, materials and operations pertaining to rerouting storm drainage flows around those portions of the storm drainage facilities to be replaced/reconstructed or as required to perform other necessary items of Work. The existing flows include those from groundwater base flow and from upstream collection system components that contribute to the subject storm drainage mains or manhole facilities.

### **Article 27.2 Construction**

The storm drainage flows shall be bypassed around sections of pipe or manholes designated for replacement/reconstructed or as required to perform other necessary items of Work on an as-required basis. The Contractor shall ensure that pumps and bypass lines are of appropriate capacity and size to

accommodate the anticipated storm drainage flows during the duration of all operations requiring such bypass.

The estimated peak flow for the 10-year, 24-hour storm event for the storm drain system impacted by the Work are as follows: 4.8 cfs.

Prior to construction, the Contractor shall submit to the Engineer a Storm Drain Bypass Plan detailing the scheduled deployment of pumps, hoses, pipes and other equipment necessary to maintain storm drainage flows during construction. Acceptance of Contractor's plan by the Engineer shall not relieve the Contractor of responsibility for the exercise of reasonable precaution, sound engineering judgment, prudent construction practices, overloading or misuse of existing or new structures, the adequacy and safety of such Works, and potential damage or undermining of existing or completed Work. Acceptance of the Storm Drain Bypass Plan by the Engineer does not relieve the Contractor of the responsibility for providing additional Storm Drain Bypass infrastructure if implementation of the accepted Storm Drain Bypass Plan does not result in a dry and stable construction environment throughout the project. Contractor's Storm Drain Bypass Plan shall be in accordance with MOA and State of Alaska regulations.

The pumping system shall be such that the hydraulic gradient both upstream and downstream of the piping being bypassed will not reach elevations that will cause damage to the properties being served. This will require close attention to the elevation of the upstream head needed to actuate the pumping cycle and the rate of discharge flow from the pumps. The Contractor shall be liable for all damages which result from storm drainage flows not properly maintained during the progress of the Work, including all damages to private property which occur as a direct or indirect result of inadequate control of the storm drainage flow while the storm drainage bypass operation is ongoing. The Contractor is reminded that after-hours pumping may require a permit to exceed the allowable noise levels. Should such permit not be available for certain locations, the lack of availability shall not be cause for claim for additional compensation but may be eligible for a time extension.

This Work may include the installation of temporary drainage facilities including pipes or manholes. The Contractor shall remove all temporary drainage facilities prior to completion of this project.

The bypass plan needs to consider ways to quickly accommodate a storm event by using the existing storm drain system. This may affect the pipe installation methods used. The bypass plan should minimize damage to pipes, structures and excavations and to reduce erosion and sedimentation.

### **Article 27.3 Measurement**

The method of measurement for furnishing and installing a storm drainage bypass system shall be lump sum for all Work described in this Section. There will be no separate payment for additional systems to accomplish bypass of flows. There will be no separate measurement or payment for the installation and

removal of temporary drainage facilities used for bypass flows since they will be considered incidental to this Work item.

**Article 27.4 Basis of Payment**

Payment for this Work shall be in accordance with Division 10, Section 10.07 - Measurement and Payment, and shall include full payment for all Work described in this Section.

Payment shall be made under the following unit:

ITEM

Storm Drain Bypass System

UNIT

Lump Sum

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

**G. DIVISION 60 STANDARD CONSTRUCTION SPECIFICATIONS FOR WATER SYSTEMS**

**SECTION 60.03 FURNISH AND INSTALL VALVES**

**Article 3.3 Material**

*Add the following paragraph:*

AWWU will provide new valve box top sections and lids for Contractor's use on this project per results from pre-construction inspection. Contractor will be responsible to coordinate pick up and pick up items from AWWU warehouse.

**Article 3.4 Measurement**

*Add the following paragraph after the fourth paragraph:*

The Remove and Replace Valve Box Top Section pay item shall be measured as complete units in place. The Remove and Replace Valve Box Top Section pay item includes removal and replacement of the valve box top section, dust pan and lid with new components. The Remove and Replace Valve Box Top Section pay item also includes furnishing and installing polyethylene encasement around the valve box top section as shown on MASS Standard Detail 60-8. The Remove and Replace Valve Box Top Section pay item shall also include adjustments of the valve box top section to the Engineer approved final elevation. Multiple adjustments of the valve box top section if required by Engineer shall not be measured separately regardless of the number of adjustments.

**SECTION 60.05 WATER SERVICE LINES**

**Article 5.3 Material**

*Add the following paragraph:*

AWWU will provide new valve box top sections and lids for Contractor's use on this project per results from pre-construction inspection. Contractor will be responsible to coordinate pick up and pick up items from AWWU warehouse.



## **H. DIVISION 70 STANDARD CONSTRUCTION SPECIFICATIONS MISCELLANEOUS**

### **SECTION 70.01 GENERAL**

*Add the following Article:*

#### **Article 1.3 Utility Facilities**

Prior to commencing any Work covered under this Division or impacting utility facilities the Contractor shall contact the Utility and obtain any permits, approvals, or other requirements as required by the Utility to complete any Work on or in the vicinity of their facilities.

### **SECTION 70.07 REMOVE PIPE**

#### **Article 7.1 General**

*Delete this Article in its entirety and replace it with the following:*

The Work under this Section consists of performing all operations pertaining to the removal and disposal or salvage of existing pipes including culverts (of whatever size of pipe or culvert encountered), when encountered in the excavation and/or as directed by the Engineer or as shown on the Drawings. Work also includes removal and disposal of existing heat trace and/or heat trace conduit within the pipes or culverts, when encountered in the excavation and/or as directed by the Engineer or as shown on the Drawings.

#### **Article 7.3 Measurement**

*Delete this Article in its entirety and replace it with the following paragraphs:*

Removal of pipes including culverts is measured per linear foot without regard to pipe or culvert size. Removal of heat trace and/or heat trace conduit shall not be measured as it will be incidental to the Remove Pipe pay item.

There will be no separate measurement or payment for the disposal of unusable excavation or installation of Type II Classified Fill and Backfill necessary for the removal of pipe as it will be considered incidental to this Work item.

### **SECTION 70.08 RESET FENCE**

#### **Article 8.1 General**

*Add the following sentences:*

Work under this Section shall also include the removal of existing fence materials, posts, foundations, slats, barbed wire and materials mounted on fences as indicated on the Drawings, and the proper disposal of material not reset. For fence materials and miscellaneous materials listed above that are not able to be salvaged and reset, Work shall also include providing replacement materials. Work shall also include replacing and installing the existing fence posts that are to be mounted on top of retaining walls with new fence posts and

sleeves as shown on the Drawings. Work shall also include removing and resetting gates as shown on the Drawings.

### **Article 8.3 Construction**

*Add the following paragraphs:*

Any excavation required in the removal of the fence posts or the foundation shall be considered incidental to this bid item. Contractor shall backfill the excavation with suitable, non-frost-susceptible material and compact it to 80% of maximum density or as directed by the Engineer. Method of foundation abandonment, if necessary and approved, shall be approved by the Engineer, prior to performing Work.

Any clearing and grubbing required for resetting the fence in a new location shall be considered incidental to this bid item.

Gate posts and foundations shall be protected in place where shown on the Drawings. Gate posts and foundations that are scheduled to be protected but are damaged by Contractor's operations, shall be replaced by Contractor including replacement of the foundation at no cost to Owner.

### **Article 8.4 Measurement**

*Add the following paragraphs:*

Removal and proper disposal of existing fence materials, posts, foundations, slats, barbed wire and materials mounted on fence shall be measured by length in linear foot without regard to fence type.

Reset fence materials and miscellaneous materials including but not limited to posts, foundations, slats, barbed wire and materials mounted on fence that require replacement if they cannot be salvaged or are damaged by the Contractor's operations shall be incidental to the Remove and Reset Fence pay item. Remove and Reset Fence pay item shall also include the replacement and installation of existing fence posts that are to be mounted on top of the retaining walls including the sleeves and no separate payment shall be made.

Signs mounted directly to fence shall be reinstalled on reset fence in the same location as originally mounted. Removal and remounting signs on fence shall be considered incidental to the Remove and Reset Fence pay item.

Remove and Reset Gate shall be per lump sum for all work to remove existing vehicular gate (double swing gate) across AWWU driveway, store and protect gate during driveway construction, and reinstall gate in original location including any new gate materials and all hardware necessary for a complete installation. Signs mounted directly to the gate or on gate posts shall be reinstalled on reset gate in the same location as originally mounted. Removal and remounting of signs on gate and gate posts shall be considered incidental to the Remove and Reset Gate pay item.

## **Article 8.5 Basis of Payment**

*Add the following Pay Item:*

ITEM	UNIT
Remove Fence	Linear Foot
Remove and Reset Gate	Lump Sum

## **SECTION 70.10 TRAFFIC MARKINGS**

### **Article 10.3 Construction**

#### **F. Application**

Methyl Methacrylate

*Delete the first sentence in paragraph b and replace it with the following.*

Contractor shall apply methyl methacrylate pavement markings at a minimum thickness of 125 mils.

## **SECTION 70.11 STANDARD SIGNS**

### **Article 11.1 General**

*Delete the third sentence and replace it with the following:*

Work under this Section shall also include the removal and relocation, as well as the removal and proper disposal of existing signs, sign posts, markers and foundations, as indicated on the Drawings.

### **Article 11.2 Materials**

*Add the following paragraph:*

Contractor shall provide shop drawings of each sign to be installed for Engineer to review prior to fabrication. Shop drawings shall show all dimensions and fonts to be used. Signs fabricated or installed prior to attaining approval of sign shop drawings from the Engineer shall be removed and replaced with approved signs at no cost to Owner.

### **Article 11.3 Construction**

*Add the following paragraphs:*

Where existing signs designed to be removed and relocated are attached to the tops of existing fence posts and/or face of existing fences, the relocated sign shall be installed on a new fence post or face of fence at the location designated in the drawings or as directed by the Engineer in the field.

Payment for signs with double sided panels shall only be paid and measured for one side of the double sided sign panel.

## **Article 11.4 Measurement**

*Add the following paragraph:*

New fence post attachments, bases, and all hardware necessary to install relocated signs from the tops of existing fence posts and/or face of existing fences shall be considered incidental to the Remove and Relocate Sign pay item.

## **SECTION 70.12 TRAFFIC MAINTENANCE**

### **Article 12.1 General**

*Add the following paragraphs:*

Contractor shall provide MOA Signal Maintenance personnel with all required Traffic Control whenever they are called to the project to locate signal components located within the vehicular traveled way.

Utilities will be relocated/protected in place by others concurrently with construction of this project. Contractor shall incorporate traffic control required for utility work in the Traffic Control Plan. The Contractor will be responsible for implementing and maintaining traffic control during relocation/protection of utilities in the project area.

### **Article 12.5 Materials**

*Delete items 8 and 9 and replace with the following items:*

8. Portable Concrete Barriers. Provide portable concrete barriers that conform to ADOT&PF Standard Drawing G-46.11 and are equipped with warning lights.
9. Work Zone Pavement Markings. Work zone pavement markings shall be either paint with glass beads or preformed marking tape.
10. Street Sweeping. Street sweeper shall be capable of collecting and storing materials for later disposal rather than ejecting them to the shoulder of the road.
11. Watering. Watering trucks shall be capable of providing both a high-pressure water stream to flush the pavement and a light-water spray to control dust.
12. Plastic Safety Fence. Use 4-foot high construction orange fence manufactured by one of the following companies or an approved equal:
  - e. "Safety Fence" by Services and Materials Company, Inc., 2200 South "J" Street, Elwood, Indiana, 46036. Phone (800) 428-8185.
  - f. "Flexible Safety Fencing" by Carsonite, 1301 Hot Springs Road, Carson City, Nevada, 89706. Phone (800) 648-7974.
  - g. "Warning Barrier Fence" by Plastic Safety Systems, Inc. P.O. Box 20140, Cleveland, Ohio, 44120. Phone (800) 662-6338.

## **Article 12.6 Public Notice**

*Delete the first paragraph, inclusive of the list of local officials and transportation organizations, and replace with the following:*

The Work Site Traffic Supervisor shall give notices of changes, delays, or lane/road closures to the following local officials and transportation organizations including, but not limited to:

1. Alaska Court System ..... 264-8232
2. Alaska State Troopers ..... 428-7200
3. Alaska Travel Industry Association..... 929-2842
4. Alaska Trucking Association..... 276-1149
5. Anchorage Chamber of Commerce..... 272-2401
6. Anchorage Fire Department ..... 267-4950
7. Anchorage Police Department..... 786-8500
8. Anchorage Public Transportation ..... 343-8253, 343-8386
9. ASD Pupil Transportation ..... 742-1207
10. Commercial Vehicle Enforcement..... 365-1203
11. Local Emergency Medical Services..... 267-4950
12. Local Schools and Universities..... Varies
13. Local Solid Waste Utilities ..... 563-3717
14. MOA Parks and Recreation ..... 343-4297
15. U.S. Postal Service..... 266-3261

## **SECTION 70.18 CHAIN LINK FENCE**

### **Article 18.2 Materials**

*Add the following paragraph:*

#### **L. Fence Slats**

Fence slats shall be flat, tubular plastic with three center supports for extra strength. Slats shall be 2-3/8-inches wide and 6-feet long. Color of slats shall be Redwood to match existing fence slats surrounding AWWU property.

### **Article 18.4 Construction**

*Add the following paragraph:*

#### **H. Fence Slats**

Fence slats shall be installed in all Chain Link Fence.

## **Article 18.5 Measurement**

*Add the following to the end of the first paragraph:*

Furnishing and installing fence slats shall be considered incidental to the Chain Link Fence pay item and shall not be measured separately for payment.

*Add the following New Sections:*

## **SECTION 70.22 REMOVAL/DISPOSAL AND/OR SALVAGE OF OBSTRUCTIONS**

### **Article 22.1 General**

The Work under this Section consists of performing all work associated with removal/disposal and/or salvage of obstructions encountered in the ROW and/or on private property within the work zone. Obstructions may include but are not limited to the following features: jersey barriers, retaining walls, timbers, landscaping rock, planters, landscape edging, landscaping pavers, lawn ornaments, refuse, debris, abandoned vehicles, shopping carts, etc.

### **Article 22.2 Construction**

Contractor shall remove existing obstructions as shown in the Drawings or as directed by the Engineer in the field. In each case and where applicable, the Contractor and the Engineer shall coordinate with the property owner if they are the owners of the obstructions. If property owner wishes to retain items that are currently in the ROW and not allowed to be re-installed in the ROW, Contractor shall place items on owner's property. If owner does not want items placed on property or installed back in ROW, Contractor shall dispose of removed items at a Contractor-supplied location. Materials to be salvaged shall be carefully removed, protected and placed on property.

It shall be the Contractor's sole responsibility to notify the Engineer of existing damage to items to be salvaged prior to removal. Unless otherwise directed by the Engineer in writing prior to removal, if any salvaged items are damaged, the Contractor shall replace those items in kind including matching type, color and manufacturer.

### **Article 22.3 Measurement**

All Work described in this section as necessary to complete this Work item shall be measured by lump sum and shall consist of all labor, materials, coordination, equipment and personnel required for removal/disposal and/or salvage of obstructions encountered in the ROW and/or on private property within the work zone. If any salvaged items are damaged, the Contractor shall replace those items in kind including matching type, color and manufacturer and no separate payment shall be made.

### **Article 22.4 Basis of Payment**

Payment for this work shall be in accordance with Division 10, Section 10.07 – Measurement and Payment, and shall include full payment for all Work described in this Section.

Payment shall be made under the following unit:

ITEM

UNIT

Removal/Disposal and/or Salvage of Obstructions

Lump Sum

## **SECTION 70.23 BANNERS**

### **Article 23.1 Description**

This work shall consist of furnishing and installing Banners comprised of aluminum sandwich board with applied graphics.

### **Article 23.2 Materials**

Banners: 1/8" aluminum sandwich board/ double sided aluminum composite with a polyethylene core as manufactured by DiBond or approved equal. Color shall be black/black.

Graphic Film: Scotchcal IJ35-10 as manufactured by 3M or approved equal.

Overlaminant: Scotchcal 8510 Matte Overlaminant 8510 as manufactured by 3M or approved equal.

### **Article 23.3 Construction**

The banner designs as shown on the plans will be provided to the Contractor by the Engineer. Graphics will be provided in an Adobe Illustrator CS5.5 version file. All materials and finished signs are subject to inspection and acceptance in place. All surfaces exposed to weathering shall be free of any defects in the coating that may detract from the general appearance or color match. The finished banners shall be clean and free from all chatter marks, burrs, sharp edges, and delaminated matte lamination. No repairs shall be made to the face sheet. Graphic film and overlaminant shall be affixed to aluminum sandwich material per the manufacturer's specifications. All banners not conforming to these specifications shall be rejected.

All bolts shall be trimmed and ground smooth so that there are no projections larger than 1/8". If steel bolts are substituted, isolation washers shall be provided between all steel and aluminum surfaces.

### **Article 23.4 Measurement**

The Banners shall be measured per each complete and installed.

Provide the designated quantity of surplus banners and deliver them to MOA Pole Yard near East 3rd Avenue and Orca Street during regular business hours. Contact Paul VanLandingham (343-8372) 48 hours before delivery.

### **Article 23.5 Basis of Payment**

Payment for this work shall be in accordance with division 10 – Standard General Provisions, Section 10.7 – Measurement and Payment of these Specifications, and shall include full payment for all work described in this Section.

Payment to be made under:



ITEM	UNIT
Banner A	Each
Banner B	Each
Furnish Surplus Banner (Designation)	Each

## **SECTION 70.24 TEMPORARY FENCING**

### **Article 24.1 General**

The Work covered under this Section shall consist of all operations pertaining to furnishing, installing and removing temporary fencing at properties where fencing has been removed as indicated on the Drawings.

### **Article 24.2 Materials**

Temporary fencing shall be six (6) feet in height and consist of new or previously used chain-link fencing materials in good condition. Posts shall be galvanized steel pipe of diameter to provide rigidity and be suitable for anchoring with base plates or inserting in precast concrete blocks. Fabric shall be woven galvanized steel wire mesh provided in continuous lengths and wire tied to prefabricated pipe-framed fence panels. Gates shall be fabricated of the same material used for fencing and be capable of manual operation by one person. Gates shall be lockable.

Where removed fencing includes barbed wire and arms at the top of the fence, temporary fencing shall include barbed wire supported on arms at a 45-degree angle similar in appearance to the removed fence.

### **Article 24.3 Construction**

Fence and gates shall be installed at locations where existing fencing has been removed. At least one gate shall be installed for each property for which temporary fencing is provided. Fencing shall extend the full width of the property and prevent ingress and egress of personnel and animals through, under or around the fence. Temporary fence shall be installed immediately outside the construction area within 12-hours of removal of existing fences. Temporary fencing shall remain in place until permanent fence is installed.

Contractor may temporarily install the removed barbed wire and arms on the temporary fence until the permanent fence is installed.

### **Article 24.4 Measurement**

All work described in this Section pertaining to the furnishing, installing, maintaining and removing Temporary Fencing shall be measured for payment per linear foot of temporary fence installed. There shall be no additional payment made for relocating temporary fencing on the same property during construction as may be necessary to accommodate construction activities or to facilitate property use by the property owner. Barbed wire and support arms, where



required, shall not be measured for payment and shall be considered incidental to the Temporary Fencing pay item.

**Article 24.5 Basis of Payment**

Payment of this Work shall be in accordance with MASS, Division 10 Standard General Provisions, Section 10.07 Measurement and Payment as amended in these specifications and shall include full payment for all Work as described in this Section.

Payment shall be made under the following unit:

ITEM

UNIT

Temporary Fencing

Linear Foot

**G. DIVISION 75 STANDARD CONSTRUCTION SPECIFICATIONS FOR  
LANDSCAPING IMPROVEMENTS**

**SECTION 75.02 LANDSCAPING**

**Article 2.1 General**

**A. Scope of Work**

*Add the following paragraph:*

The Work shall also include an extended maintenance period and all equipment, labor, materials and transportation necessary to Prune Existing Trees, and to maintain the Landscape and Moose Protection Fence.

1. Installation of Tree Protection Zone Fences shall be per Section 75.12 Tree Protection Zone Fence.
2. Installation of Moose Protection Fence shall be per Section 75.14 Moose Protection Fence.

**Article 2.2 Materials**

*Delete and replace the existing Paragraph with the following:*

**3. Rock Mulch**

Rock mulch shall be three to four inch (3" to 4") washed rock, uniform in size. All fines shall be screened from the aggregate within a one-quarter inch (1/4") tolerance. Rock mulch shall be composed of rocks that match existing mulch in adjacent planting beds. The material shall be free of organic and inorganic debris and trash. The Contractor shall provide a 5 gallon sample to the Engineer for approval prior to procurement or installation.

Rock mulch is not incidental to plantings and shall be measured per Article 2.6 Measurement and paid per Article 2.7 Basis of Payment.

**Article 2.3 Construction**

*Delete and replace the existing Paragraph with the following:*

**M. Pruning and Repair**

For new plantings, the only pruning allowed at planting shall be removal of dead, damaged, or broken branches and roots. Pruning shall conform to the American National Standard for Tree Care Operation, ANSI A300. No pruning paint or other wound dressing shall be used.

**Article 2.4 Maintenance**

**A. General**

*Add the following:*

1. Extended Maintenance: The plant establishment period shall be extended one year. The Contractor shall furnish all labor, materials, supplies and equipment required to maintain the Landscape and the Moose Protection Fence one year beyond the standard one-year plant establishment period from the date of acceptance of the initial planting operations. Contractor shall conduct periodic visual inspections and repair any damage due to moose, other wildlife or vandalism immediately. The Engineer may notify the Contractor about damages in which case the repairs shall be made within 24 hours. The Contractor shall repair and replace all materials damaged or destroyed within the scope of the Work, regardless of cause.
2. The Contractor shall also furnish all labor, materials, supplies and equipment required remove the Moose Protection Fence two years from the date of acceptance of the initial planting operations.

#### **Article 2.5 Landscaping Acceptance**

*Delete the second paragraph and replace with the following:*

A Landscaping Acceptance Inspection of the project will occur after completion of the Plant Establishment Period. Engineer shall verify that Contractor performed maintenance functions as identified in Article 2.4 – Maintenance of this Section. Additional conditions governing Landscaping Acceptance of the planted and seeded areas are that, in the opinion of the Engineer, all plants are in a live, uniform, and sound and healthy and flourishing condition; free of disease, insect infestation and physical damage, and free of weeds, rubbish and construction debris. The Engineer shall verify that all Moose Protection Fencing has been removed as identified in Article 2.4 Maintenance of this Section. If the Engineer does not accept the plantings and removal of Moose Protection Fencing, the Contractor shall correct all deficiencies. All costs associated with correcting the deficiencies and extending the Plant Establishment Period shall be paid by the Contractor without additional cost to the Owner.

Should required corrections not be made within thirty (30) days after the initial Landscaping Acceptance Inspection, the Contractor shall be assessed liquidated damages per Division 10, Section 10.05, Article 5.27 – Liquidated Damages, until all Work is complete and accepted by the Engineer.

#### **Article 2.6 Measurement**

*Add the following paragraph:*

Rock mulch shall be measured in cubic yards of material delivered and placed in accordance with the depth and locations shown on the Drawings. No measurement will be made for rock mulch beyond the limits and depths unless authorized by the Engineer in writing.

*Add the following pay item:*

ITEM	UNIT
Extended Maintenance	Lump Sum
Rock Mulch	Cubic Yard

*Add the following New Sections:*

## **SECTION 75.12 TREE PROTECTION ZONE FENCE**

### **Article 12.1 General**

The Work under this Section includes but is not limited to all equipment, labor, and transportation necessary to provide and remove Tree Protection Zone Fences as specified herein. Tree Protection Zone Fences are required where all work abuts mature tree plantings that are to remain in place. Tree Protection Zone Fences are to be removed when construction is complete.

Tree Protection Zone (TPZ): Tree Protection Zones shall be per Section 75.02.

The Contractor is responsible for the verification of all existing utilities or requesting locates of underground utility lines.

### **Article 12.2 Submittals**

- A. Certification: provide a certification from a certified arborist that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- B. Maintenance Recommendations: From certified arborist, for care and protection of trees affected by construction during and after completing the Work.

### **Article 12.3 Quality Assurance**

- A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to project site during execution of tree protection and trimming.
- B. Arborist Qualifications: An arborist certified by ISA or licensed in the jurisdiction where Project is located.
- C. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."
- D. Pre-installation Conference: Before tree protection operations begin, meet with the Engineer, Arborist to review tree protection procedures and responsibilities and determine tree protection fencing limits on site.

- E. Prior to any excavation, tree protection limits will be staked by the Contractor and approved by the Engineer.
- F. Provide written acceptance from a certified arborist that trees indicated to remain and protected by Tree Protection Zones have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

#### **Article 12.4 Materials**

- A. Topsoil: Topsoil shall be per Section 75.03
- B. Temporary Construction Fencing: 4' High, high visible orange safety fence.
- C. Steel T-Posts: with pointed end and reflective safety caps, green color.

#### **Article 12.5 Construction**

- A. Construction Fencing: Install fencing around Tree Protection Zones to protect remaining trees and vegetation from construction damage. Maintain temporary fence and remove when construction is complete.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations. Root pruning shall be per Section 75.13 ROOT PRUNING.
- C. Do not store construction materials, debris, or excavated material inside Tree Protection Zones. Do not permit vehicles or foot traffic within Tree Protection Zones; prevent soil compaction over root systems.
- D. Ensure that branches of trees within the Tree Protection Zone are not broken by equipment.
- E. Maintain Tree Protection Zones free of trash.
- F. Do not allow fires within Tree Protection Zones.

#### **Article 12.6 Tree Repair**

Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to Contractor Arborist's written instructions.

#### **Article 12.7 Measurement**

Measurement for Temporary Tree Protection Fence shall be by the linear foot.

#### **Article 12.8 Basis of Payment**

Payment for the Work shall be in accordance with Division 10, Section 10.07 – Measurement and Payment, and shall include full payment for all Work described in this Section.

Unit cost payment shall be made on the following basis:

ITEM

Temporary Tree Protection Fence

UNIT

Linear Foot

**SECTION 75.13 ROOT PRUNING**

**Article 13.1 General**

The Work under this Section includes but is not limited to all equipment, labor, and transportation necessary to provide root pruning as shown on the Drawings and specified herein. Root Pruning is required where all work abuts mature tree plantings that are to remain in place.

The Contractor is responsible for the verification of all existing utilities or requesting locates of underground utility lines.

**Article 13.2 Materials**

Burlap: A strong woven fabric made of jute, hemp, or flax fibers.

**Article 13.3 Quality Assurance**

- A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign an experienced, qualified arborist to project site during execution of tree protection and trimming.
- B. Arborist Qualifications: An arborist certified by ISA or licensed in the jurisdiction where Project is located.

**Article 13.4 Construction**

A. Workmanship and Procedure

Root Pruning shall be performed when below ground construction occurs within 16 feet of a mature tree. Mature trees are trees that are 4" diameter at breast height (DBH) or greater in size. Root Pruning shall be done to a depth of 18 inches. The distance to prune away from the base of a tree shall be determined by providing 1 foot of horizontal distance from the trunk of the tree for every 1 inch of DBH of that tree.

- 1. All roots 1" in diameter or greater shall be cut clean with a root pruner, a sharp saw, and/ or hand pruners.
- 2. Roots must not be pruned or removed from more than one side of a tree.
- 3. All pruned roots are to be covered by wet burlap and kept moist for the duration of time that the root is exposed.
- 4. Topsoil shall be used to backfill the excavated area around the root.

B. Maintenance

Keep the burlap that is covering pruned roots moist for the duration of time that the root is exposed.

## **Article 13.5 Measurement**

Measurement for Root Pruning shall be by the linear foot.

## **Article 13.6 Basis of Payment**

Payment for the Work shall be in accordance with Division 10, Section 10.07 – Measurement and Payment, and shall include full payment for all Work described in this Section.

Unit cost payment shall be made on the following basis:

ITEM	UNIT
Root Pruning	Linear Foot

## **SECTION 75.14 MOOSE PROTECTION FENCE**

### **Article 14.1 General**

The work under this section includes but is not limited to all labor, materials, transportation, and maintenance necessary to furnish and install temporary fencing for moose protection as shown on the drawings and specified herein. Moose Protection Fence is required around all new individual deciduous trees and/or deciduous tree groupings.

The Contractor is responsible for the verification of all existing utilities or requesting locates of underground utility lines.

### **Article 14.2 Materials**

Posts: Steel T- posts with pointing, green color, 9' height.

Fabric: Fabric shall be 1-3/4 inch opening black nylon netting with 5/16" black polyester rope border. Use metal ties to secure to posts.

### **Article 14.3 Construction**

#### **A. Workmanship and Procedure**

Moose protection fencings shall be erected immediately following the tree installation. The moose protection fencing shall be place at the outside edges of individual deciduous trees and/or all deciduous tree groupings. All deciduous trees shall be enclosed within the fencing without damaging branches or allowing branches to protrude.

#### **B. Detail Drawings:**

All assemblies specified herein shall be installed in accordance with the drawings.

#### **C. Maintenance:**

Maintenance of the Moose Protection Fence shall be per Section 75.02.

### **Article 14.4 Measurement**

Measurement for Moose Protection Fence shall be by the linear foot.

#### **Article 14.5 Basis of Payment**

Payment for the Work shall be in accordance with Division 10, Section 10.07 – Measurement and Payment, and shall include full payment for all Work described in this Section.

Unit cost payment shall be made on the following basis:

ITEM

Moose Protection Fence

UNIT

Linear Foot

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)



## **J. DIVISION 80 STANDARD CONSTRUCTION SPECIFICATIONS FOR TRAFFIC SIGNALS AND ILLUMINATION**

### **SECTION 80.01 GENERAL**

#### **Article 1.1 Scope of Work**

*Add the following at the end of the first paragraph:*

The General requirements of this Section shall apply to all Sections within Division 80.

#### **Article 1.2 Regulations and Codes**

*Add the following to the first paragraph:*

For all Division 80 items furnish listed or labeled components, including individual components as well as complete assemblies, whenever those components are available with the listing or labeling.

### **SECTION 80.04 FOUNDATIONS**

#### **Article 4.1 General**

*Delete the first paragraph and add the following:*

Install cast-in-place Portland Cement Concrete foundations for traffic signal poles, signal pedestal poles, and pedestrian pushbutton posts. Install driven pile foundations for luminaire poles.

*Replace Article 4.5 in its entirety and replace it with the following:*

#### **Article 4.5 Driven and Helical Pile Foundations**

Driven and helical pile foundations shall not be used for signal poles.

Contractor shall supply driven and helical pile foundations of the size and length indicated. Contractor shall ensure that the top surface of the anchor plate is three inches (3") above finished grade at luminaire pole location or as indicated in the Drawings. For fixed base pile caps, 1/8" plasma cut from edge to hole is acceptable for plasma cut bolt holes.

After welding the pile cap adapter and anchor plate to the driven or helical steel pile, Contractor shall cold galvanize all non-galvanized surfaces including the pile cap, the pile cap adapter, anchor plate, and the top three feet (3') of the steel pile including pile cap and anchor plate. Contractor shall furnish galvanization that complies with Federal Specification DoD-P-210354A (Galvanizing Repair Spec) and is U.L. listed. Contractor shall prepare steel surfaces and apply the cold galvanizing compound in accordance with the manufacturers' recommendations. Five days prior to applying the cold galvanizing compound, Contractor shall provide the Engineer a copy of the manufacturers' instructions.

##### **A. Helical Pile Foundation**

Helical piles 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 screwing motion, and are used to resist applied axial (compression and tension) and lateral loading, and overturning moments from structures, within designed settlement, uplift, or deformation tolerances.

The minimum installed length of the pile from the helix to the top of the helical pile shall be such that the required installation depth is achieved as shown on the Drawings.

Helical piles shall provide a minimum axial load-carrying capacity of 30,000 lbs each.

#### 1. Helical Pile Shaft

- a. Cold formed, welded or seamless steel pipe conforming to ASTM A500 Grade B.
- b. Minimum torque capacity of 80,000 ft-lbs.
- c. Minimum Yield Strength of 42 ksi.
- d. Shaft end connections between sections shall be via square shaped coupling welded to each end.

#### 2. Helices

- a. Helices shall have a minimum thickness of  $\frac{3}{4}$  inch and provide a 6-inch pitch.
- b. Steel shall conform to ASTM A572, Grade 50.
- c. Helices shall be welded to pipe sections using a continuous fillet weld on both sides of helix-to-pipe connection. Leading edges of helices shall be sharpened to minimize soil disturbance during installation.

#### 3. Connection Hardware

- a. Bolts: ASTM A325 Grade L-7 or approved equal.
- b. Nuts: ASTM A63.

#### 4. Finish

- a. All helical pile anchor surfaces (exterior, interior of pipe, etc.), adapters, extensions, couplings, fittings, bolts, attachment assemblies, and all other appurtenances shall be hot-dipped galvanized in accordance with ASTM A123, and ASTM A153.

#### 5. Installation

- a. Installation torque shall be measured using monitoring equipment as part of the installation unit or as a separate in-line device. Calibrated torque monitoring data shall be submitted for review by the Engineer. Torque shall be monitored and logged during the entire installation for each helical pile at 1-foot intervals.
- b. Helical piles shall be installed true and plumb at the locations shown on the Drawings. Helical piles 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.

- c. Sufficient downward pressure shall be applied as to advance the helical pile. Helical pile shall not be pushed directly into the soil.
- d. Installation shall be executed in a smooth, continuous threading manner, at the rate of advancement equal to one pitch per revolution as to minimize disturbances to the soil during installation. The maximum rate of rotation shall not exceed 20 revolutions per minute.
- e. Helical piles shall be installed to the minimum depth and minimum torque as shown on the Drawings.

*Add the following to the end of the Article:*

Contractor shall pre-excavate holes with vactor truck when proposed pole location is within 10-feet of an existing buried utility. Excavation depth shall be a minimum of 12-inches below the anticipated depth of the utility before installing pile. Excavation shall be backfilled and compacted after pile installation complete.

#### **Article 4.6 Measurement**

*Append the following to the last paragraph:*

All survey and staking work required to locate the foundations shall be incidental to the work. All work to pre-excavate for driven pile foundations shall be considered incidental to the work.

#### **Article 4.7 Basis of Payment**

*Add the following pay items:*

ITEM	UNIT
Helical Pile Luminaire Pole Foundations	EA
Helical Pile Luminaire Pole Foundation Extension	LF
Cast-In-Place Light Column Foundation	EA

### **SECTION 80.08 JUNCTION BOXES**

#### **Article 8.4 Measurement**

*Append the following to the last paragraph:*

All survey and staking work required to locate the junction boxes shall be incidental to the work.

### **SECTION 80.13 BONDING AND GROUNDING**

#### **Article 13.1 General**

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*Add the following after the first paragraph:*

In junction boxes, provide enough slack in the grounding conductors to ensure the conduits remain securely bonded to ground should the conduits move for whatever reason.

## **SECTION 80.17 CONTROLLER ASSEMBLIES**

### **Article 17.4 Special Auxillary Equipment**

*Replace the Article 17.4 item A in its entirety with the following:*

#### **A. Pan-Tilt-Zoom (PTZ) camera system.**

1. Furnish an Axis Q6000-E Mk II 60 Hz Camera with the following specifications:
  - a. Micro SDXC card with a capacity of 256GB and speed class U3 or V30
2. Include T91 mounting accessories.

### **Article 17.9 Measurement**

*Add the following after the first paragraph:*

The Pan-Tilt-Zoom Camera system will be measured as units, complete and in place; including labor, hardware, camera system and cabling required to have a functioning unit.

### **Article 17.10 Basis of Payment**

*Add the following bid item:*

ITEM	UNIT
Pan-Tilt-Zoom Camera System	Each

## **SECTION 80.18 VEHICLE DETECTORS**

*Replace the Article 18.3 in its entirety with the following:*

### **Article 18.3 Radar Detectors**

Any substitutions of cables, material or equipment in this Article must be submitted to the Traffic Engineer for testing and approval prior to installation.

System Hardware. For vehicle detection, provide a Wavetronix digital wave radar vision system that consist of the following components:

A. Stop bar detector (SBD). For all approaches, indicated on the Drawings, provide a Wavetronix SmartSensor Matrix® above-ground stop bar detector (SBD) that will detect all vehicles, including bicycles for reliable and accurate presence detection.

- (1) Physical Properties. The SBD shall not exceed 5 lbs. in weight. The SBD shall not exceed 14 in. x 12 in. x 4 in. in its physical dimensions. All external parts of the SBD shall be ultraviolet-resistant, corrosion resistant, and protected from fungus growth and moisture deterioration.
- (2) Enclosure. The SBD shall be enclosed in a Lexan EXL polycarbonate. The enclosure shall be classified "f1" outdoor weather ability in accordance with UL 746C, watertight according to the NEMA 250 Standard, and conform to test criteria set forth in the NEMA 250 standard for type 4X enclosures.
- (3) Power. The SBD shall consume less than 10 W, operate with a DC input between 9 VDC and 28 VDC, and have an onboard surge protection.
- (4) Communication. The SBD shall have two half-duplex RS-485 com ports support for dedicated detection comms; and for configuration, verification, or traffic display without disrupting detection comms. The SBD shall support the upload of new firmware into the SBD's non-volatile memory over Ethernet communication port. Both communication ports shall support all of the following baud rates: 9600, 19200, 38400, 57600 and 115200 bps.
- (5) Operating Conditions. The SBD shall maintain accurate performance in all weather conditions, including: Rain, freezing rain, snow, wind, dust, fog and changes in temperature and light, including direct light on sensor at dawn and dusk. SBD operation shall continue in rain up to 1 in. (2.5 cm) per hour; capable of continuous operation over an ambient temperature range of -40°F to 165°F, and a relative humidity range of 5% to 95% (non-condensing).
- (6) Testing. Each SBD shall be Federal Communications Commission (FCC) certified under CFR 47, Part 15, section 15.249 as an intentional radiator and a FCC certification shall be displayed on an external label on each SBD according to the rules set forth by the FCC. The SBD shall also be tested under IEC 61000-4-5 class 4 and NEMA TS2-2003 Testing. The SBD shall comply with the applicable standards stated in the NEMA TS2-2003 Standard. Third party test results shall be made available when requested.
- (7) Manufacturing. The SBD shall be manufactured and assembled in the U.S.A.

- (8) Documentation. SBD documentation shall include an instructional training guide, a comprehensive user guide, as well as an installer quick-reference guide and a user quick-reference guide. The SBD manufacturer shall supply the following documentation and specification test results at the time of the bid submittal:
- i. FCC CFR 47 certification
  - ii. IEC 61000-4-5 class 4 test report
- (9) Warranty. The SBD shall be warranted free from material and workmanship defects for a period of two years from date of shipment.
- B. Click 650 cabinet interface device (CIB). For each signal cabinet, indicated in the Drawings, provide a Click 650 that will provide a streamlined communication for SmartSensor Matrix, Smartsensor Advance, and Smartsensor Advance Extended Range to traffic controllers in one compact case. This module communicates directly to the controller through SDLC, and supports contact closure devices as well. It also provides power, surge protection, and Ethernet connectivity for all sensors.
- (1) Included components.
    - i. Click 650, AC power cord, Extra fuse, Terminal blocks for attaching to cable, and 4 jumper cables
  - (2) Physical.
    - i. Weight: 4.9 lbs.
    - ii. Physical dimensions: 7.8 in. × 10.3 in. × 3.9 in.
    - iii. Ambient operating temp: -29°F to 165°F
    - iv. Humidity: up to 95% RH
  - (3) Mounting.
    - i. Shelf-mount
  - (4) Power.
    - i. Power supply voltage: 90 to 260 VAC
    - ii. AC frequency: 50–60 Hz
    - iii. Max power: 75 W @ 80°C

iv. 24 VDC output on sensor connectors

(5) Connections and Communications.

- i. One RJ-45 10/100 Ethernet jack
- ii. One SDLC port
- iii. Four terminal block connectors on back of device for connecting to sensors
- iv. Four RJ-11 jacks on faceplate of device for connecting to contact closure devices
- v. Four communication ports on faceplate
  - 1. DB-9 port for communicating via RS-232
  - 2. Two RJ-11 jacks for communicating via RS-485
  - 3. USB mini-B connector
  - 4. T-bus port

(6) Testing.

- i. Complies with the applicable standards stated in the NEMA TS2- 2003 Standard
- ii. FCC-compliant
- iii. Passes manufacturer's test before shipping

(7) Warranty.

- i. Two-year warranty against material and workmanship defect

C. SmartSensor Manager Matrix (SSMM) software

D. SmartSensor Mount

- (1) Provide a Wavetronix SmartSensor mounting assembly.
- (2) The mounting assembly shall provide at least two axes of rotation to ensure proper installation.

- i. The mounting assembly shall be able to support at least a 15-lb. load.
  - ii. The mounting assembly shall feature a symmetric hole pattern that mates with fixed and rotational SmartSensor back plates.
  - iii. The mounting assembly shall have two contact points with the pole.
  - iv. The mounting assembly shall be slotted for 3/4" banding.
- (3) The mounting assembly shall be constructed of 0.1875" thick or thicker aluminum with 316 stainless steel hardware. The mounting assembly shall be powder coated for oxidation resistance.
- E. Installation Kit. Provide a Wavetronix Install Kit, for use while installing and configuring Wavetronix SmartSensor products, and communication connectivity devices to the Wavetronix Click! products.
- F. Smartsensor Cable Junction Box. For each radar sensor, provide a Wavetronix in-line terminal strip junction box enclosure to connect the Wavetronix 6-conductor pigtail cable to the APT Matrix 2 homerun cable. Enclosure shall readily fit inside the signal pole base via the pole base handhole. Enclosure to meet IP 66 and NEMA 4X ratings.
- G. Wavetronix SmartSensor 6-conductor cable. For each Wavetronix SmartSensor Matrix® above-ground stop bar detector (SBD) indicated in the Drawings provide a cable of the length indicated in the Drawings. Cable to run from the detector to an in-line terminal strip enclosure at the pole base handhole.
- H. Wavetronix SmartSensor Matrix Type 2 Home Run cable. For each Wavetronix SmartSensor Matrix® above-ground stop bar detector (SBD) indicated in the Drawings provide a cable of the length to run from the in-line terminal strip enclosure at the pole base handhole to the Click 650 unit inside the controller cabinet. Provide 15' of neatly coiled slack cable in the base of the controller foundation
- I. Wavetronix SmartSensor 6-port SDLC interface panel. For each signal cabinet, indicated in the Drawings, provide a 6-port SDLC interface panel (WS-SDLC-IP6), a 3' SDLC cable (WS-SDLC-TS2-3) and 7' SDLC cable (WS-SDLC-TS2-7) to provide data communication between the new radar detection and existing controller and controller cabinet equipment.



## **SECTION 80.23 LUMINAIRES**

*Delete this Section in its entirety and replace with the following:*

### **Article 23.1 General**

Provide the luminaire(s) specified on the Drawings. Furnish luminaires with the light distribution and light source specified, i.e. color enhanced high pressure sodium, metal halide, or induction lamps or light emitting diodes (LEDs). Furnish lamps of the wattages specified and/or the number of LEDs to be furnished. The light sources shall feature a color rendering index of at least 65 as determined by their manufacturer.

Provide LED luminaires that produce light with a color correlated temperature (CCT) specified on the Drawings.

After the luminaire poles have been installed and plumbed, the Contractor shall level each luminaire to ensure it provides the light distribution used to design the system.

When allowed on the Drawings, the Contractor may furnish approved equal luminaires. The Contractor shall submit the following documents for approval:

- A. Luminaire specifications, including dimensions, and a photograph,
- B. Electronic photometric data in Illuminating Engineering Society (I.E.S.) format, preferably by a link to the manufacturer's web site, including the photometric identification number(s),
- C. The input and output of a lighting analysis program,
- D. The input shall include each lamp or LED bars lumen output, lumen maintenance factors, and each luminaire's photometric identification number, drawing pole number, mounting height, spacing, and offset from the traveled way.
- E. The output shall verify each luminaire provides the average light levels, uniformity ratios, and veiling luminance criteria for the roadways, pedestrian facilities, and intersections listed on the Drawings.
- F. Manufacturer's Warranty information for the substituted fixture. Ten year minimum is required.

### **Article 23.2 Light Distribution**

The luminaires furnished shall provide the light distribution(s) specified on the Drawings in the following terms as defined by the Illuminating Engineering Society (IES). The distribution along a roadway (longitudinal) shall be short, medium, or long; the luminaire cutoff angle shall be full cutoff for all fixtures and the distribution across a roadway (lateral) shall be Type 1, Type 2, Type 3, Type 4, or Type 5.

Prior to installation, Contractor shall check the socket position in the luminaire to verify it corresponds to the setting indicated in the instructions for the light distribution type shown on the Drawings.

### **Article 23.3 Luminaire Features**

Luminaires shall feature:

1. Corrosion-resistant enclosures with space for the driver or ballast and a gray or silver paint finish.
2. Third party certification for use in wet locations.
3. Terminal blocks for attaching the illumination tap conductors.
4. Optical components free of substances that affect photometric performance, e.g. paint.
5. Housings cast with no provision for a photoelectric control receptacle, except those luminaires specified to be furnished with a photoelectric control.
6. Gaskets that are securely held in place and are composed of material capable of withstanding the temperatures generated by an operating luminaire on the hottest day.
7. 7-pin twist-lock receptacle compliant with NEMA standard C136.41 to provide ON/OFF and dimming control with shorting cap.

#### **Article 23.4 Measurement**

Luminaires will be measured as units complete, leveled, and in place, including all labor, equipment, and materials to provide a complete and functioning unit.

Spare Luminaire will be measured as complete units delivered to the MOA Orca Street Pole Yard (Contact: Paul VanLandingham at 343-8372 for specific delivery instructions).

No measurement for payment will be made until a functional field test has been completed in accordance with Section 80.16, Article 16.2 Field Tests.

#### **Article 23.5 Basis of Payment**

Payment of this Work shall be in accordance with Division 10 Standard General Provisions, Section 10.07 Measurement and Payment, of this Specification, and shall include full payment for all Work described in this Section.

Payment shall be made under the following units:

<u>ITEM</u>	<u>UNIT</u>
Luminaire (No. of LED's) (Longitudinal) (Lateral)	Each
Spare Luminaire (No. of LED's) (Longitudinal) (Lateral)	Each

### **SECTION 80.29 PEDESTRIAN LIGHT COLUMN**

#### **Article 29.1 General**

The Work under this Section consists of all labor, equipment, and materials necessary to install pedestrian light columns, as indicated on the Drawings and as specified herein.

Install the necessary conduit, Type 1A J-box and conductors to the electrical supply designated on the Drawings.

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The foundations for pedestrian light columns shall conform to the requirements of Section 80.04, Foundations.

For the item Pedestrian Light Column provide Phillips Lumec SoleCity LED Light Column as specified in the Drawings or equal.

#### **Article 29.2 Spare Pedestrian light column**

Spare Pedestrian Light Column will be measured as complete units delivered to the MOA Orca Street Pole Yard (Contact: Paul VanLandingham at 343-8372 for specific delivery instructions).

#### **Article 29.3 Measurement**

The Pedestrian Light Column shall be measured as a single unit, complete, and in place including all hardware and all wiring within the pole. No measurement for payment will be made until a functional field test has been completed in accordance with Section 80.16, Article 16.2 Field Tests.

Method of measurement for furnishing spare pedestrian light column shall be per each unit delivered and accepted.

#### **Article 29.4 Basis of Payment**

Payment for this Work shall be in accordance with M.A.S.S. Section 10.07 Measurement and Payment, as amended in these specifications, and shall include full payment for all Work as described in this Section.

ITEM	UNIT
Pedestrian Light Column	Each
Spare Pedestrian Light Column	Each

**\*\*\*END OF SPECIAL PROVISIONS\*\*\***

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**APPENDIX A**

**ENVIRONMENTAL PERMITS**

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

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**APPENDIX B**

**UTILITY CLEARANCE REQUIREMENTS**

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

April 2014

## ELECTRICAL FACILITY CLEARANCE REQUIREMENTS

Enclosed is a copy of the Chugach Electric Association, Inc. (Chugach) Electrical Facility Clearance Requirements policy. Periodically, copies of the policy are mailed out to various companies and agencies whose activities may bring their personnel in close proximity to electrical facilities. Chugach distributes copies of this policy in an effort to help minimize and identify potential hazards for construction personnel and the general public. In addition, we are concerned with preventing possible damage to our electrical facilities and disruption of electrical service to our customers. Please note that the Electrical Facility Clearance Requirements publication is now on Chugach's web site at: [www.chugachelectric.com](http://www.chugachelectric.com). Click on the "Customer Service" tab and go to either "For your Home" or "For Your Business", click on "Electrical Facility Clearance Requirements" (April 2014).

For your additional information, Alaska State Statute ("Article 6. Locating Underground Facilities") has been included as an attachment.

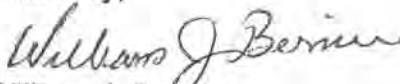
**Please thoroughly read and understand the entire document. It could save your life or the life of your employees, and the general public. We request that particular attention be paid to the following provisions:**

(Paragraph B. 2.) "Under no circumstances will Chugach allow any of its underground cable(s) to remain energized after it has been exposed, unless it is protected by supplementary mechanical protection approved by Chugach or unless a *qualified person* is on site at all times".

(Paragraph H. 7.) "Chugach defines a *qualified person* as a journeyman lineman who holds a current Certificate of Fitness in the Journeyman Lineman category issued by the State of Alaska". These two provisions clearly emphasize Chugach's position relating to the exposure and approach to energized facilities.

Chugach strongly recommends that prior coordination with us, either during the design phase of a project or prior to the start of actual construction, can help eliminate or minimize conflicts. If you have questions please contact the Line Operations Division at 762-7655 and your call will be directed to the appropriate department for assistance.

Sincerely,



William J. Bernier

Director, Substations and Line Operations

Enclosures

cc: Statewide Bonding Companies; State of Alaska OSHA Inspector; State of Alaska Electrical Inspector; Alaska General Contractors



## CHUGACH ELECTRIC ASSOCIATION, INC.

### ELECTRICAL FACILITY CLEARANCE REQUIREMENTS FOR CONSTRUCTION OR MAINTENANCE NEAR ELECTRICAL FACILITIES

Chugach's concern for the safety of non-qualified personnel working adjacent to its electrical facilities, its concern for the public in general, and its requirement that only *qualified personnel* under the employ of *qualified electrical contractors* handle electrical facilities such as cable, poles, padmounted equipment, etc., is based upon the following considerations:

- The potential for serious injury and resulting liability is extremely high when dealing with voltages as high as 230,000 volts on overhead and underground lines.
- Certain types of equipment, particularly cable, can easily be damaged by improper handling. For example, when cable is hit or improperly suspended (common during excavation adjacent to cables), the scraped, cut, or over-stressed insulation will almost always result in premature failure of the cable. The highest risk to personnel is a failure while the cable is being handled during excavation or construction. Undetected construction damage may result in a subsequent cable failure with consumer outages for periods of up to 48 hours during winter conditions.
- The stability of overhead pole lines or padmounted equipment is jeopardized with improper excavation and backfill. This may expose the public, as well as maintenance or construction personnel, to high voltages and create consumer power outages.

The above concerns can be minimized or eliminated by the use of properly trained, licensed, and certified electrical outside linework personnel. The National Electrical Safety Code (NESC), the United States Occupational Safety and Health Administration (OSHA) and the Alaska State OSHA support this position as well as the clearances addressed herein.

NESC, Section 2, *Definitions of Special Terms* defines "qualified" as "*Having been trained in and having demonstrated adequate knowledge of the installation, construction, or operation of lines and equipment and the hazards involved, including identification of and exposure to electric supply and communication lines and equipment in or near the workplace.*" Only qualified persons are permitted to handle or work on or adjacent to energized electrical facilities. This includes not only overhead pole lines but also padmounted and underground facilities. Within the NESC, two rules specifically address the need for qualified persons to perform work on or near energized facilities:

Rule 420B1 states, "*Employees whose duties require working on or in the vicinity of energized equipment or lines shall perform only those tasks for which they are trained, equipped, authorized, and so directed. Inexperienced employees shall:*

*(a) work under the direction of an experienced and qualified person at the site; and (b) perform only directed tasks."*

Rule 420B4 states, *"Employees who do not normally work on or in the vicinity of electric supply lines and equipment but whose work brings them into these areas for certain tasks shall proceed with this work only when authorized by a qualified person."*

OSHA 29CFR 1910.269 contains the training and documentation requirements for a qualified person.

OSHA 29CFR 1926.550 (a) (15) addresses crane operations near electrical lines. For lines rated over 50 kilovolts (kV), minimum clearance between the lines and any part of the crane or load must be 10 feet plus 0.4 inch for each 1 kV over 50 kV -- or twice the length of the line insulator, but never less than 10 feet.

CHUGACH SYSTEM VOLTAGES	
Normal Voltage (Phase-to-Phase)	Minimum Clearance Required
Operations Near High-Voltage Overhead Power Lines to 50 kV	10 Feet
Over 50 kV to 200 kV	15 Feet
Over 200 kV to 350 kV	20 Feet

Specifically, 29CFR1926 (a) (15) (iv) requires a "Safety Observer" during crane operations if the equipment is operating where it is difficult for the operator to maintain the desired clearance to the overhead power line(s) by visual means. Alaska Statutes (AS) Sections 18.60.670 through Section 18.60.695 govern placement and operation of equipment near overhead electrical lines or conductors. 29CFR1926, Subpart P addresses the specific requirements involved with trenching operations. These include prior notice to utility companies, prior location of utility facilities, and proper supports once the facilities are exposed. Furthermore 29CFR Sections 1910.180; 1910.333; 1926.416; 1926.550; and 1926.651 regulate activities relative to job site electrical facilities.

Again, Chugach's concern for the safety of all personnel affected by work adjacent to its energized facilities has led to the development of the attached policy.



## **ELECTRICAL FACILITY CLEARANCE REQUIREMENTS**

The following requirements have been developed to help provide a safer work site to those personnel working adjacent to Chugach's electrical facilities and to protect Chugach facilities that are located in the area of work being done by State or Municipal entities and private construction and maintenance projects.

### **A. NOTIFICATION**

It is recommended that Chugach be informed of construction/maintenance activities as early as possible in the design process and be included in timely plan reviews. Any work that needs to be performed on Chugach facilities must have prior Chugach approval.

#### **1. Overhead Facilities**

Any work in the proximity of overhead power lines shall be preceded by a call to Chugach at 762-7659 or 762-7669, 48 hours in advance, to notify the Line Construction and Maintenance Department of the planned work and be in compliance with OSHA 29CFR1926 (a) (15), and AS 18.60.670. If equipment, tools, machinery, or material must work in proximity closer than the minimum clearances outlined in OSHA 29CFR1926 (a) (15), and AS 18.60.670, the requirements of AS 18.60.680 shall be complied with before work can proceed. All necessary arrangements to be made with Chugach by the requesting party for compliance with AS 18.60.680 shall be arranged in advance of the project start date.

#### **2. Underground Facilities**

Alaska Statutes 42.30.400 through 42.30.490, Anchorage Municipal Code, 24.40 and 26.90, and 29CFR1926, Subpart P place requirements on contractors who will be excavating around or adjacent to underground utilities. Advance notification requirements, underground facility locates, and the responsibilities for protection of utility facilities by contractors are specified in these regulations. All requests for locates of Chugach underground facilities are to be made through the Alaska Digline at 811. In addition, prior to excavating, Chugach shall be contacted a minimum of two (2) business days in advance. Contact the Line Operations Division at 762-7655 and your call will be directed to the appropriate department for assistance.

Locate surface markings are only reasonably accurate to +/- two (2) feet. As a general rule, Chugach requires hand-digging within two (2) feet of locate marks but in some cases may require three (3) or four (4) feet, depending on the actual facility involved and field conditions at the project site. Maintaining locate marks is the responsibility of the party requesting the locate. Chugach may charge for re-locating and re-marking facilities that were previously marked.

## **B. UNDERGROUND CABLE EXCAVATION**

1. Any excavation which is within a three (3) foot radius of a cable and parallels a cable for a distance greater than twenty (20) feet in length (see Section H-1 below) may require relocation of that cable. Excavations shorter in length and/or closer may also require relocation. At a minimum, cables that will require exposure must be exposed by *hand-digging* only, by a *qualified person* under the employ of a *qualified electrical contractor* (see Section H). See Drawing No. F-062388 attached.
2. Any excavation, such as a trench which crosses cable and/or conduit, shall be limited to twenty (20) feet in width and have provisions for the exposed cable/conduit to be supported every two (2) feet on a cross beam in such a manner that the outer cable jacket and/or conduit shall not be damaged in any way. The cable support work and excavation within the three (3) foot radius (see Section H-1) shall be done by a *qualified person* under the employ of a *qualified electrical contractor*.

NOTE: When excavation must occur within the limits specified in B.1, and B.2, above, reasonable efforts will be made by Chugach to de-energize the direct buried cable if system conditions and personnel requirements allow. Even if the cable has been de-energized, a "Cable Watch" by a qualified person under the employ of a qualified contractor is still required. To request the de-energization of the cable, contact the Line Operations Division at 762-7655 and your call will be directed to the appropriate department for assistance. Requests must be made three (3) working days in advance of the outage date requested. After hours, contact Chugach's Power Control Center at 762-4660.

**Under no circumstances will Chugach allow any of its underground cable(s) to remain energized after it has been exposed, unless it is protected by supplementary mechanical protection approved by Chugach or unless a qualified person is on site at all times.**

3. Should any cable be exposed by non-qualified personnel, Chugach must be immediately contacted for field investigation before work may resume in the immediate area of such exposed cable.

**Chugach recognizes that reasonable continuation of work may be required around energized underground cables after Chugach inspects the site. When this occurs, it is the responsibility of the construction contractor working at the site to arrange for qualified personnel as well as payment of the costs of said personnel and/or equipment. Chugach will neither arrange for, nor provide qualified personnel to satisfy this requirement unless it determines it is in its best interest on a case-by-case basis. Where Chugach is otherwise forced to subsequently take**

**steps to ensure the safety of the site, it will advise the construction contractor that it will pass these costs to the construction contractor.**

4. In all cases, a final minimum burial depth of 40 to 60 inches (depending on the operating voltage) for high-voltage (above 1000 volts) primary cable/conduit and 30 inches for secondary low-voltage cable/conduit shall be maintained. If, however, existing Federal, State, or Municipal permit conditions require depths in excess of the 40 inches, then the cable/conduit shall be buried at the depth required in the permit. The depth is measured from the top of the cable/conduit to final grade at the shallowest depth. Burial shall be in compliance with Chugach Construction Standard SUR2-3 through 6 (supplied upon request).
5. Projects which increase the final grade over Chugach underground distribution cable that are direct buried shall require relocation if the final depth of burial exceeds 60" from the proposed final grade. Where the distribution cables are in conduit a review and written approval by Chugach are required for proposed grade increases resulting in a depth of burial above 60".
6. Projects which propose to modify the grade over Chugach underground transmission cables (voltages above 25kV) require review and written approval by Chugach.
7. In addition to the foregoing, excavations near transmission underground cable/conduit will require the following:
  - a) Excavation Adjacent to Transmission Voltage Level Power Lines: Chugach will require its Locate Contractor to notify excavators when a locate request includes the locating of cables that exceed 25kV distribution voltages.

When excavation is planned that will come within close proximity (ten (10) feet), expose, parallel or undermine sections of Chugach's transmission underground cables (voltages above 25kV), special precaution and safety consideration must be taken. These cables operate at voltages between 34,000 volts and 230,000 volts phase-to-phase, provide power to tens of thousands of Chugach customers and require extraordinary protection. The following guidelines shall apply:

Chugach Operations Department shall be contacted at (907) 762-7655 in advance of the planned excavation a minimum of five (5) business days prior to beginning excavation. Chugach requires that a *qualified person* be on site at all times during excavation activity that comes within ten (10) feet of any transmission cable. The contractor shall arrange and pay for a *qualified person* from Chugach or, with approval, from one of Chugach's approved and *qualified contractors*. Excavations closer than ten (10) feet

shall require exposure of the cables at the intersecting point or at intervals of not less than every twenty-five (25) feet for parallel excavations by *qualified personnel* to determine the exact location of the cable prior to machine excavation.

**Because of the high voltage, excavations within ten (10) feet of a transmission cable can expose unqualified workers to extremely unsafe conditions. Prior planning by the excavator with coordination through Chugach and Chugach approval of construction activity within ten (10) feet of transmission cable is required.**

Chugach shall approve, in advance, any plan for directional drilling, boring, pile driving or other type of "trenchless" construction in the vicinity of its transmission cables prior to any construction activity.

Chugach may require a special locate utilizing Ground Penetrating Radar to locate critical facilities. "Pothole" locates utilizing vacuum excavation in conjunction with an air-knife tool may be used, with Chugach approval.

## **C. STRUCTURE EXCAVATION**

### **1. Equipment Pads or Vaults**

Temporary excavation is allowed with a maximum slope of 1:1 beginning three (3) feet from the exterior edge of a concrete pad or vault. The final grade shall consist of a level area radiating out a minimum of four (4) feet, measured from the exterior edge of the pad or vault, and a maximum slope of 2:1 beginning from that four (4) foot distance from the exterior edge of the pad or vault. For both temporary and final grade situations, a level area extending ten (10) feet out from the edge of the concrete pad in front of equipment doors or access panels is necessary. Refer to Drawing No. F-062388 attached.

If the slope cannot be maintained at the grades specified above, additional protection such as barriers or piling is required. All shoring and excavation (closer than the above limits) shall be done by a qualified person(s) under the employ of a qualified electrical contractor.

### **2. Concrete-Encased Duct**

Excavation under a concrete-encased duct requires a method designed and certified by an Alaska-registered civil engineer and approved by Chugach. Installation of the temporary shoring or bracing shall be done under the supervision of a qualified person under the employ of a qualified electrical contractor.



#### **D. POLE/GUY ANCHOR EXCAVATION**

Excavation beginning no closer than a three (3) foot radius from a pole or guy anchor in stable soil conditions or a ten (10) foot radius from a pole or guy anchor in organic/unstable soil conditions is allowed, provided the slope from that point does not exceed 1:1. Refer to Drawing No. F-062388 attached.

Excavation closer than the limits defined above or within a ten foot radius of more than one consecutive pole where excavation will be open while more than one pole is affected, may require shoring of each pole. Chugach review and approval of shoring plan is required for all excavations where more than one pole is subject to an open excavation. Pole shoring shall conform to Chugach specifications XP-X/Y (steel pile shoring) or XM40/XM40A (wood pole shoring) as approved by Chugach for the specific excavation. Specifications will be supplied upon request. All work for installing the piles must be performed within the OSHA guidelines. Shoring by other methods requires prior approval by Chugach on a case-by-case basis. Street light poles may be temporarily removed, subject to a written agreement with Chugach, prior to excavation.

Any excavation that may expose the pole butt requires a structural analysis of the pole shoring method. The analysis shall be performed by an Alaska-licensed professional engineer familiar with electrical transmission and distribution design standards in use by Chugach.

All shoring and excavation (closer than the above limits) shall be done by a qualified person under the employ of a qualified electrical contractor.

#### **E. RELOCATION REQUIRED**

Where protection of the cable and structures cannot be maintained, as required in Sections A, B, and C, relocation of those facilities will be required prior to the intended work and at the contracting agency's expense.

#### **F. BACKFILL**

Replacement backfill for electrical facilities must be in accordance with Chugach specifications and done by a qualified person under the employ of a qualified electrical contractor.

A damaged underground facility may not be reburied until it is repaired or relocated to the satisfaction of Chugach.

#### **G. INSPECTION AND APPROVAL**

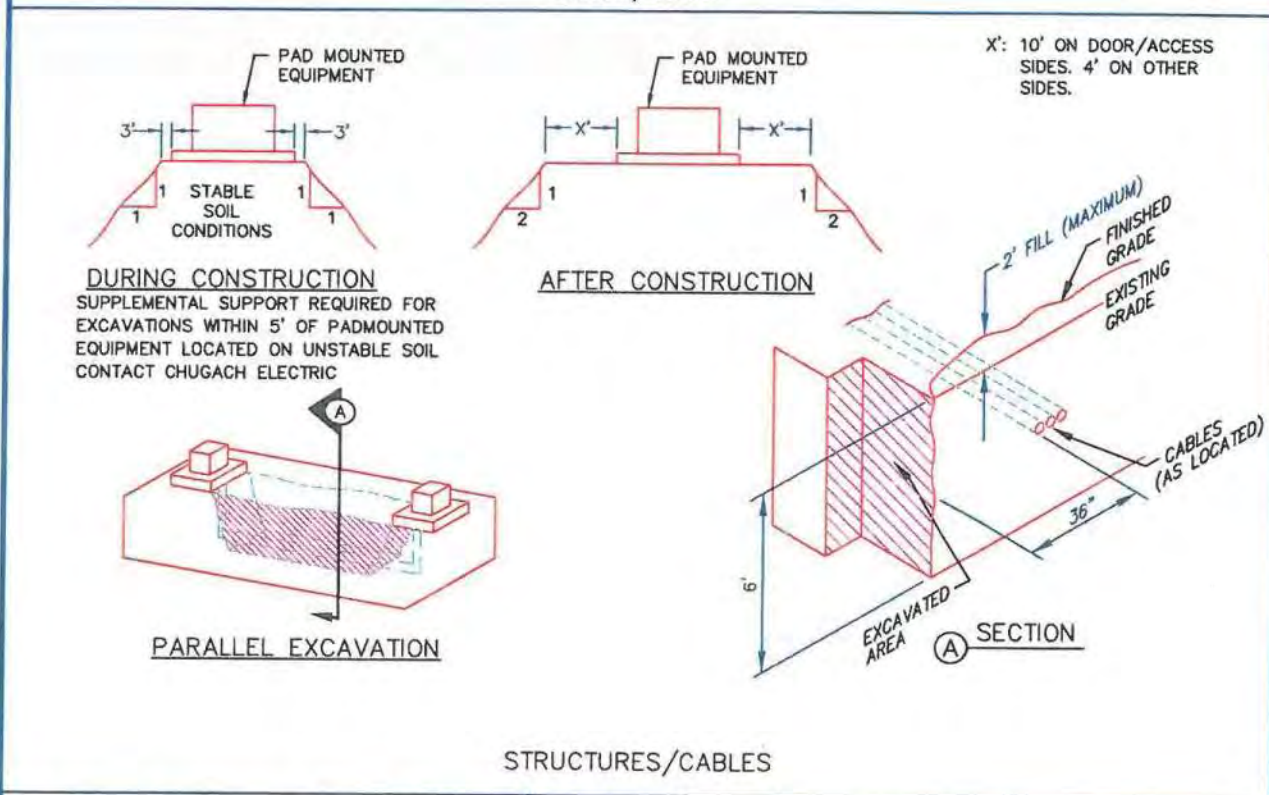
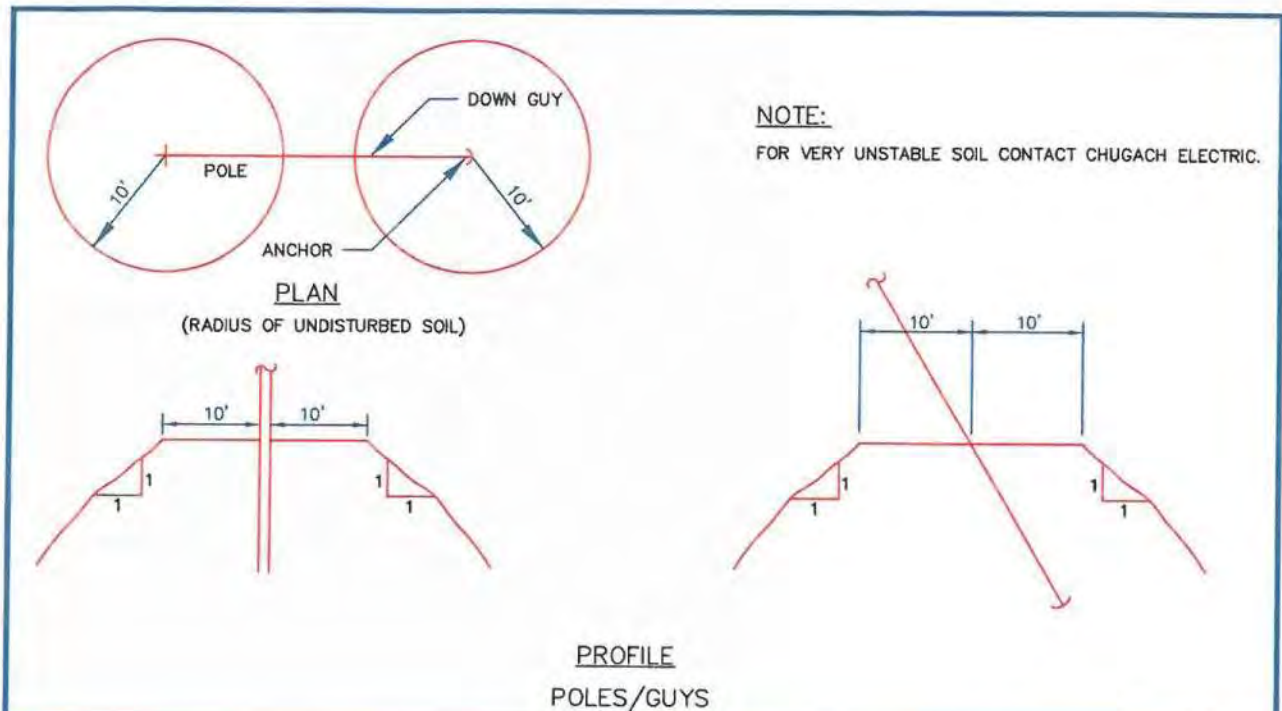
All work on or in the immediate vicinity of Chugach facilities, such as backfilling, temporary support, shoring, and relocations are subject to prior approval and

inspection by Chugach. On large projects where inspection time is substantial, all costs for inspection shall be the responsibility of the agency or entity contracting for the work. Reimbursement to Chugach shall be in accordance with Chugach's tariff, Section 8.

For any questions or approvals involving these requirements contact the Line Operations Division at 762-7655 and your call will be directed to the appropriate department for assistance.

## **H. MISCELLANEOUS**

1. Depending on the soil type, depth and length of the excavation, type of Chugach facility involved, and the certainty of the cable locate, excavations can be approved within a two (2) foot radius of cable on a case-by-case basis.
2. Stable soil conditions are defined as all dry and non-organic. Soil conditions shall be evaluated and approved on a case-by-case basis by Chugach. The evaluation will be done using 29CFR1926, Subpart P, "*Excavations*" as a guide.
3. Excavation, except as noted, shall be defined as mechanically done by a backhoe, scraper, grader, auger, or other piece of equipment.
4. Cables are defined as insulated cable whether buried directly or in conduit. The guidelines for cables also include 600-Volt pedestals and other small electrical apparatus associated with cable but not included under pads or vaults.
5. Spare conduit is not included in these provisions except to the extent of providing temporary support when exposed and inspected by Chugach prior to the placement of proper backfill.
6. Chugach defines a *qualified electrical contractor* as a contractor registered in the State of Alaska who has an Electrical Administrator's License in the Outside Linework category; or who has an employee with an Electrical Administrator's License in the same category registered with the contractor.
7. Chugach defines a *qualified person* as a journeyman lineman who holds a current Certificate of Fitness in the Journeyman Lineman category issued by the State of Alaska.
8. Chugach defines *hand-digging* as the removal of soil with hand tools or with an air-knife tool (compressed air jet).



REV. NO.: 3 DATE: 1/28/98

Standards Engineer: \_\_\_\_\_

Mgr., Dist. Engineering: \_\_\_\_\_

Mgr., Const. & Maint.: \_\_\_\_\_

Dir., T&D Services Div.: \_\_\_\_\_



**EXCAVATION LIMITS**  
DEFINITION OF LIMITS REQUIRING  
NO ADDITIONAL STRUCTURAL SUPPORT

DRAWING NUMBER

**F-062388**

SHEET 1 OF 1



**Sec. 42.30.450. Waiver of requirements by written agreement.**

An operator and an excavator may, by written agreement, waive the requirements of AS 42.30.400 - 42.30.490 that the excavator notify the operator of planned excavations and that the operator locate underground facilities. The agreement must identify the geographic areas to which the waiver applies and the time period for which the waiver is valid.

**Sec. 42.30.460. Underground facility owner.**

If the operator of an underground facility is not the owner of the facility and if the operator cannot be identified or has been identified but cannot be reached in a reasonable amount of time, the excavator may give the notice required by AS 42.30.400 - 42.30.490 to the owner of the underground facility and the owner shall assume the duties and responsibilities of the operator under AS 42.30.400 - 42.30.490.

**Sec. 42.30.490. Definitions.**

(1) "damage" means

(A) the substantial weakening of structural or lateral support of an underground facility;

(B) penetration, impairment, or destruction of any underground protective coating, housing, or other protective device; and

(C) the partial or complete severance of an underground facility to the extent that the project owner or facility operator determines that repairs are required.

(2) "emergency" means

(A) a condition that constitutes a clear and present danger to life, health, or property; or

(B) an unplanned service interruption;

(3) "excavation" means

(A) an activity in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means.

(B) road maintenance that changes the original road grade;

(C) demolition or movement of earth by equipment, tools, or explosive device except tilling of the soil less than 12 inches in depth for agricultural purposes;

(4) "excavator" means a person who conducts excavation in the state;

(5) "inaccessible" means impossible or unreasonably difficult to reach due to conditions beyond the control of the underground facility operator;

(6) "notification center" or "center" means a service through which a person is able to call one number to notify member operators of underground facilities that an excavation is proposed and to request the operators to mark facilities located inside of the proposed excavation area;

(7) "operator" means a person who supplies a service for commercial or public use by means of an underground facility;

(8) "person" means any individual, public or private corporation, political subdivision, government agency, municipality, industry, partnership, copartnership, association, firm, trust, estate, or any other entity whatsoever;

(9) "remote" means not accessible by road;

(10) "underground facility" means a pipe, sewer, conduit, cable, valve, line, or wire, including attachments and those parts of poles or anchors that are below ground, for use in connection with the storage or conveyance of water, sewage, telecommunications, cable television, electricity, petroleum, petroleum products, hazardous liquids, or flammable, toxic, or corrosive gas;

(11) "unstaffed" means not normally staffed with employees;

(12) "working day" means a day on which an underground facility operator is open for regular business.

# ALASKA STATUTES

## TITLE 42

# PUBLIC UTILITIES &

## CARRIERS

**Sec. 42.30.400. Excavator's notice of proposed excavation.**

(a) Before beginning an excavation, an excavator shall give notice of the proposed excavation to each underground facility operator who has an underground facility in the area of the proposed excavation and request the operator to field mark the location of its underground facility. The excavator shall notify an underground facility operator who subscribes to a notification center by giving notice to the center. The excavator shall notify an underground facility operator listed in the applicable telephone directory who is not a subscriber to a notification center by giving notice directly to the operator.

(b) Except in the case of an emergency locate request or a request to locate in a remote, unstaffed, or inaccessible location, the excavator shall notify an underground facility operator who may have a facility in the area of a proposed excavation at least two but not more than 15 working days before the date scheduled for beginning the excavation. In the case of a request to locate in a remote or unstaffed location, the excavator shall notify the operator at least 10 but not more than 20 working days before the scheduled date for beginning excavation.

(c) In an emergency, the excavator shall immediately notify each underground facility operator in the area of the emergency and of the need for the excavation and request prompt location of underground facilities.



**Sec. 42.30.410. Operator's response to request to locate; immunity related to unmarked or inaccurately marked facilities.**

(a) An underground facility operator shall accept requests to locate underground facilities during the operator's regular business hours. An operator who receives a request to locate shall maintain for at least one year an accurate record of the request and responses to the request.

(b) When an underground facility operator receives a request to locate, it shall notify the excavator of the location of the underground facilities that the operator is able to field mark with reasonable accuracy and field mark those facilities. If the operator owns, uses, or operates an underground facility that is identified as being in the area of the proposed excavation but that the operator cannot field mark with reasonable accuracy, the operator shall provide the excavator with the best information available to the operator about its location and shall provide on-site assistance until the facility is located or until the excavator no longer needs assistance in locating that facility.

(c) The field marks for an underground facility buried 10 feet deep or less must be located within 24 horizontal inches of the outside dimensions of the facility. For a facility buried deeper than 10 feet, the operator shall locate the field marks within 30 horizontal inches of the outside dimensions of the facility. The operator shall use stakes, paint, or other clearly identifiable material to show the field location of the underground facility. The marker used to designate the approximate location of an underground facility must follow the current color code standard used by the American Public Works Association.

(d) Except for an underground facility in a remote, unstaffed, or inaccessible location, an underground facility operator shall respond to a request to locate promptly. A response is considered to be prompt if it is made within two working days after the operator receives the request or at a later time so long as the response occurs before the beginning of the excavation. For an underground facility in an accessible remote or unstaffed location, the operator shall respond within 10 working days after the operator receives the request or at a later time

so long as the response occurs before the beginning of excavation.

(e) After an operator has field marked an underground facility, the excavator is responsible for maintaining the markings.

(f) An excavator may not begin to excavate until each underground facility has been field marked.

(g) When an operator has field marked an underground facility once at the request of an excavator, the operator has the right to receive compensation from the excavator for costs incurred in responding to subsequent requests to locate the same underground facility during the same excavation project if the excavator failed to maintain the original marking.

(h) If an excavator discovers an underground facility that was not field marked or was inaccurately field marked, the excavator shall immediately stop excavating in the vicinity of the facility and shall notify the operator of the discovery. The excavator may notify the operator by means of a notification center. The operator shall treat the notification as a request to locate in an emergency and shall respond accordingly. An excavator may not be held liable for inadvertent damage caused to an unmarked or an inaccurately marked underground facility.

(i) Unless the request to locate is made in response to an emergency, an underground facility operator has the right to receive compensation for costs incurred in responding to a request to locate that gives the operator less notice than the minimum notice required by this section. This subsection may not be interpreted to require the operator to respond to the request to locate within the time requested in the notice.

**Sec. 42.30.420. Responsibility of construction project owners.**

The owner of a construction project that will require excavation shall indicate in bid documents or contracts for construction the existence of underground facilities that the project owner knows are located inside of the proposed area of excavation. This requirement does not release the

excavator from the excavator's responsibility under AS 42.30.400 - 42.30.490.

**Sec. 42.30.430. Obligations concerning the conduct of excavations.**

(a) An excavator shall use reasonable care to avoid damaging an underground facility. The excavator shall

(1) determine, without damage to the facility, the precise location of an underground facility whose location has been marked;

(2) plan the excavation to avoid damage to and minimize interference with an underground facility in or near the excavation area, and

(3) to the extent necessary to protect a facility from damage, provide support for an underground facility in and near the construction area during the excavation.

(b) An excavator who, in the course of excavation, contacts or damages an underground facility shall notify the operator. If the damage causes an emergency, the excavator shall also alert appropriate local public safety agencies and take reasonable steps to ensure public safety. A damaged underground facility may not be reburied until it is repaired or relocated to the satisfaction of the operator. The operator of an underground facility that was damaged during excavation shall arrange for repair or relocation of the facility as soon as practical.

**Sec. 42.30.440. Penalties; injunctive relief.**

(a) In addition to all other remedies provided by law, a person who violates a provision of AS 42.30.400 - 42.30.490 is subject to a civil penalty of not less than \$50 nor more than \$1,000 for each offense if the violation results in or significantly contributes to damage to an underground facility.

(b) If the court finds that an excavator is violating or threatening to violate a provision of AS 42.30.400 - 42.30.490 and the violation may result in damage to an underground facility, the court may grant injunctive relief to the underground facility operator.



## **Excavation Safety for Natural Gas Pipelines**

### **Safety**



ENSTAR Natural Gas Company provides natural gas service through 3,580 miles of gas mains to over 142,000 customers in South Central Alaska. ENSTAR's gas pipeline system is designed, installed, and maintained with the highest regard for safety in compliance with applicable federal, state, and local government statutes and regulations. ENSTAR is regularly inspected to ensure that its operation meets industry standards.

The US Department of Transportation, Pipeline & Hazardous Materials Safety Administration (PHMSA) oversees minimum safety regulations for the transportation of natural gas by pipelines. The DOT safety regulations are currently published in Title 49, Part 190, 191, 192 & 199 of the Code of Federal Regulations (CFR).

### **The Law**

**Call 811 before you dig;** it's free and it's the law. Calling for locates is now as simple as dialing **811** or go online to [www.akonecall.com](http://www.akonecall.com). In Alaska, dialing **811** connects you with Alaska Digline Inc. Alaska Digline Inc. will take your excavation information and notify all affected utilities. Utilities have two business days to mark their utilities after receiving your call.

PHMSA is the excavation damage enforcement agency in the State of Alaska. The enforcement program protects the public from the risk of pipeline ruptures caused by excavation damage. Should an excavator violate any of the damage prevention requirements prescribed in 49 CFR part 196, Subpart B, they may face civil and or criminal penalties. Civil penalties of not more than \$200,000 for each violation, not to exceed \$2,000,000 may be levied. Criminal penalties may be enforced with imprisonment of not more than 5 years per violation. More information about the PHMSA ruling can be found at <http://www.phmsa.dot.gov/>.





## Excavation Safety for Natural Gas Pipelines

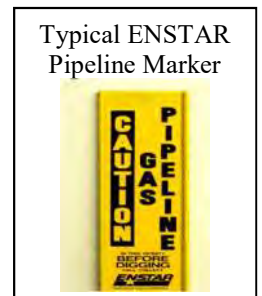
### Pipeline Markers

Do not assume there is not a pipeline if there is no marker.

ENSTAR transmission pipelines are generally marked above ground with pipeline markers similar to the one shown. Transmission pipelines are located in the vicinity of the pipeline markers. Transmission pipelines are steel and range in size from 2" to 20" in diameter. They are typically coated with a protective coating. Pipeline coatings are predominantly yellow and black, but may also be green or brown.

Distribution pipelines are steel, or High Density polyethylene with locate wire. These pipelines range in size from 1" diameter to 12" in diameter. Gas "Mains" are typically found in street right-of-ways or utility easements and supply the natural gas to an entire street or subdivision.

Natural gas service lines are connected to the gas main. Service lines generally serve a single building or small group of buildings on private property. Service lines are typically 1/2" to 2" in diameter. Service lines can be rigid steel, steel tubing, copper or polyethylene with locate wire. Gas mains and service lines are generally black or yellow in color.



### Steps to Follow

- 1 Line Locating: A Free Service:** To request a locate, dial **811**, the Nationally recognized One-Call number and you will be connected to Alaska Digline Inc. Call at least 2 but not more than 15 working days before the date scheduled for beginning the excavation.
- 2 Request a Relocate Ticket when:** the marks have not been maintained, the excavator is unable to accurately "read" the locate marks, the marks have been destroyed, or the marks are more than 15 working days old.
- 3 Excavating around Locate Marks:** In Alaska, you must use reasonable care when digging within 24 horizontal inches of the outside dimensions of the locate marks. If you are digging to a depth of 10 feet or greater, you must use reasonable care within 30 horizontal inches. *Treat all buried lines as if they were active.*

Typical means of excavating around locate marks:

- Hand Dig
- Air Knife
- Vac Truck

- 4 Standby/Inspection Requirements:** Extreme caution must be exercised whenever pipelines are encountered. All excavations in the immediate vicinity of ENSTAR Natural Gas facilities (including backfill, compaction, temporary support, and shoring), are subject to prior approval and inspection by ENSTAR personnel. Pipeline inspections are provided whenever an excavator is working within 10 feet of a transmission pipeline, or within 5 feet of a distribution line. If excavation occurs without either locates or standby (qualified ENSTAR personnel), ENSTAR Natural Gas reserves the right to excavate to determine if there has been any damage to ENSTAR Natural Gas facilities. If damage has occurred ENSTAR Natural Gas has the right to charge the excavator for repairs.







## **Excavation Safety for Natural Gas Pipelines**

- 5 Support for Steel Pipeline Crossings:** If an excavation below a **steel gas** pipeline leaves the pipeline unsupported for a distance of more than 20 feet, the excavator must provide additional support for the pipeline. Support must be provided in a way as to not damage the pipe or its coating during construction, backfill placement, and compaction. Generally, a support spacing of 5 feet or less will provide the required support. ENSTAR Engineering must approve all excavations crossing steel pipelines above 4-inch diameter. If support is required, ENSTAR engineering written approval is required prior to beginning construction. Call ENSTAR Engineering (907)334-7740 for further information. Extra care must be taken when geotextile fabric and/or rigid insulation are used. Geotextile fabric and/or rigid insulation shall be sufficiently separated from steel pipeline and in addition to continuous support under the pipeline, compacted fill material shall be placed between the geotextile fabric/rigid insulation and the pipeline (see item 10 clearance). Care shall be taken to insure stability for the ENSTAR facility. Failure to properly protect ENSTAR's facilities could result in future damage if differential settlement occurs.
- 6 Support for Polyethylene Line Crossings:** If an excavation is below a **polyethylene gas pipeline** the excavator must continuously support such pipeline during construction, backfill placement, and compaction. Geotextile fabric and/or rigid insulation shall be sufficiently separated from the polyethylene gas pipeline to prevent undue stress during the compaction/settlement process. (see item 10 clearance)
- 7 Excavation Parallel to Pipeline:** **Whenever an excavation (horizontal or vertical) is performed within 5 feet of a distribution pressure pipeline and 10 feet of a transmission pressure pipeline, the gas pipeline must be exposed to visually determine the exact location.** When parallel excavations are expected to expose or undermine sections of pipeline, the excavator must notify ENSTAR engineering in advance. Care must be taken not to damage the pipeline, or to induce stresses due to differential settlement following construction. **Long parallel excavations exposing pipelines can be very dangerous if not properly performed and shall not be attempted without prior approval by ENSTAR.** Unless otherwise approved by ENSTAR engineering, all excavations parallel to a gas pipeline require that the pipeline be exposed at intervals no greater than every 25 feet to visually determine the pipeline's exact location. Contact ENSTAR Engineering at (907)334-7740 for additional information.
- 8 Blasting:** All plans for blasting that will occur within 500' of any Company Facility, shall be reviewed by an ENSTAR engineer. The person performing the blasting shall take all appropriate measures as recommended by ENSTAR engineering, (i.e. require minimum distance from facilities, minimize blasting charge intensity, etc.) to protect the integrity of the Company's Facilities. A leak survey shall be performed before and after any blasting activity, within 500' of any Company Facility.
- 9 Trenchless Excavation (Vertical or Horizontal):** **Whenever a trenchless excavation (horizontal or vertical) is performed within 5 feet of a distribution pressure pipeline and 10 feet of a transmission pressure pipeline, the gas pipeline must be exposed to visually determine the exact location.** If the trenchless excavation is expected to cross the pipeline within the aforementioned distances, the pipeline in question shall be fully exposed to a minimum of 1 foot beneath the pipeline prior to the expected crossing to ensure that the pipeline is not unduly damaged due to ground movement in the immediate vicinity of the pipeline. **When performing a trenchless excavation parallel to a gas pipeline, the gas pipeline must be exposed at intervals of 25 feet or less to visually determine the pipeline's exact location.** Trenchless excavation is defined as drilling, directional drilling, boring, pile installation etc.
- 10 Clearance:** Natural Gas pipelines require a **12 inch minimum separation from other underground structures** not associated with ENSTAR's pipeline system. Additional clearance from other underground structures may be required to allow proper maintenance and reduce the possibility of damage due to





## **Excavation Safety for Natural Gas Pipelines**

the proximity of other structures (49 CFR § 192.325.) This clearance requirement includes rigid insulation and geotextile fabrics. **ENSTAR requires a 36-inch minimum separation from certain electrical facilities, including any grounded components i.e. ground rods, non-insulated conductors and associated structures.**

- 11 Pipeline Cover:** ENSTAR pipelines in public rights-of-way are generally installed with 36 inches to 48 inches of cover, and in private rights-of-way with 12 inches to 36 inches of cover. Projects that decrease cover or increase cover in excess of 60 inches must receive prior approval from ENSTAR Engineering Department (907)334-7740. ENSTAR has limited ability to prevent the removal of cover over gas pipelines. Increasing pipeline cover more than 5 feet or decreasing pipeline cover to less than 3 feet may be considered a damage that may result in relocation of the gas pipeline at the expense of the Excavator. The depth of cover listed above cannot be assumed after installation. The excavator is responsible for any damage to ENSTAR pipelines regardless of the depth at which they are encountered.
- 12 Landscaping:** Most landscaping activities require locates, and when it is determined that landscaping activities are within 5 feet of a distribution pipeline, or 10 feet of a transmission pipeline, Inspection/Standby requirements as listed above are applicable. Planting of trees and shrubs over existing pipelines is not permissible and can present a safety and reliability hazard to the pipeline.

### **Damage Reporting**

**If you damage a gas line, immediately Call **911** and ENSTAR at  
1-844-SMELL GAS (1-844-763-5542). It's the Law.**

**Gas lines that have been pulled, stretched, kinked or bent could be damaged underground away from where the line is connected. If you pull or stretch gas lines call ENSTAR at (907)277-5551 and an ENSTAR Representative will investigate for possible underground leakage.**

### **Pipe Wall Protection**

Dents, scrapes, gouges and scratches reduce pipeline wall thickness and affect the safety of the facility in two ways. First, the reduced wall thickness decreases the pressure at which the pipeline can safely operate. Second, the damage serves as a stress concentration that can cause a future brittle failure of the pipeline. **An ENSTAR representative must inspect each dent, scrape, gouge or scratch, no matter how small, before it is reburied.**

### **Corrosion Protection**

ENSTAR's **steel** pipelines are protected from corrosion by a dielectric coating and an impressed current or galvanic anode cathodic protection system. Direct contact with metallic objects (a short) or removal of the protective coating can compromise this system. Contact the ENSTAR Engineering Department (907)334-7740, whenever coating damage or a short is encountered. **An ENSTAR representative must inspect each short or section of damaged coating before it is reburied.**

### **Locate Wire Protection**

ENSTAR's **polyethylene** pipelines are installed with a parallel copper wire, which is used to locate the pipeline. If the locate wire or wire coating is damaged, ENSTAR's ability to properly locate the pipeline may be severely compromised. Electrical continuity must be maintained. **An ENSTAR representative must**





## **Excavation Safety for Natural Gas Pipelines**

**inspect and/repair each possible locate wire damage before it is reburied**, accidental locate wire damage repair is free of charge.

### **Excess Flow Valves**

An Excess Flow Valve (EFV) is a safety device installed in a natural gas service line near the gas main that is designed to automatically shut off the flow of natural gas in the event that the service line is broken. Effective April 14th, 2017, all gas companies nationwide are required to install an EFV or a curb-side shut off valve in any new or renewed service lines.

#### **What does this mean to you as an Excavator?**

Should you damage a natural gas service line that has an EFV, the gas will blow for a short duration and shut off automatically if the flow of gas is sufficient to close the EFV. Damages that do not sever the service line completely may not cause the EFV to close and the gas will continue to blow. Regardless, **you must report all damages to ENSTAR immediately**. EFVs are designed to allow a small amount of "bleed-by" so they can be reset without excavating the gas main. Backfilling a damaged service line with gas bleeding underground is extremely dangerous and could fuel an explosion if it is not repaired timely. **Do not assume a damaged service is dead or abandoned if it is not blowing gas**. The EFV may have shut down the flow of gas. Report all damages immediately by calling **1-844-SMELL-GAS**.

Please remember that the vast majority of ENSTAR service lines WILL NOT have an EFV. Should you damage a service line without an EFV, gas will blow at full line pressure until ENSTAR can arrive to shut it off. Your best protection against damaging underground utilities is to call **811** for locates and hand dig within 2 feet of the locate marks.

### **What to do if You Smell Gas**

**Natural gas actually does not have a natural odor, but mercaptan compounds are added to distribution system gas to enable you to smell a leak. If you smell the characteristic Sulphur odor, call ENSTAR at 1-844-SMELL GAS (1-844-763-5542)**

### **Qualified Personnel Requirements**

Only qualified individuals meeting all applicable requirements may perform work on Natural Gas facilities. At a minimum, such individuals must comply with applicable federal, state and local regulation, statutes, and ordinances.

**Additional pipeline information can be found on the following websites:**

PHMSA/DOT	<a href="https://phmsa.dot.gov/pipeline">https://phmsa.dot.gov/pipeline</a>
Common Ground Alliance	<a href="http://www.commongroundalliance.com">http://www.commongroundalliance.com</a>
Pipeline 101	<a href="http://www.pipeline101.com">http://www.pipeline101.com</a>
Alaska Digline, Inc.	<a href="http://www.akonecall.com/">http://www.akonecall.com/</a>





## **Excavation Safety for Natural Gas Pipelines**



For further information about ENSTAR, visit our web site @ [www.enstarnaturalgas.com](http://www.enstarnaturalgas.com)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**APPENDIX C**

**UTILITY COMPANY RELOCATION DRAWINGS**

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)



**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**III**

**SUBMITTAL LIST**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**SUBMITTAL LIST**

Job #: 20-24

Contractor:

Submittal Number	Rev.	Description
10.04.9		Private Property Disposal Site Permission; Fill Permit
10.04.13		Street Closures; Traffic Control Plan including Traffic Control for Utility Companies
10.04.15		Temporary Erosion Control and Storm Water Pollution Prevention Plan including SWPPP for Utility Companies
10.04.17		Utility Notification Verification
10.04.19		Record Drawings
10.04.22		Contractor's Emergency Contact Data
10.05.3		Construction Progress Schedule
10.05.3		Schedule of Values
10.05.3		Submittal Schedule
10.05.4		Notice of Unusual Working Hours
10.05.6		Product Data
10.05.7		Proposed Substitutions
10.05.9		Contractor's Authorized Representatives and Employees
10.05.10		Subcontractor's List
10.05.34		Work Plan
10.06.9		Certificate of Insurance
10.06.12		Certified Payroll

Submittal Number	Rev.	Description
20		All Imported Earthwork Materials Required from this Contract
20.02		Storm Water Pollution Prevention Plan
20.12/20.13		Dewatering/Trench Dewatering Plan
20.12/20.13		ADEC Dewatering Plan Permit Approval
20.12/20.13		AWWU Approval if Dewatering Plan Includes Discharge to AWWU Sewer Main
20.25		Geotextile
20.26		Insulation Board (all types)
20.30		Trench Sheet piling/Shoring Submittal
30.01.9		Concrete Temperature Maintenance Procedure Proposal
30.01		All concrete mix designs
30.10		Colored concrete
40.04.2		Certified Analysis of Asphalt for Tack Coat from Refining Laboratory
40.04.3		Tack Coat Test Strip and Notification
40.06.2		Certified Analysis of Asphalt for A.C. Pavement from Refinery Lab.
40.06.3		Asphalt Job Mix Formula for A.C. Pavement Laboratory
40.06.4		Contractor's Certificate of Compliance for bituminous paver segregation mechanism installation.
50		All Sewer Materials Required from this Contract
55.02		Storm Drain Televising Documentation
55.02		Storm Drain Pipe
55.05 & 55.09		Storm Drain Structure Shop Drawings
55.05		Bypass Gate Control Shop Drawings

Submittal Number	Rev.	Description
55.22		Oil and Grit Separator Shop Drawings
55.27		Storm Drain Bypass System Plan
70.11		Sign Shop Drawings
70.12		Traffic Control Plan
70.12.4		Identify I.M.S.A./A.T.S.S.A. Person and Telephone Number
70.12.6		Proof of Advertisements
70.18		Chain Link Materials and Shop Drawing Showing Layout
75.02		Landscape Maintenance Schedule
75.02		Tree Service Firm & Arborist Certification
75.02		Rock Mulch Sample
75.03.2		Topsoil Analysis Test Reports
75.03		Topsoil Mix
75.04		Seed Certification
80.00		All Electrical/Signal Equipment and Materials Submittals
80.01		Temporary Illumination Plan
80.01		Temporary Signalization Plan

NOTE: The above list of submittals is not all inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the Drawings, specifications, M.A.S.S., or as directed by the Engineer.

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

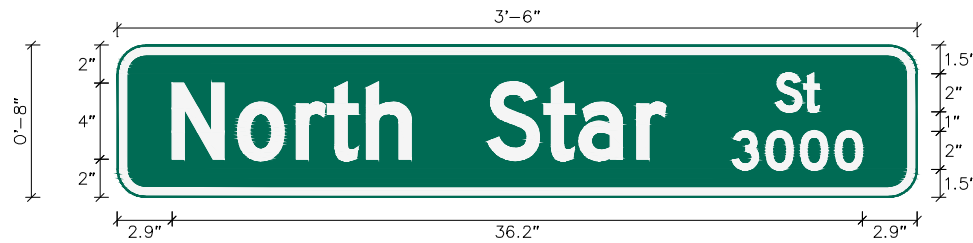
**20-24**

**IV**

**SPECIAL DETAILS  
Sign Drawings**



1:10



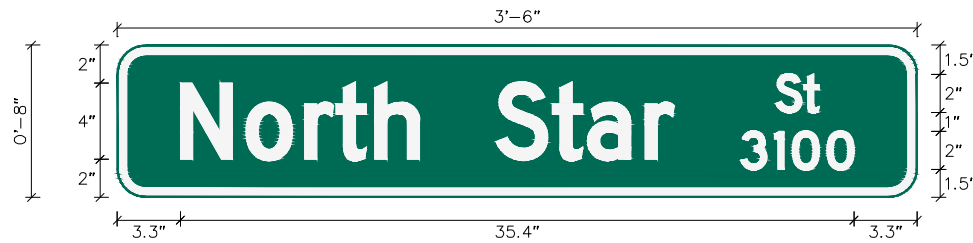
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CORNER RADIUS	1.5"
MOUNTING	Per Plans
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

1:10



SIGN NUMBER	D3-101
WIDTH x HGHT.	3'-6" x 0'-8"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Per Plans
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

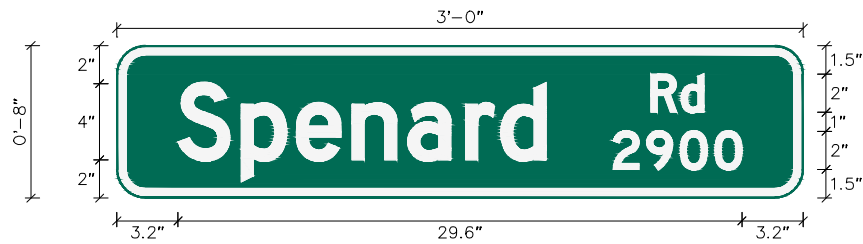
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Letter locations are panel edge to lower left corner

[illegible]



1:10



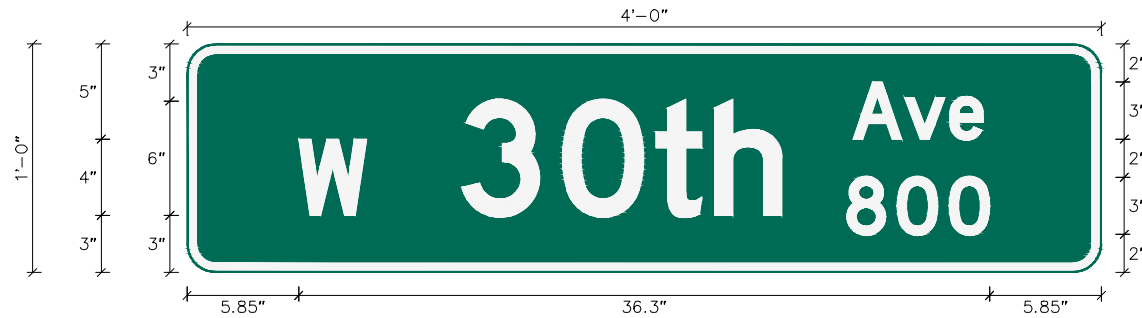
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BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Per Plans
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	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

1:10



SIGN NUMBER	D3-101
WIDTH x HGHT.	4'-0" x 1'-0"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Per Plans
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

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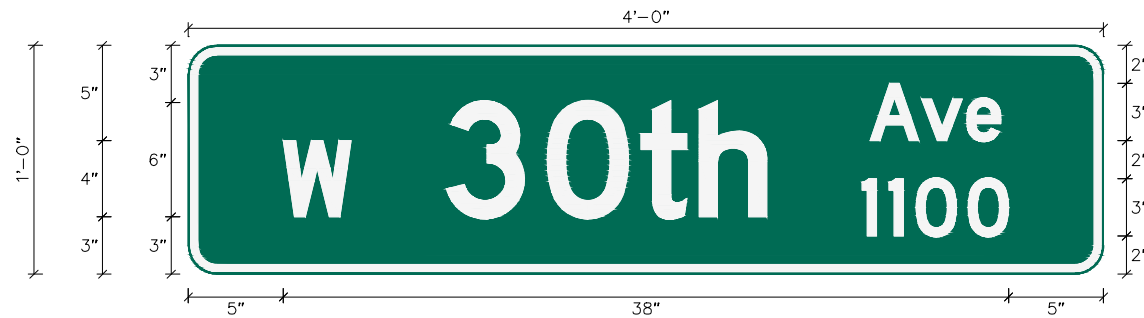
Letter locations are panel edge to lower left corner

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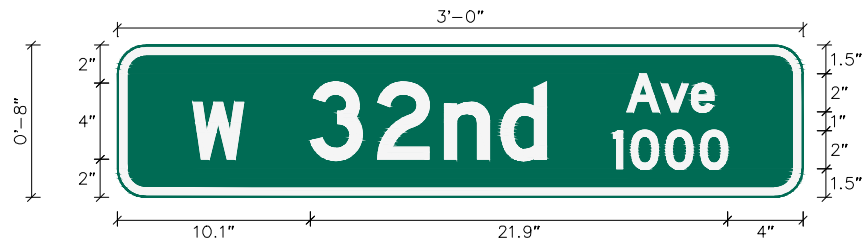
1:10

[illegible][illegible]

1:10

[illegible][illegible]

1:10



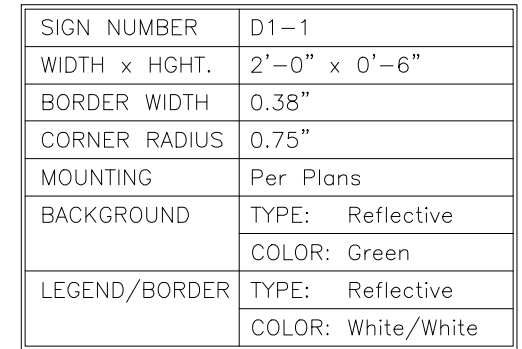
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WIDTH x HGHT.	3'-0" x 0'-8"
BORDER WIDTH	0.5"
CORNER RADIUS	1.5"
MOUNTING	Per Plans
BACKGROUND	TYPE: Reflective
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LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

[illegible]

Letter locations are panel edge to lower left corner

[illegible]

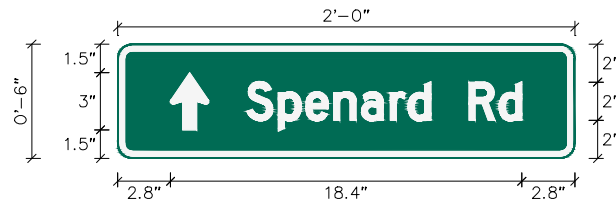
1:10

[illegible][illegible]

1:10

[illegible][illegible]

1:10



SIGN NUMBER	D1-1
WIDTH x HGHT.	2'-0" x 0'-6"
BORDER WIDTH	0.38"
CORNER RADIUS	0.75"
MOUNTING	Per Plans
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

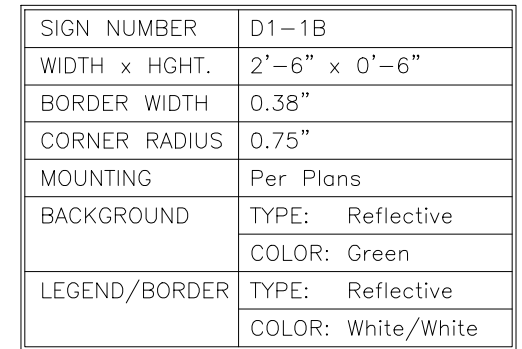
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Letter locations are panel edge to lower left corner

[illegible]



1:10



SYMBOL	ROT	X	Y	WID	HT
AR_Type D	90	4.1	2	2	3
Bicycle	0	9.1	1.5	5.2	3
AR_Type					

[illegible]

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**V**

**SOILS INFORMATION**



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**LEGEND**

#

2018/2019 GEOTECHNICAL BOREHOLE LOCATION AND NAME

**REFERENCE**

1.

BASEMAP PROVIDED BY CRW ENGINEERING GROUP, LLC ON 2018-10-25.

2.

ORTHOIMAGERY ACQUIRED IN JULY 2015 BY THE ANCHORAGE LIDAR AND IMAGERY PROJECT AND WAS DISTRIBUTED BY ALASKA DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS (DGGS) ONLINE MAP.



CLIENT  
CRW ENGINEERING GROUP, LLC

CONSULTANT	YYYY-MM-DD	2020-07-06
	DESIGNED	-
	PREPARED	APG
	REVIEWED	AMM
	APPROVED	JD



PROJECT  
WEST 32ND AVENUE AND EAST 33RD AVENUE UPGRADES

ANCHORAGE, ALASKA  
TITLE  
**BOREHOLE LOCATION MAP - WEST 30TH AVENUE**

PROJECT NO.	CONTROL	REV.	FIGURE
1773748		0	3

1" IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



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**LEGEND**

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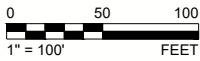
2018 GEOTECHNICAL BOREHOLE LOCATION AND NAME

HISTORICAL GEOTECHNICAL BOREHOLE LOCATION AND NAME

**REFERENCE**

1. BASEMAP PROVIDED BY CRW ENGINEERING GROUP, LLC ON 2018-10-25.

2. ORTHOIMAGERY ACQUIRED IN JULY 2015 BY THE ANCHORAGE LIDAR AND IMAGERY PROJECT AND WAS DISTRIBUTED BY ALASKA DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS (DGGs) ONLINE MAP.



CLIENT  
CRW ENGINEERING GROUP, LLC

CONSULTANT



YYYY-MM-DD	2020-07-06
DESIGNED	-
PREPARED	APG
REVIEWED	AMM
APPROVED	JD

PROJECT  
WEST 32ND AVENUE AND EAST 33RD AVENUE UPGRADES

ANCHORAGE, ALASKA  
TITLE  
**BOREHOLE LOCATION MAP - WEST 32ND AVENUE**

PROJECT NO.	CONTROL	REV.	FIGURE
1773748		0	4

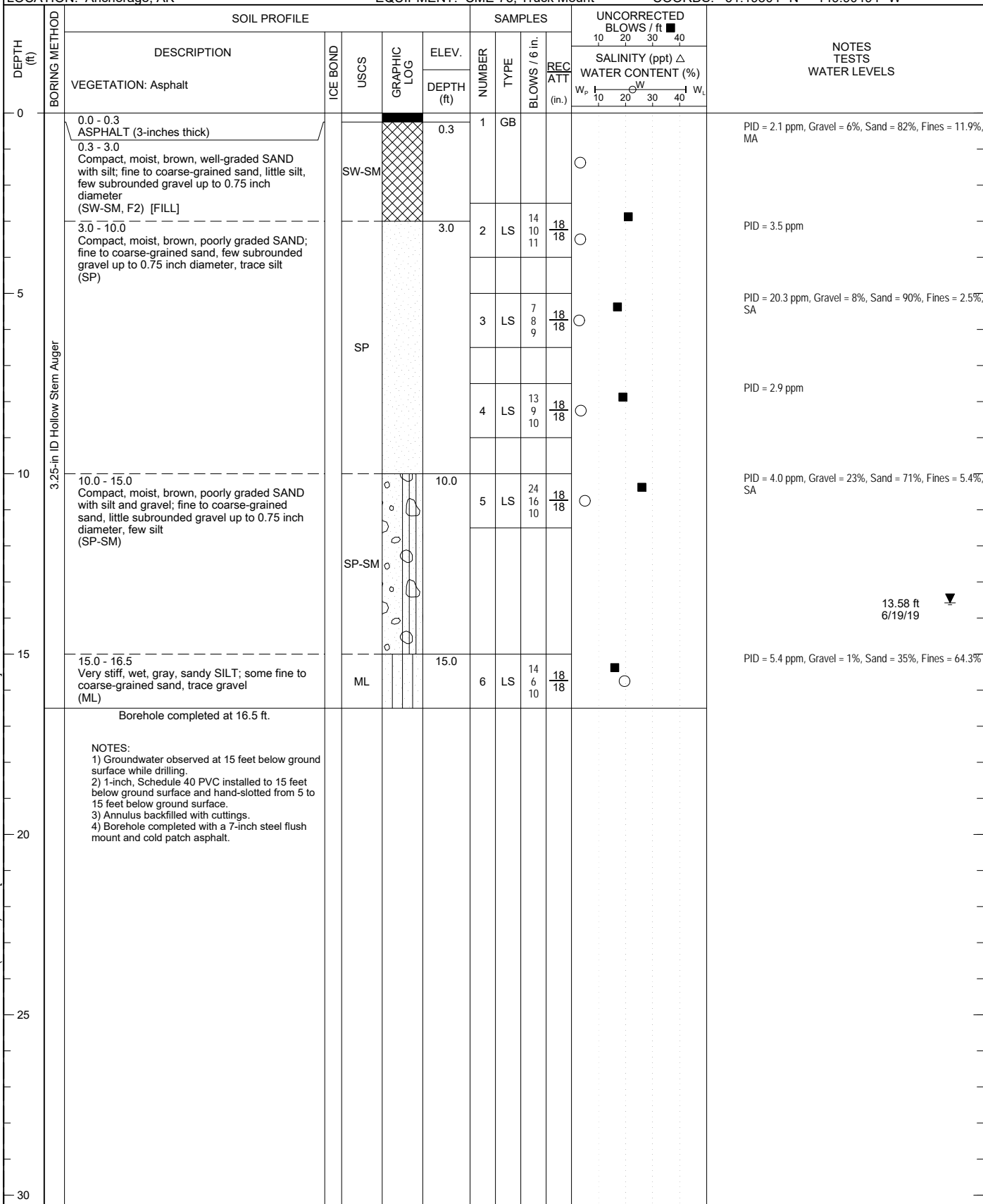
1" IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



# RECORD OF BOREHOLE BH-14

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
PROJECT NUMBER: 1773748 DRILLING DATE: 11/15/2018 ELEVATION: n/a  
LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19304° N 149.90494° W



13.58 ft  
6/19/19



DEPTH SCALE: 1 inch to 3.75 feet  
DRILLING CONTRACTOR: Discovery Drilling Inc.  
DRILLER: G. Erickson

LOGGED: A. Mathers  
CHECKED: J. Karp  
CHECK DATE: 1/4/2019

Figure  
A-15

1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMathers 11/20/19

# RECORD OF BOREHOLE BH-15

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
PROJECT NUMBER: 1773748 DRILLING DATE: 11/15/2018 ELEVATION: n/a  
LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19306° N 149.90151° W

DEPTH (ft)		BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / ft ■		NOTES TESTS WATER LEVELS		
			DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS / 6 in. REC ATT (in.)	SALINITY (ppt) Δ WATER CONTENT (%)				
											W <sub>p</sub> 10 20 30 40 W <sub>L</sub>				
0	3.25-in ID Hollow Stem Auger	0.0 - 0.2 ASPHALT (2-inches thick)				0.2	1	GB				PID = 19.4 ppm, Gravel = 15%, Sand = 59%, Fines = 26.0%, MA			
		0.2 - 3.0 Compact, moist, brown, SILTY SAND with gravel; fine to coarse-grained sand, little to some silt, little subrounded gravel up to 1 inch diameter (SM, F3) [FILL]		SM								PID = 5.5 ppm			
		3.0 - 15.0 Compact, moist to wet, brown to gray, poorly graded SAND with gravel; fine to coarse- grained sand, little to some subrounded gravel up to 1 inch diameter, trace silt (SP)		SP		3.0	2	LS	21 9 11	18 18					
5							3	LS	7 9 10	18 18					
						4	LS	18 9 12	18 18			PID = 4.0 ppm 8 ft 11/15/18			
10							5	LS	5 8 11	12 18			PID = 5.3 ppm, Gravel = 30%, Sand = 67%, Fines = 3.6%, SA		
15		15.0 - 16.5 Compact, wet, gray, SILTY SAND; fine to medium-grained sand, little to some silt (SM)		SM		15.0	6	LS	11 8 9	6 18			PID = 6.0 ppm, Gravel = 0%, Sand = 74%, Fines = 25.6%		
		Borehole completed at 16.5 ft.													
		NOTES: 1) Groundwater observed at 8 feet below ground surface while drilling. 2) Borehole backfilled with cuttings and tamped using rig and rods. 3) Borehole completed with cold patch asphalt.													
20															
25															
30															



DEPTH SCALE: 1 inch to 3.75 feet  
DRILLING CONTRACTOR: Discovery Drilling Inc.  
DRILLER: G. Erickson

LOGGED: A. Mathers  
CHECKED: J. Karp  
CHECK DATE: 1/4/2019

Figure  
A-16

1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMathers 11/20/19

SHEET 1 of 1

DATUM: NAD 83  
ELEVATION: n/a  
COORDS: 61.19157° N 149.89851° W



# RECORD OF BOREHOLE BH-21

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
PROJECT NUMBER: 1773748 DRILLING DATE: 11/16/2018 ELEVATION: n/a  
LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19160° N 149.89999° W

DEPTH (ft)		BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / ft		NOTES TESTS WATER LEVELS	
DESCRIPTION			ICE BOND	USCS	GRAPHIC LOG	ELEV.	NUMBER	TYPE	BLOWS / 6 in.	REC ATT	SALINITY (ppt) Δ WATER CONTENT (%)			
VEGETATION: Grass											DEPTH (ft)	W <sub>p</sub>		W <sub>L</sub>
0		3.25-in ID Hollow Stem Auger	0.0 - 2.7 Moist, brown, poorly graded SAND with silt; fine to coarse-grained sand, few silt, trace subrounded gravel up to 0.5 inch diameter, trace organic material (SP-SM) [FILL]	SP-SM			1	GB				PID = 0.3 ppm		
			2.7 - 5.0 Loose, moist, brown, SILTY SAND; fine to coarse-grained sand, some silt, trace gravel up to 0.38 inch diameter (SM)	SM		2.7	2	LS	3 3 3	12 18			PID = 0.3 ppm, Gravel = 2%, Sand = 59%, Fines = 38.4% SA	
5			5.0 - 7.8 Compact, moist, brown, poorly graded SAND; medium-grained sand, trace silt (SP)	SP		5.0	3	LS	6 6 7	18 18			PID = 0.5 ppm	
			7.8 - 10.0 Compact, moist, brown, poorly graded SAND with gravel; fine to coarse-grained sand, some subrounded to subangular gravel up to 1 inch diameter, trace silt (SP)	SP		7.8	4	LS	16 13 11	18 18			PID = 0.4 ppm, Gravel = 37%, Sand = 59%, Fines = 3.6% SA	
10			10.0 - 15.0 Compact, wet, brown, poorly graded SAND with silt; fine to coarse-grained sand, little subrounded to subangular gravel up to 0.75 inch diameter, few silt (SP-SM)	SP-SM		10.0	5	LS	20 7 11	12 18			PID = 0.7 ppm, Gravel = 11%, Sand = 84%, Fines = 5.6% SA	
			15.0 - 15.3 Compact, wet, brown, SILTY SAND; fine to coarse-grained sand, little silt, trace subrounded to subangular gravel (SM)	SM		15.0 15.3	6	LS	11 9 8	12 18			PID = 0.3 ppm, Gravel = 3%, Sand = 81%, Fines = 15.6% PID = 0.7 ppm, Gravel = 31%, Sand = 65%, Fines = 4.0% SA	
			15.3 - 16.5 Compact, wet, gray, well-graded SAND with gravel; fine to coarse-grained sand, some subrounded to subangular gravel up to 1 inch diameter, trace silt (SW)											
			Borehole completed at 16.5 ft.											
20			NOTES: 1) Groundwater observed at 8 feet below ground surface while drilling. 2) Borehole backfilled with cuttings and tamped using rig and rods. Excess cuttings were mounded at the surface.											
25														
30														

1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMMathers 11/20/19



DEPTH SCALE: 1 inch to 3.75 feet  
DRILLING CONTRACTOR: Discovery Drilling Inc.  
DRILLER: G. Erickson

LOGGED: A. Mathers  
CHECKED: J. Karp  
CHECK DATE: 1/4/2019

Figure  
A-22



# RECORD OF BOREHOLE BH-22

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
PROJECT NUMBER: 1773748 DRILLING DATE: 11/16/2018 ELEVATION: n/a  
LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19171° N 149.90159° W

DEPTH (ft)		BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / ft ■		NOTES TESTS WATER LEVELS
DESCRIPTION			ICE BOND	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS / 6 in. REC ATT (in.)	SALINITY (ppt) Δ WATER CONTENT (%)			
VEGETATION: Asphalt										W <sub>p</sub>	W <sub>L</sub>		
0	0.0 - 0.5 ASPHALT (7-inches thick)	3.25-in ID Hollow Stem Auger				0.5	1	GB					PID = 0.7 ppm
	0.5 - 3.9 Loose, moist, dark brown, sandy ORGANIC SILT; some fine to coarse-grained sand, little fibrous organic material (OL)			OL			2	LS	5 2 4	12 18	■	○	PID = 0.3 ppm, Gravel = 0%, Sand = 36%, Fines = 64.2%, OLI = 13%
	3.9 - 5.0 Soft, moist, gray, SILT; trace organic material (ML)			ML		3.9							
5	5.0 - 5.8 Compact, moist, gray, SILTY SAND; fine to coarse-grained sand, little silt, few gravel up to 0.75 inch diameter (SM)			SM		5.0	3	LS	5 8 6	18 18	○ ■	○	PID = 0.5 ppm, Gravel = 8%, Sand = 61%, Fines = 30.9%
	5.8 - 7.5 Compact, moist, gray to brown, well-graded SAND with silt; fine to coarse-grained sand, few silt, few gravel up to 0.75 inch diameter (SW-SM)			SW-SM		5.8					○		PID = 0.4 ppm, Gravel = 9%, Sand = 82%, Fines = 9.0%, SA
	7.5 - 15.0 Compact, wet, dark gray, poorly graded SAND with silt; fine to coarse-grained sand, trace to little subrounded to subangular gravel up to 0.75 inch diameter, few silt (SP-SM)			SP-SM		7.5	4	LS	8 9 11	18 18	○ ■	○	7.32 ft 6/19/19 ▼ PID = 0.5 ppm, Gravel = 3%, Sand = 89%, Fines = 7.3%, SA
10						5	LS	9 8 9	12 18	○ ■	○	PID = 0.6 ppm	
15	15.0 - 16.5 Compact, wet, dark gray, poorly graded SAND; medium-grained sand, trace silt (SP)		SP		15.0	6	LS	7 8 10	12 18	■	○	PID = 0.6 ppm	
Borehole completed at 16.5 ft.													
NOTES: 1) Groundwater observed at 10 feet below ground surface while drilling. 2) 1-inch, Schedule 40 PVC installed to 15 feet below ground surface and hand-slotted from 5 to 15 feet below ground surface. 3) Annulus backfilled with cuttings. 4) Borehole completed with a 7-inch steel flush mount and cold patch asphalt.													
20													
25													
30													



DEPTH SCALE: 1 inch to 3.75 feet  
DRILLING CONTRACTOR: Discovery Drilling Inc.  
DRILLER: G. Erickson

LOGGED: A. Mathers  
CHECKED: J. Karp  
CHECK DATE: 1/4/2019

Figure  
A-23

1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMathers 11/20/19

# RECORD OF BOREHOLE BH-27

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
 PROJECT NUMBER: 1773748 DRILLING DATE: 11/15/2018 ELEVATION: n/a  
 LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19306° N 149.90323° W

DEPTH (ft)		BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / ft ■		NOTES TESTS WATER LEVELS
			DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS / 6 in. REC ATT (in.)	SALINITY (ppt) Δ WATER CONTENT (%)		
											W <sub>p</sub>	W <sub>L</sub>	
VEGETATION: Asphalt													
0	3.25-in ID Hollow Stem Auger	0.0 - 0.5 ASPHALT (6-inches thick)				0.5	1	GB					PID = 8.3 ppm, Gravel = 6%, Sand = 79%, Fines = 15.4%, MA
		0.5 - 2.5 Moist, brown, SILTY SAND; fine to coarse-grained sand, little silt, few subrounded gravel up to 0.75 inch diameter (SM) [FILL]		SM									
		2.5 - 5.0 Compact, moist, brown, poorly graded SAND; fine to coarse-grained sand, few gravel up to 0.75 inch diameter, trace silt, silt interbeds to three-inches thick from 2.5 to 4.5 feet (SP)		SP		2.5	2	LS	5 7 8	18 18			PID = 10.1 ppm, Gravel = 7%, Sand = 89%, Fines = 4.4%, SA
5		5.0 - 7.5 Compact, moist, brown, poorly graded SAND with silt; fine to coarse-grained sand, little gravel up to 0.75 inch diameter, few silt (SP-SM)		SP-SM		5.0	3	LS	17 7 8	18 18			PID = 9.4 ppm, Gravel = 14%, Sand = 81%, Fines = 5.3%, SA
		7.5 - 16.5 Compact, moist to wet, gray, poorly graded SAND with gravel; fine to coarse-grained sand, some subrounded gravel up to 1 inch diameter, trace silt (SP)		SP		7.5	4	LS	8 6 6	18 18			PID = 11.4 ppm
10					5	LS	8 8 8	12 18			PID = 1.3 ppm, Gravel = 30%, Sand = 66%, Fines = 3.9%, SA		
15			6		LS	12 10 12	12 18			PID = 265 ppm			
Borehole completed at 16.5 ft.													
NOTES: 1) Groundwater observed at 10 feet below ground surface while drilling. 2) 1-inch, Schedule 40 PVC installed to 15 feet below ground surface and hand-slotted from 5 to 15 feet below ground surface. 3) Annulus backfilled with cuttings. 4) Borehole completed with a 7-inch steel flush mount and cold patch asphalt.													
20													
25													
30													

1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMathers 11/20/19



DEPTH SCALE: 1 inch to 3.75 feet  
 DRILLING CONTRACTOR: Discovery Drilling Inc.  
 DRILLER: G. Erickson

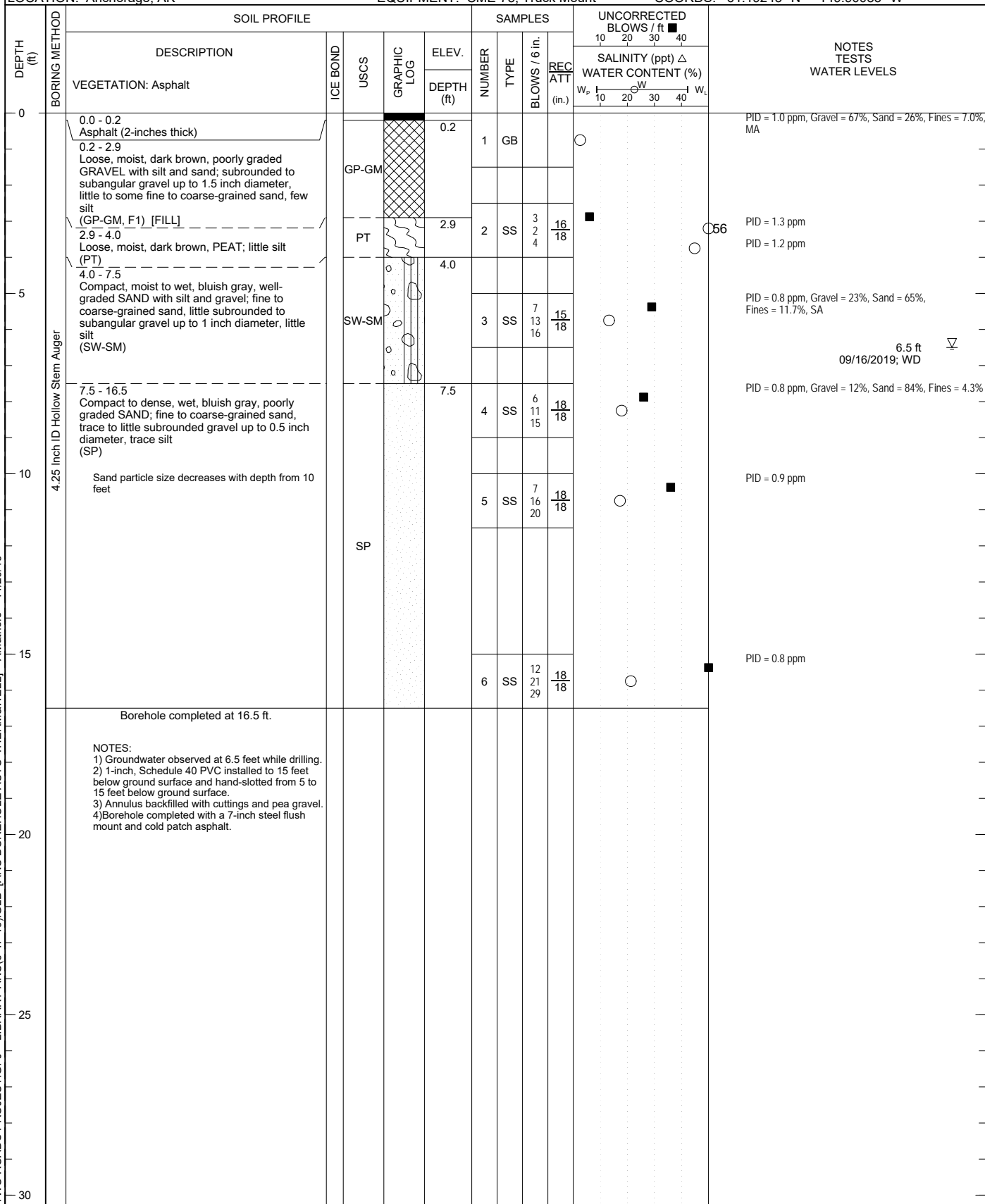
LOGGED: A. Mathers  
 CHECKED: J. Karp  
 CHECK DATE: 1/4/2019

Figure  
A-28

# RECORD OF BOREHOLE BH-28

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
PROJECT NUMBER: 1773748 DRILLING DATE: 09/16/2019 ELEVATION: n/a  
LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19243° N 149.90083° W



1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMathers 11/20/19



DEPTH SCALE: 1 inch to 3.75 feet  
DRILLING CONTRACTOR: Discovery Drilling Inc.  
DRILLER: J. Saunders

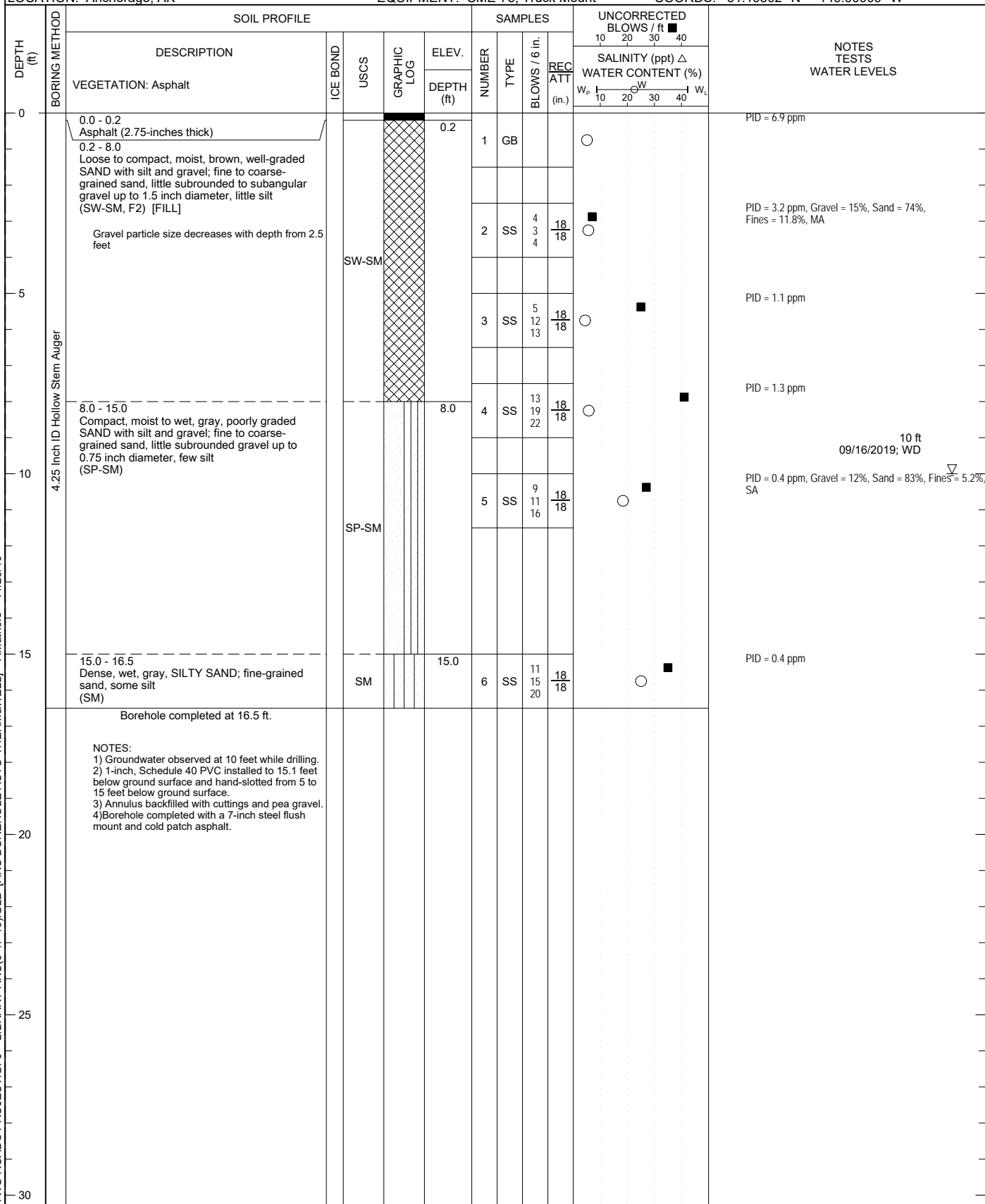
LOGGED: T. Voeller  
CHECKED: J. Karp  
CHECK DATE: 10/18/2019

Figure A-29

# RECORD OF BOREHOLE BH-29

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
 PROJECT NUMBER: 1773748 DRILLING DATE: 09/16/2019 ELEVATION: n/a  
 LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19302° N 149.90009° W



DEPTH SCALE: 1 inch to 3.75 feet  
 DRILLING CONTRACTOR: Discovery Drilling Inc.  
 DRILLER: J. Saunders

LOGGED: T. Voeller  
 CHECKED: J. Karp  
 CHECK DATE: 10/18/2019

Figure  
A-30

1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMathers 11/20/19

# RECORD OF BOREHOLE BH-30

SHEET 1 of 1

PROJECT: West 32nd Avenue & East 33rd Avenue Upgrades CLIENT: CRW Engineering Group, LLC DATUM: NAD 83  
 PROJECT NUMBER: 1773748 DRILLING DATE: 09/16/2019 ELEVATION: n/a  
 LOCATION: Anchorage, AK EQUIPMENT: CME-75, Truck Mount COORDS: 61.19302° N 149.89862° W

DEPTH (ft)		BORING METHOD	SOIL PROFILE				SAMPLES				UNCORRECTED BLOWS / ft ■		NOTES TESTS WATER LEVELS
			DESCRIPTION	ICE BOND	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS / 6 in. REC ATT (in.)	SALINITY (ppt) Δ WATER CONTENT (%)		
											W <sub>p</sub>   <sup>W</sup>   W <sub>L</sub>		
0	4.25 Inch ID Hollow Stem Auger	0.0 - 0.3 Asphalt (4-inches thick)				0.3	1	GB			○	PID = 2.3 ppm, Gravel = 21%, Sand = 55%, Fines = 23.7%, MA	
		0.3 - 5.0 Compact, moist, orangish-brown, SILTY SAND with gravel; fine to coarse-grained sand, little subrounded gravel up to 0.75 inch diameter, little silt (SM, F2) [FILL]		SM			2	SS	7 8 8	18 18	○ ■	PID = 0.3 ppm	
5		5.0 - 15.8 Compact to dense, moist, brown and gray, poorly graded SAND; fine to coarse-grained sand, trace to few subrounded gravel up to 0.5 inch diameter, trace silt (SP)				5.0	3	SS	6 9 15	18 18	○ ■	PID = 0.6 ppm	
							4	SS	5 7 7	18 18	○ ■	PID = 0.6 ppm	
10		Sand particle size coarsens with depth from 10 feet		SP			5	SS	8 12 24	18 18	○ ■	PID = 0.3 ppm	
15		15.8 - 16.5 Very stiff, wet, gray, sandy SILT; some fine-grained sand (ML)		ML		15.8	6	SS	5 12 14	18 18	○ ■	PID = 0.4 ppm	
		Borehole completed at 16.5 ft.										PID = 0.5 ppm, Gravel = 0%, Sand = 45%, Fines = 55.5%	
		NOTES: 1) Groundwater observed at 15 feet below ground surface during drilling. 2) The borehole was backfilled with cuttings and tamped with the rig and rods, then capped with cold patch asphalt and hand-tamped.											
20													
25													
30													



DEPTH SCALE: 1 inch to 3.75 feet  
 DRILLING CONTRACTOR: Discovery Drilling Inc.  
 DRILLER: J. Saunders

LOGGED: T. Voeller  
 CHECKED: J. Karp  
 CHECK DATE: 10/18/2019

Figure  
 A-31

1773748 MOA TWO ROADS PROJECT.GPJ LIBRARY-ANC(6-17-19).GLB [ANC BOREHOLE AUTO-THERM&WELL] AMathers 11/20/19

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**VI**

**TEMPORARY CONSTRUCTION PERMITS AND EASEMENTS**

Some of the easements or permits obtained for the construction of the project contain restrictions or special considerations. The Contractor shall be responsible for complying with all restrictions or special considerations. The Contractor shall not begin work until all easements or permits necessary for construction of the project have been acquired. The Contractor shall ensure that all easements and permits are available on the job site at all times. The easement and permit notebook containing all final easement parcel maps and permits and restrictions and/or special considerations shall be provided to Contractor prior to construction.

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**VII**

**EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS**



# **EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS**

## **CONTRACT COMPLIANCE SPECIFICATIONS**

Every municipal contract shall include language substantially the same as the following: The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, age, sex, sexual orientation, gender identity, marital status, or physical or mental disability. The contract will comply with all laws concerning the prohibition of discrimination including, but not limited to, Title 5 and Title 7 of the Anchorage Municipal Code.

Every municipal contract shall state, in all solicitations or advertisements for employees to work under the contract, that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, ancestry, age, sex, sexual orientation, gender identity, marital status, or physical or mental disability.

95% SUBMITTAL - NOT FOR CONSTRUCTION (2020)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**VIII**

**MINIMUM RATES OF PAY**

## Laborers' & Mechanics' Minimum Rates of Pay

Title 36. Public Contracts AS 36.05 & AS 36.10 Wage & Hour Administration Pamphlet No. 600 (Pamphlet 600) is hereby incorporated in its entirety. Pamphlet 600 is available for free download at <http://labor.state.ak.us/lss/pamp600.htm>.

The Municipality of Anchorage will include a paper copy of the wage rates in the signed Contract.

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**IX**

**CONTRACT**

# CONTRACT

Invitation to Bid No. **2019C**\_\_\_\_\_

Contract No. **C-2019**\_\_\_\_\_

NAME AND ADDRESS OF CONTRACTOR:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Check appropriate box:

☒ Incorporated in the State of

MUNICIPALITY OF ANCHORAGE, acting through \_\_\_\_\_ (hereinafter the Owner).

Contract for \_\_\_\_\_

**BID SCHEDULES**

**ITEMS**

**PLAN SHEET**  
**FILE NUMBERS**

**AMOUNT**

\$ \_\_\_\_\_

Total Amount : \$ \_\_\_\_\_

THIS CONTRACT, entered into by the MUNICIPALITY OF ANCHORAGE, ALASKA, acting through the Owner named above, and the individual, partnership, or corporation named above, hereinafter called the Contractor, WITNESSETH that the parties hereto do mutually agree as follows:

Statement of Work: The Contractor shall furnish all labor, equipment and materials and perform the Work above described, for the amount stated, in strict accordance with the Contract Documents.

## CONTRACT DOCUMENTS

- I. This CONTRACT consisting of 4 pages.
- II. The Bid Proposal Section \_\_\_\_ consisting of \_\_\_\_ pages numbered as \_\_\_\_, **as contained in ITB 2019C**\_\_\_\_\_.
- III. The Contract Performance and Payment Bond \_\_\_\_\_.
- IV. The Contractor's Certificate of Insurance Dated \_\_\_\_\_.
- V. Municipality of Anchorage Standard Specifications dated 2015 (MASS) Incorporated by Reference, **as contained in ITB 2019C**\_\_\_\_\_.
- VI. Specifications consisting of the following:  
  
Supplemental Provisions Section \_\_\_\_ consisting of \_\_\_\_ pages, with attachments Exhibit A through F, **as contained in ITB 2019C**\_\_\_\_\_.
- VII. Equal Opportunity Special Provisions and Forms Section \_\_\_\_ consisting of \_\_\_\_ pages, **as contained in ITB 2019C**\_\_\_\_\_.
- VIII. Disadvantaged/Women-Owned Business Enterprise (DBE/WBE) Specification Section \_\_\_\_ consisting of \_\_\_\_ pages, **as contained in ITB 2019C**\_\_\_\_\_.
- IX. The Laborers' and Mechanics' Minimum Rates of Pay dated September 1, 2015 Section \_\_\_\_ consisting of \_\_\_\_ pages, **as contained in ITB 2019C**\_\_\_\_\_.
- X. Submittal List Section \_\_\_\_ consisting of \_\_\_\_ page, **as contained in ITB 2019C**\_\_\_\_\_.
- XI. The Drawings consisting of \_\_\_\_ sheets numbered \_\_\_\_\_, **as contained in ITB 2019C**\_\_\_\_\_.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the Contract Date entered below.

MUNICIPALITY OF ANCHORAGE, ALASKA      VENDOR \_\_\_\_\_

BY \_\_\_\_\_  
Signature

BY \_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Purchasing Officer or designee  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date of Signature

Date of Signature and Contract Date:  
\_\_\_\_\_

## **CONTRACT AND PERFORMANCE AND PAYMENT BOND SIGNATURE INSTRUCTIONS**

1. The full name and business of the Contractor shall be inserted on Page 1 of the Contract and on the Performance and Payment Bond, hereinafter the Bond.
2. Two copies of the Contract and the Bond shall be manually signed by the Contractor. If the Contractor is a partnership or joint venture, all partners or joint ventures shall sign the Contract and the Bond except that one partner or one joint venturer may sign for the partnership or joint venture when all other partners or joint venturers have executed a Power-of-Attorney authorizing one partner or joint venturer to sign. The Power-of-Attorney shall accompany the executed contract and the Bond.
3. If the Contractor is a corporation, the President of the corporation shall execute the Contract and the Bond unless a Power-of-Attorney or corporate resolution shall accompany the executed Contract and Bond.
4. The Bond shall be returned to the Purchasing Division undated. The Contract Date shall be inserted on the Contract when the Municipality signs the Contract and the Bond shall be dated the same as the Contract Date.



**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**X**

**CONTRACT PERFORMANCE AND PAYMENT BOND**

## CONTRACT PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, That we \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_  
as Principal, and \_\_\_\_\_  
a corporation organized under the laws of the \_\_\_\_\_  
\_\_\_\_\_ and authorized to transact surety business in  
the State of Alaska, of \_\_\_\_\_  
as Surety, are held and firmly bound unto the MUNICIPALITY OF ANCHORAGE, as Obligee, in  
the full and just sum of \_\_\_\_\_  
(\$ \_\_\_\_\_) Dollars, lawful money of the UNITED STATES,  
for the payment which, well and truly to be made, we bind ourselves, our heirs, executors,  
administrators, successors and assigns, jointly and severally, firmly by these presents.  
THE CONDITIONS OF THIS OBLIGATION IS SUCH, that whereas the principal has entered into  
a certain contract dated the \_\_\_\_\_ date of \_\_\_\_\_  
20\_\_\_\_\_, with the Obligee for the construction of \_\_\_\_\_  
\_\_\_\_\_

which contract is hereby referred to and made a part hereof as fully and to the same extent as if  
copied at length herein.

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings,  
covenants, terms, conditions, and agreements of said contract, and shall promptly make  
payments to all persons supplying labor and material in the prosecution of the work provided for  
in said contract, during the original term of said contract and any extensions or modifications  
thereof that may be granted by the Municipality, with or without notice to the Surety, then this  
obligation to be void; otherwise to remain in full force and effect.

This obligation is made for the use of said Obligee and also for use and benefit of all persons who  
may perform any work or labor or furnish any material in the execution of said Contract and may  
be sued on thereby in the name of said Obligee.

The said Surety, for the value received, hereby stipulates and agrees that no change, extension  
of time, alteration or addition to the terms of the contract or to the work to be performed  
thereunder or the specifications accompanying the same, shall in anywise affect its obligations on  
this bond, and it does hereby waive notice of any such change, extension of time, alteration or  
addition to the terms of the contract or to the work or to the specifications.

Whenever Principal shall be, and declared by Obligee to be in default under the Contract the Obligee having performed Obligee's obligations thereunder, the Surety may promptly remedy the default or shall promptly:

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for submission to Obligee for completing the Contract in accordance with its terms and conditions and upon determination by Surety of the lowest responsible bidder, or, if the Obligee elects, upon determination by Obligee and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Obligee and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price but not exceeding, including other costs and damages for which the Surety may be liable hereunder the amount set forth in the first paragraph hereof. The term "balance of the contract price" as used in this paragraph, shall mean the total amount payable by Obligee to Principal under the Contract and any amendments thereto, less the amount properly paid by Obligee to Principal.

IN TESTIMONY WHEREOF, the parties hereunto have caused the execution hereof in \_\_\_\_\_  
\_\_\_\_\_ original counterparts as of the \_\_\_\_\_ day of \_\_\_\_\_,  
20\_\_\_\_\_.

WITNESS AS TO PRINCIPAL:

\_\_\_\_\_

(AFFIX CORPORATE SEAL)

\_\_\_\_\_  
Principal Name

\_\_\_\_\_  
Principal Signature

\_\_\_\_\_  
Corporate Surety

\_\_\_\_\_  
Surety Business Address

BY: \_\_\_\_\_

(Attorney-In-Fact)

(AFFIX SURETY SEAL)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**XI**

**CERTIFICATE OF INSURANCE**

95% SUBMITTAL - NOT FOR CONSTRUCTION (SEPT 2020)



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	NAIC #	
	INSURER A :	
INSURED	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

**COVERAGES**

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY						EACH OCCURRENCE \$
	COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence) \$
	CLAIMS-MADE <input type="checkbox"/> OCCUR <input type="checkbox"/>						MED EXP (Any one person) \$
							PERSONAL & ADV INJURY \$
							GENERAL AGGREGATE \$
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG \$
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						\$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident) \$
	ANY AUTO						BODILY INJURY (Per person) \$
	ALL OWNED AUTOS						BODILY INJURY (Per accident) \$
	HIRED AUTOS						PROPERTY DAMAGE (Per accident) \$
							\$
	UMBRELLA LIAB						EACH OCCURRENCE \$
	EXCESS LIAB						AGGREGATE \$
	DED <input type="checkbox"/> RETENTION \$ <input type="checkbox"/>						\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER <input type="checkbox"/>
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)						E.L. EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$
							E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

## ADDITIONAL INSURED:

1. ADDITIONAL INSURANCE: The Municipality of Anchorage is an additional insured on all policies, and shall contain a WAIVER OF SUBROGATION against the Municipality except Professional Liability and Worker's Compensation.
2. CANCELLATION: "Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the Policy Provisions."

**CERTIFICATE HOLDER****CANCELLATION**

	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

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**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**XII**

**BID BOND**

## BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, \_\_\_\_\_  
as Principal, and \_\_\_\_\_ a  
corporation organized under the laws of the \_\_\_\_\_ and  
authorized to transact surety business in the State of Alaska, of \_\_\_\_\_  
\_\_\_\_\_ as Surety, are held and firmly bound unto the MUNICIPALITY OF  
ANCHORAGE, as Obligee, in the full and just sum of \_\_\_\_\_  
\_\_\_\_\_ (\$ \_\_\_\_\_) Dollars, lawful  
money of the UNITED STATES, for the payment of which sum, well and truly to be made, we bind  
ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly  
by the presents.

WHEREAS, the said Principle is herewith submitting its proposal for \_\_\_\_\_  
\_\_\_\_\_.

The condition of this obligation is such that if the aforesaid Principal will, within the time required enter  
into a formal contract and give a good and sufficient bond to secure the performance of the terms and  
conditions of the contract, then this Obligation to be void; otherwise the Principal and Surety will pay  
unto to the Obligee the amount stated above.

Signed, sealed, and delivered \_\_\_\_\_, 20\_\_\_\_\_.

WITNESS AS TO PRINCIPAL:

\_\_\_\_\_

(AFFIX CORPORATE SEAL)

\_\_\_\_\_  
Contractor Name

\_\_\_\_\_  
Contractor Signature

\_\_\_\_\_  
Corporate Surety

\_\_\_\_\_

\_\_\_\_\_  
Surety Business Address

BY: \_\_\_\_\_  
(Attorney-In-Fact)

(AFFIX SURETY SEAL)

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**XIII**

**BIDDER'S CHECKLIST**



# BIDDER'S CHECKLIST

## INSTRUCTIONS TO BIDDER

### I. GENERAL

Bidders are advised that, notwithstanding any instructions or implications elsewhere in this Invitation to Bid, only the documents shown and detailed on this sheet need be submitted with and made part of their bid. Other documents may be required to be submitted after bid time, but prior to award. Bidders are hereby advised that failure to submit the documents shown and detailed on this sheet shall be justification for rendering the bid nonresponsive. Evaluation of bids for responsiveness shall be accomplished in accordance with Anchorage Municipal Code, Title 7.

### II. REQUIRED DOCUMENTS FOR BID:

NOTE: Only the following listed items as marked with an "X" are required to be completely filled out and submitted with the bid.

- X   Bid proposal consisting of twelve (12) pages numbered BP-1 through BP-12. BP-2 of 12 must be manually signed.
- X   Erasures or other changes made to the Bid Proposal Sheet must be initialed by the person signing the bid.
- X   Bid bond, certified check, cashiers check, money order or cash shall be submitted with the bid in the amount indicated.
- X   All Addenda issued shall be acknowledged in the space provided on the Bid Proposal sheet or by manually signing the Addenda sheet and submitting it prior to the bid opening in accordance with Anchorage Municipal Code 7.20.020C.

### III. REQUIRED DOCUMENTS AFTER BID OPENING:

The following documents are required within five (5) working days of notification by the Purchasing Office. Failure, in whole or in part, to submit the documents required below shall be grounds to determine the Bidder as non-responsive.

- X   In accordance with AO No. 2019-013 (S), Anchorage Municipal Code 7.20.030 and 7.20.070, Contractor Questionnaire consisting of three (3) Pages, Prime Contractor Form Filled out by Prime Contractor **and** all known subcontractors.

NOTICE: As of December 3, 2019 there are new requirements for determining contractor responsibility. Please review AO No. 2019-130 (S), AMC 7.20.030 and 7.20.070, and the attached Contractor Questionnaire before submitting a bid.

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**XIV**

**BID PROPOSAL**

**BID PROPOSAL**  
(CERTIFICATION)

TO: MUNICIPALITY OF ANCHORAGE \_\_\_\_\_, 2020  
PURCHASING DEPARTMENT  
632 W. 6TH AVENUE, SUITE 520  
ANCHORAGE, ALASKA 99501

SUBJECT: Invitation to Bid No. **2020C0**

PROJECT TITLE: **W. 30TH AVENUE & NORTH STAR STREET UPGRADES - SPENARD ROAD TO ARCTIC BOULEVARD**

Pursuant to and in compliance with subject Invitation to Bid, and other bid documents relating thereto, the bidder hereby proposes to furnish all labor and materials and to perform all work for the construction of the above referenced project in strict accordance with the bid documents at the prices established in the Bid Proposal, pages **BP-1 of 12 through BP-12 of 12** submitted herewith.

The bidder agrees, if awarded the contract, to commence and complete the work within the time specified in the bid documents.

The bidder acknowledges receipt of the following addenda:

Addenda No. \_\_\_\_\_ Date of Addenda \_\_\_\_\_

Addenda No. \_\_\_\_\_ Date of Addenda \_\_\_\_\_

Addenda No. \_\_\_\_\_ Date of Addenda \_\_\_\_\_

Enclosed is a Bid Bond in the amount of \_\_\_\_\_  
(Dollar Amount or Percentage of Bid)

**Type of Business Organization**

The bidder, by checking the applicable box, represents that it operates as ( ) a corporation incorporated under the laws of the State of \_\_\_\_\_, ( ) an individual, ( ) an LLC, ( ) a partnership, ( ) a nonprofit organization, or ( ) a joint venture. If a partnership or joint venture, identify all parties on a separate page.

\_\_\_\_\_  
Company Name

**BID PROPOSAL**  
(CERTIFICATION)  
Continued

SUBJECT: Invitation to Bid No. **2020C0**

PROJECT TITLE: **W. 30TH AVENUE & NORTH STAR STREET UPGRADES- SPENARD ROAD  
TO ARCTIC BOULEVARD**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Alaska Contractor's License Number

\_\_\_\_\_  
Company Name (Printed)

\_\_\_\_\_  
Employer's Tax Identification Number

\_\_\_\_\_  
Authorized Representative Signature

\_\_\_\_\_  
Printed Name & Title

\_\_\_\_\_  
Company **Mailing** Address

\_\_\_\_\_  
Company Phone Number

\_\_\_\_\_  
City, State, Zip Code

\_\_\_\_\_  
Company Fax Number

\_\_\_\_\_  
Company **Physical** Address  
(if different from mailing address)

\_\_\_\_\_  
Company Email Address

\_\_\_\_\_  
City, State, Zip Code

**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal**

**BASE BID**

<b>Schedule</b>	<b>Description</b>	<b>Bid Amount</b>
A	Roadway Improvements	
B	Drainage Improvements	
C	Illumination & Signalization Improvements	
D	Landscaping Improvements	

**Total Project:** \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

# W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard

MOA Project No. 20-24

## Bid Proposal

### Schedule: A Roadway Improvements

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
A-1	20.02 95.04	Storm Water Pollution Prevention Plan (Type 3) Per LS	1		
A-2	20.03 95.04	Test Pit for Utility Locate Per Hour	12		
A-3	20.04 95.04	Clearing and Grubbing Per LS	1		
A-4	20.07 95.04	Remove Sidewalk or Concrete Apron Per SY	177		
A-5	20.08	Remove Curb and Gutter Per LF	1,748		
A-6	20.09 95.04	Remove Pavement Per SY	7,944		
A-7	20.10 95.04	Unusable Excavation Per CY	14,100		
A-8	20.16 95.04	Self-Compacting Bedding Per Ton	430		
A-9	20.21 95.04	Classified Fill and Backfill (Type II) Per Ton	8,700		
A-10	20.21 95.04	Classified Fill and Backfill (Type II-A) Per Ton	13,500		
A-11	20.22 95.04	Leveling Course Per Ton	940		
A-12	20.25	Geotextile (Type A) Per SY	11,220		
A-13	20.26 95.04	Insulation Board (R-4.5) Per SF	4,730		
A-14	20.26 95.04	Insulation Board (R-9) Per SF	73,650		
A-15	30.02	P.C.C. Curb and Gutter (All Types) Per LF	4,131		
A-16	30.02	Curb Nose Per EA	2		
A-17	30.02	P.C.C. Curb & Gutter (Type 1, Steel Curb Facing) Per LF	25		
A-18	30.03 95.04	P.C.C. Sidewalk (4" Thick, Standard Finish) Per SY	743		
A-19	30.03 95.04	P.C.C. Sidewalk (6" Thick, Standard Finish) Per SY	539		

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal****Schedule: A Roadway Improvements**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
A-20	30.04 95.04	P.C.C. Curb Ramp (6" Thick) Per EA	14		
A-21	30.04 95.04	Detectable Warnings Per SF	164		
A-22	30.05 95.04	P.C.C. Structure/Retaining Wall Class (AA-3) Per CY	140		
A-23	30.10 95.04	Colored Concrete (4" Thick, Red, Running Bond Tile Pattern) Per SY	28		
A-24	30.10 95.04	Colored Concrete (6" Thick, Red, Running Bond Tile Pattern) Per SY	159		
A-25	40.06	A.C. Pavement (Class D) Per Ton	520		
A-26	40.06	A.C. Pavement (Class E) Per Ton	940		
A-27	50.03	Construct Sanitary Sewer Manhole (Type A) Per EA	1		
A-28	50.06 95.04	Remove and Replace Manhole Cone Section Per EA	1		
A-29	50.06 95.04	Remove and Replace Manhole Cover and Frame Per EA	2		
A-30	50.06 95.04	Remove Existing Sanitary Sewer Cleanout Per EA	1		
A-31	50.07	Sewer Line Cleaning for CCTV Per LF	1,302		
A-32	50.07	Condition Assessment CCTV Per LF	1,302		
A-33	55.07	Adjust Storm Drain Manhole Cone Per EA	1		
A-34	55.08	Adjust Storm Drain Manhole Ring Per EA	3		
A-35	60.03 95.04	Remove and Replace Valve Box Top Section Per EA	6		
A-36	60.04	Furnish and Install Fire Hydrant Assembly Single Pumper Per EA	1		
A-37	60.05	Adjust Key Box Per EA	19		

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

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# W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard

MOA Project No. 20-24

## Bid Proposal

### Schedule: A Roadway Improvements

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
A-38	60.08	Decommission Fire Hydrant Assembly (Single Pumper) Per EA	1		
A-39	65.02	Construction Survey Measurement Per LS	1		
A-40	65.02	Two-Person Survey Crew Per Hour	40		
A-41	70.08 95.04	Remove and Reset Fence Per LF	1,184		
A-42	70.08 95.04	Remove Fence Per LF	33		
A-43	70.08 95.04	Remove and Reset Gate Per LS	1		
A-44	70.10 95.04	Traffic Markings (4" Solid White) Per LF	399		
A-45	70.10 95.04	Traffic Markings (AWWU Driveway Markings) Per EA	2		
A-46	70.10 95.04	Inlaid Traffic Markings (Methyl Methacrylate) (4" Yellow) (125 Mil) Per LF	6,494		
A-47	70.10 95.04	Inlaid Traffic Markings (Methyl Methacrylate) (4" White) (125 Mil) Per LF	5,025		
A-48	70.10 95.04	Inlaid Traffic Markings (Methyl Methacrylate) (24" White) (125 Mil) Per LF	250		
A-49	70.10 95.04	Inlaid Traffic Markings (Methyl Methacrylate) (Bike Symbols) (125 Mil) Per EA	20		
A-50	70.11 95.04	Remove and Relocate Signs Per EA	4		
A-51	70.11 95.04	Standard Sign Per SF	252		
A-52	70.12 95.04	Traffic Maintenance Per LS	1		
A-53	70.13	Bollard (Wood) Per EA	96		
A-54	70.13	Removable Bollard (Rectangular, Steel) Per EA	3		
A-55	70.13	Remove Bollard Per EA	2		
A-56	70.17	Relocate Mailbox Per EA	1		

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_



**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal**

**Schedule: A Roadway Improvements**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
A-57	70.18	Chain Link Fence (6', 9 Gage) Per LF	21		
A-58	70.22 95.04	Removal/Disposal And/Or Salvage of Obstructions Per LS	1		
A-59	70.24 95.04	Temporary Fencing Per LF	44		
A-60	75.12 95.04	Temporary Tree Protection Fence Per LF	504		

Total Schedule A \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal**

**Schedule: B Drainage Improvements**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
B-1	20.13	Trench Dewatering Per LS	1		
B-2	20.13 95.04	Trench Excavation and Backfill (Various Depths) Per LF	1,304		
B-3	20.15	Furnish Trench Backfill (Type II) Per Ton	516		
B-4	20.16	Bedding Material (Class D) Per LF	1,304		
B-5	20.27	Disposal of Unusable or Surplus Material Per CY	732		
B-6	55.02 95.04	Furnish, Install, and Televis Pipe (12-Inch, Type S, CPEP) Per LF	761		
B-7	55.02 95.04	Furnish, Install, and Televis Pipe (15-Inch, Type S, CPEP) Per LF	228		
B-8	55.02 95.04	Furnish, Install, and Televis Pipe (18-Inch, Type S, CPEP) Per LF	315		
B-9	55.04 95.04	Connect to Existing Storm Drain System Per EA	4		
B-10	55.05 95.04	Construct (Type I) Manhole Per EA	3		
B-11	55.05 95.04	Construct (Type II) Manhole Per EA	2		
B-12	55.05 95.04	Construct (Type I) Catch Basin Manhole Per EA	2		
B-13	55.05 95.04	Construct (Type II) Catch Basin Manhole Per EA	4		
B-14	55.05 95.04	Construct (Type II) Bypass Manhole Per EA	1		
B-15	55.09 95.04	Construct Catch Basin Per EA	12		
B-16	55.11	Remove Manhole Per EA	4		
B-17	55.11	Remove Catch Basin Per EA	6		
B-18	55.13	Abandon Catch Basin Lead Per EA	1		
B-19	55.22 95.04	Oil and Grit Separator (Stormceptor STC 450i) Per EA	1		

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal**

**Schedule: B Drainage Improvements**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
B-20	55.27 95.04	Storm Drain Bypass System Per LS	1		
B-21	70.07 95.04	Remove Pipe Per LF	750		

Total Schedule B \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal****Schedule: C Illumination & Signalization Improvements**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
C-1	80.01 95.04	Temporary Illumination Per LS	1		
C-2	80.01 95.04	Temporary Signalization Per LS	1		
C-3	80.02	Trench and Backfill (2'W x 3.5'D) Per LF	2,690		
C-4	80.04 95.04	Driven Pile Luminaire Pole Foundations Per EA	4		
C-5	80.04 95.04	Helical Pile Luminaire Pole Foundations Per EA	9		
C-6	80.04 95.04	Helical Pile Luminaire Pole Foundation Extension Per LF	45		
C-7	80.04 95.04	Load Center Foundation (Type 1A) Per EA	1		
C-8	80.04 95.04	Cast-In-Place Light Column Foundation Per EA	8		
C-9	80.05	Fixed Base Luminaire Pole Per EA	13		
C-10	80.06	Luminaire Arm Per EA	16		
C-11	80.07	Steel Conduit (2 inch) Per FT	2,800		
C-12	80.08 95.04	Remove Junction Box Per EA	2		
C-13	80.08 95.04	Junction Box (Type IA) Per EA	22		
C-14	80.08 95.04	Junction Box (Type II) Per EA	1		
C-15	80.10 95.04	7 Conductor 14 AWG IMSA 20-1 Cable Per LF	230		
C-16	80.10 95.04	Conductor, Communication Cable Per LF	94		
C-17	80.10	3 Conductor 8 AWG Type XHHW-2 Cable Per FT	2,500		
C-18	80.10	3 Conductor 6 AWG Type XHHW-2 Cable Per FT	670		
C-19	80.14	Single-Meter Pad-Mount Load Center, Type 1A with Lighting Control Per EA	1		

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

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**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal****Schedule: C Illumination & Signalization Improvements**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
C-20	80.17 95.04	Pan-Tilt-Zoom Camera System Per EA	1		
C-21	80.18 95.04	Install Radar Detecor Per EA	1		
C-22	80.19	12 Inch 3 Face LED Signal Head (Overhead Mount) Per EA	1		
C-23	80.23 95.04	Luminaire (40 LED, Medium, Type 2) Per EA	3		
C-24	80.23 95.04	Luminaire (60 LED, Medium, Type 2) Per EA	10		
C-25	80.23	Luminaire (60 LED, Medium, Type 3) Per EA	1		
C-26	80.23 95.04	Luminaire (80 LED, Medium, Type 3) Per EA	2		
C-27	80.23 95.04	Spare Luminaire (40 LED, Medium, Type 2) Per EA	1		
C-28	80.23 95.04	Spare Luminaire (60 LED, Medium, Type 2) Per EA	1		
C-29	80.23 95.04	Spare Luminaire (60 LED, Medium, Type 3) Per EA	1		
C-30	80.23 95.04	Spare Luminaire (80 LED, Medium, Type 3) Per EA	1		
C-31	80.28	Remove Luminaire Pole Per EA	3		
C-32	80.29 95.04	Pedestrian Light Column (35W) Per EA	6		
C-33	80.29 95.04	Pedestrian Light Column (55W) Per EA	2		
C-34	80.29 95.04	Spare Pedestrian Light Column (35W) Per EA	1		
C-35	80.29 95.04	Spare Pedestrian Light Column (55W) Per EA	1		

Total Schedule C \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

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**W. 30th Avenue & North Star Street Upgrades Spenard Road to Arctic Boulevard**

MOA Project No. 20-24

**Bid Proposal****Schedule: D Landscaping Improvements**

ITEM NO.	SPEC. NO.	WORK DESCRIPTION	EST. QUANT	UNIT BID PRICE	TOTAL BID PRICE
D-1	70.23 95.04	Banner A Per EA	13		
D-2	70.23 95.04	Banner B Per EA	8		
D-3	70.23 95.04	Furnish Surplus Banner A Per EA	2		
D-4	70.23 95.04	Furnish Surplus Banner B Per EA	2		
D-5	75.02 95.04	Extended Maintenance Per LS	1		
D-6	75.02	Tree, Pinus contorta var. latifolia, 6' height Per EA	7		
D-7	75.02	Tree, Betula pendula 'Gracilis', 2" caliper Per EA	11		
D-8	75.02	Shrub, Rosa acicularis, 18" height Per EA	51		
D-9	75.02	Shrub, Spiraea japonica 'Walbura', 18" height Per EA	95		
D-10	75.02	Shrub, Viburnum edule, 18" height Per EA	12		
D-11	75.02	Rock Mulch (4-inch depth) Per CY	58		
D-12	75.03	Topsoil (4-inch depth) Per MSF	24		
D-13	75.04	Seeding, Schedule A Per MSF	9		
D-14	75.04	Seeding, Schedule B Per MSF	15		
D-15	75.06	Furnish and Install Landscape Edging Per LF	438		
D-16	75.13 95.04	Root Pruning Per LF	150		
D-17	75.14 95.04	Moose Protection Fence Per LF	231		

Total Schedule D \_\_\_\_\_

Contractor's Name: \_\_\_\_\_

Date: \_\_\_\_\_

BP12 of BP12

**MUNICIPALITY OF ANCHORAGE  
PROJECT MANAGEMENT AND ENGINEERING DEPARTMENT**

**W. 30TH AVENUE & NORTH STAR STREET UPGRADES  
SPENARD ROAD TO ARCTIC BOULEVARD**

**20-24**

**XV**

**PLANS (91 Sheets)  
Under Separate Cover**