

**CITY OF GREELEY
INVITATION FOR BID**

**2022 STORM SEWER CROSS-CONNECTION
IMPROVEMENTS**

BID #F22-10-094

DUE NOVEMBER 28, 2022 BEFORE 2:00 P.M. MST



Serving Our
Community
It's A Tradition

SECTION 00110
BID #F22-10-094

INVITATION FOR BID

The City of Greeley, Colorado is requesting **sealed** bids for **2022 Storm Sewer Cross-Connection Improvements before November 28, 2022 at 2:00 p.m. (MST)**

Emailed to No late, or faxed bids will be accepted. It is the responsibility of the vendor to ensure the solicitation documents are delivered to the correct address as noted in the Solicitation Documents. Solicitations delivered to other City of Greeley addresses may be deemed as late and not accepted.

The City of Greeley disseminates all bids and requests for proposals through the Rocky Mountain E-Purchasing System site. Go to <http://www.RockyMountainBidSystem.com>, then "Bid Opportunities" and then select "The City of Greeley". Bids submitted to the City of Greeley must include Sections 00120, 00130, 00140 and 00160. Addenda must be acknowledged in Section 00120 of the bidding documents. Bidders failing to acknowledge any and all addenda may be considered non-responsive.

A pre-bid meeting will be held on **November 10, 2022 at 1:00pm MT** at 1001 11th Ave, 2nd Floor, Colorado Room. All prospective bidders are encouraged to attend.

Each bid shall be accompanied, by a certified check drawn on a bank which is insured by the Federal Deposit Insurance Corporation or a bidder's bond executed by a surety company authorized to do business in Colorado, made payable to the City of Greeley, Colorado, in an amount not less than five percent (5%) of the proposal sum as security that the successful bidder will enter into a contract to construct this project in accordance with the plans and specifications, and give bonds in the sum as hereafter provided. Checks accompanying bids not accepted will be returned.

The successful responsive and responsible bidder will be required to furnish a satisfactory performance bond and payment bond in the amount of the contract sum.

No bid shall be withdrawn after the opening of the bids without the consent of the City of Greeley, Colorado, for a period of sixty (60) days after the scheduled time of receiving the bids.

The City of Greeley retains the right to reject any and all bids and to waive any informality as deemed in the best interest of the city.

Questions pertaining to the project may be directed to purchasing@greeleygov.com before November 15, 2022 at 4:00PM (MST).

Schedule of Events (subject to change)	All times are given in local Colorado time
IFB Issued	11/4/2022
Mandatory or Optional Pre-Proposal Conference include date/time and location	11/10/2022 at 1:00 PM MST, 1001 11th Street, 2nd Floor, Colorado Room
Inquiry Deadline	11/15/2022 – by 4:00pm MST
Final Addendum Issued	11/18/2022
Bid Due Date, Bid Opening and Time	11/28/2022 – By 2:00pm MS via MS Teams (See link below)
Interviews (tentative)	TBD
Notice of Award (tentative)	TBD
Notice to Proceed	TBD

City of Greeley, Colorado
Purchasing Division

Section 00120

BID PROPOSAL

PROJECT: F22-10-084 2022 Storm Sewer Cross-Connection Improvements

The Undersigned, having become familiar with the local conditions affecting the cost of the work, plans, drawings, and specifications attached herewith, and with advertisement for bids, the form of bid and proposal, form of bond, all of which are issued and attached and on file in the office of the Project Manager, hereby bid and propose to furnish all the labor, materials, necessary tools, and equipment and all utility and transportation service necessary to perform and complete in a workmanlike manner all of the work required in connection with the construction of the items listed on the bidding schedule in accordance with the plans and specifications as prepared by the City of Greeley, Colorado, for the sums set forth in the Bidding Schedule.

The total bid shall be the basis for establishing the amount of the Performance and Payment Bond for this project. The total bid is based on the quantities shown in the bid proposal form and the dimensions shown on the plans.

The undersigned has carefully checked the Bidding Schedule quantities against the plans and specifications before preparing this proposal and accepts the said quantities as substantially correct, both as to classification and the amounts, and as correctly listing the complete work to be done in accordance with the plans and specifications.

The undersigned, agrees to complete and file a Performance and Payment Bond and further agrees to complete the contract within sixty (60) Calendar Days from Notice to Proceed. Official notice to proceed will not be issued until adequate Performance and Payment Bonds and other required documents are on file with the City of Greeley.

NOTE: Bidders should not add any conditions or qualifying statements to this bid as otherwise the bid may be declared irregular as being non responsive to the Invitation for bids. The following numbered Addenda have been received and the bid, as submitted, reflects any changes resulting from those Addenda: _____

ATTEST

DATE

COMPANY NAME

BY

SIGNATURE

TITLE

Bid Schedule - 2022 Storm Sewer Cross Connection Improvements

Pay Item	Description	Units	Estimated Quantity	Unit Cost	Cost
Site #1: 2401 2nd Avenue (ID-5)			Site Total:	\$	-
A	Mobilization	LS	1	\$ -	\$ -
D	Cap existing drain line at inlet	EA	1	\$ -	\$ -
E	Cap existing service line at manhole	EA	1	\$ -	\$ -
F	Flow fill existing service line and abandon in place	CF	12	\$ -	\$ -
B	Cleanup and restoration	LS	1	\$ -	\$ -
C	Demobilization	LS	1	\$ -	\$ -
Site #2: 701 10th Street (ID-8)			Site Total:	\$	-
A	Mobilization	LS	1	\$ -	\$ -
D	Cap existing drain line at inlet	EA	1	\$ -	\$ -
B	Cleanup and restoration	LS	1	\$ -	\$ -
C	Demobilization	LS	1	\$ -	\$ -
Site #3: 825 10th Street (ID-10)			Site Total:	\$	-
A	Mobilization	LS	1	\$ -	\$ -
D	Cap existing drain line at inlet	EA	1	\$ -	\$ -
G	New downspout routed to parking lot	EA	1	\$ -	\$ -
B	Cleanup and restoration	LS	1	\$ -	\$ -
C	Demobilization	LS	1	\$ -	\$ -
Site #4: 807 8th Street (ID-13)			Site Total:	\$	-
A	Mobilization	LS	1	\$ -	\$ -
D	Cap existing drain line at inlet	EA	1	\$ -	\$ -
G	New downspout routed to parking lot	EA	1	\$ -	\$ -
B	Cleanup and restoration	LS	1	\$ -	\$ -
C	Demobilization	LS	1	\$ -	\$ -
Project Total:				\$	-

COOPERATIVE PURCHASING STATEMENT

The City of Greeley encourages and participates in cooperative purchasing endeavors undertaken by or on behalf of other governmental jurisdictions. To the extent, other governmental jurisdictions are legally able to participate in cooperative purchasing endeavors; the City of Greeley supports such cooperative activities. Further, it is a specific requirement of this proposal or Request for Proposal that pricing offered herein to the City of Greeley may be offered by the vendor to any other governmental jurisdiction purchasing the same products. The vendor(s) must deal directly with any governmental agency concerning the placement of purchase orders, contractual disputes, invoicing, and payment. The City of Greeley shall not be liable for any costs or damages incurred by any other entity.

SECTION 00140

BID BOND

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto the City of Greeley, Colorado, as Owner, in the penal sum of _____ for the Payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors, and assigns.

THE CONDITION of this obligation is such that whereas the Principal has submitted to the City of Greeley, Colorado, the accompanying bid and hereby made a part hereof to enter into a Contract Agreement for the construction of City of Greeley Project,

2022 Storm Sewer Cross-Connection Improvements – Bid #F22-10-094

WHEREAS, the Owner, as condition for receiving said bid, requires that the Principal to deposit with the Owner as Bid Guaranty equal to five percent (5%) of the amount of said bid.

NOW, THEREFORE,

(a) If said bid shall be rejected; or in the alternate,

(b) If said bid shall be accepted and the Principal shall execute and deliver a Contract Agreement (properly completed in accordance with said bid) and shall furnish a Performance and Payment Bond upon the forms prescribed by the Owner for the faithful performance of said Agreement; and shall in all other respects perform the agreement created by the acceptance of said bid;

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals this _____ day of _____, 20_____, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

PRINCIPAL

SURETY

Name: _____

Address: _____

By: _____

Title: _____ Attorney _____

In-Fact:
(Seal)

(Seal)

NOTE: Surety Companies executing bonds must be authorized to transact business in the State of Colorado and be accepted to the Owner.

SECTION 00160

NOTICE OF PRE-BID CONFERENCE

2022 STORM SEWER CROSS-CONNECTION IMPROVEMENTS – BID #F22-10-094

A pre-bid conference will be held:

On November 10, 2022 at 1:00 p.m., at 1001 11th Ave., 2nd Floor Colorado Room. All bidders are highly encouraged to attend.

Representatives of the City of Greeley will be present to answer questions.

Each bidder shall submit the following declaration of attendance, along with the other bid documents.

I have attended the pre-bid conference _____

I have not attended the pre-bid conference _____

Name of Contracting Organization

Authorized Signature

Date

SECTION 00170

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SCOPE OF SERVICES

The scope of services shall include capping and abandoning a total of four (4) storm drain lines identified for each site in the construction drawings. For each site the contractor is required to obtain all necessary permits and to restore all excavated areas to existing conditions. Means and methods for capping and abandonment will vary on a case-by-case basis but in general should follow the Water & Sewer Department standard detail WS-6 attached. If required, the storm drain line upstream of the capped portion will be rerouted to the nearest storm inlet. All work done for each site shall be in accordance with City of Greeley W&S and Streets Specifications, Design and Construction Standards.

The specific scope of services for the improvements of each site are provided below.

A. Site #1: 2401 2nd Avenue (ID-5)

- Cap and abandon existing storm drain/sewer service line at the identified inlet and at the identified tie-in sanitary sewer manhole.
- Flow fill existing service line and abandon in place.
- Form concrete end cap flush with existing surface.
- Cleanup and restore site to existing conditions.

B. Site #2: 701 10th Street (ID-8)

- Cap and abandon existing storm drain line at the identified inlet only.
- Form concrete end cap flush with existing surface.
- Cleanup and restore site to existing conditions.

C. Site #3: 825 10th Street (ID-10)

- Cut and remove existing downspout section and replace with matching section re-routed to drain to parking lot.
- Cap and abandon existing storm drain line at the identified inlet only.
- Form concrete end cap flush with existing surface.
- Cleanup and restore site to existing conditions.

D. Site #4: 807 8th Street (ID-13)

- Cut and remove existing downspout section and replace with matching section re-routed to drain to parking lot.
- Cap and abandon existing storm drain line at the identified inlet only.
- Form concrete end cap flush with existing surface.
- Cleanup and restore site to existing conditions.

1.2 BID SCHEDULE

The bid schedule for each site provided in Section 00120.

1.3 PROTECTION AND RESTORATION

- A.** Replace to equal or better conditions all items removed and replaced or damaged during construction. Restore all areas disturbed to match surrounding surface conditions. Also see tree protection standards

1.4 CONSTRUCTION HOURS

- A.** Construction hours, except for emergencies, shall be limited to 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise authorized in writing by the City.
- B.** Any work performed by the Contractor outside of the construction hours, whether or not authorized by the City, shall entitle the City to deduct from compensation due to the Contractor sufficient funds to cover the City's costs in providing field engineering and/or inspection services because of such work. The cost for field engineering and inspection shall be \$50.00 per hour.

1.5 SCHEDULE

- A.** Construction Schedule shall begin after the Notice to Proceed is issued, estimated date is Monday December 12, 2022.
- B.** The work for all site described in the Scope of Services section shall be completed no later than 90 days after Notice to Proceed is issued.

1.6 NOTICE TO PRIVATE OWNERS AND AUTHORITIES

- A.** Notify private owners of adjacent property, utilities, irrigation canal, and affected governmental agencies when prosecution of the Work may affect them.
- B.** Give notification 72 hours in advance to enable affected persons to provide for their needs when it is necessary to temporarily deny access or services.
- C.** Contact utilities at least 72 hours prior excavating near underground utilities.
- D.** Contact all agencies at least 72 hours prior to start of construction. Notify all agencies of the proposed scope of work schedule and any items which would affect their daily operation.
- E.** Michael Castillo and John Goin will be the Project Engineers for the City.

Michael Castillo	Office: 970-350-9806 Cell: 970-381-8381
John Goin	Office: 970-350-9826 Cell: 970-415-1307

- F.** Names and telephone numbers of affected property owners will be provided to selected Contractor.

1.7 REGULATIONS FOR STREET CONSTRUCTION

A. PERMITS REQUIRED

All required construction and ROW permits shall be obtained prior to commencement of any construction. All fees for said permits will be paid for by the City Water & Sewer Department.

B. PROJECT OBSERVATION AND REVIEW

All construction and installations shall be subject to observation and review by the Engineer. Certain types of work may have continuous observation and review.

It shall be the responsibility of the person performing the work authorized by the permit to notify the City that such work is ready for observation and review. The City requires that every request for observation and review is to be received one working day before such service is desired. Such requests shall be made by telephone to the Project Engineer at 970-381-8381, Monday through Friday between 8:00 A.M. and 4:00 P.M.

The Contractor shall not work and/or request observation outside the specified construction hours, unless otherwise authorized in writing by the City. The City shall have total control when determining the need for observation and review of any work.

The City may make or require other observations and reviews of any work as deemed necessary to ascertain compliance with the City's Development Standards, Design and Construction Standards, or other standard specifications and codes.

C. CONFORMITY OF WORK AND MATERIALS

1. All work performed and all materials furnished shall be within the lines, grades, cross sections, dimensions, and material requirements, including applicable tolerances, shown on the plans, or indicated in these criteria and specifications.
2. It shall be the responsibility of each individual Contractor/Owner to keep the work area clean during the prosecution of the work.

D. PROTECTION OF EXISTING UNDERGROUND UTILITIES

The Contractor shall, at all times, take proper precautions for the protection of utilities, the presence of which are known or can be determined by field location of the utility companies. The Contractor shall be responsible for all expenses relating to damage to utilities. Hand-excavation shall be used whenever necessary. It is the Contractor's responsibility to call for utility locates and abide by those requirements as outlined by State Statutes. Call UNCC at 1-800-922-1987 for locates.

E. PRESERVATION OF PROPERTY

Existing improvements, adjacent property, utilities, trees and plants that are not to be removed shall be protected from injury or damage resulting from the Contractor/Owner's operations.

F. PROTECTION OF PUBLIC AND PRIVATE INSTALLATIONS

The Contractor shall, at all times, take proper precautions for the protection of driveway culverts, street intersection culverts or aprons, irrigation crossings, mailboxes, driveway approaches, temporary or permanent street markings, signage, and all other identifiable installations that may be encountered during construction. The Contractor/Owner shall be responsible for all expenses relating to damage to public and private installations.

G. CONFLICTS/QUESTIONS

When conflicts and/or questions arise between the accepted plans, specifications, development standards, referenced standards, or other contract documents, the City shall make the final decision concerning such matters.

SECTION 00180

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 DESCRIPTION

- A.** This Section covers methods of measurements and payment for items of Work.
1. Owner will not pay for defective work and will not pay for repair or additional work required to bring the projects to a point of acceptance.

B. BID PRICE

1. The Total Bid Price covers all Work required by the Contract Documents.
 - a. All work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of Contractor and all costs in connection therewith shall be included in the prices bid for the various items of Work.
2. Unit prices shall include all costs in connection with the proper successful completion of the Work, including furnishing all materials, equipment, and tools; and performing all labor and supervision to fully complete the Work.
3. Unit prices shall govern over extensions of sums.
4. Unit prices shall not be subject to renegotiation.

C. ESTIMATED QUANTITIES.

1. All quantities stipulated in the Bid Form at unit prices are approximate and are to be used only as a basis for estimating the probable cost of the Work and for the purpose of comparing the bids submitted for the Work. The basis of payment shall be the actual quantity of material furnished and Work done.
2. Contractor agrees that he will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amount of Work actually performed and materials actually furnished and the estimated amount, therefore.
3. Owner reserves the right to decrease, increase, or delete units of work.

1.2 PAY ITEMS

A. MOBILIZATION

No measurement for payment shall be made for any of the work, materials, and equipment required for mobilization. The lump sum bid price shall include all the CONTRACTOR's costs of whatsoever nature are required to begin work on the project including site management and full-time supervision, labor, material, and any incidental work and equipment necessary for mobilization of personnel, equipment, and supplies at the project site. This item includes installation of temporary fencing around project work areas, and any other fencing/security items as deemed necessary by the CONTRACTOR. This item shall also include the establishment of other necessary facilities not specifically defined as a separate pay item, and all other costs incurred of labor and operations which must be performed prior to beginning the other items under this Contract including public coordination. This item also includes obtaining permits and CONTRACTOR testing. This item may also include provision of required bonds,

insurance, and preparation of the project schedule.

Payment will be made as the work progresses.

<u>Pay Item</u>	<u>Pay Unit</u>
Mobilization	LS

B. CLEANUP AND RESTORATION

No measurement for payment shall be made for any of the work, materials, and equipment required for cleanup and restoration. This lump sum (LS) price shall include all costs to perform all work necessary to remove, restore, install, and replace all above grade improvements including but not limited to curb, gutter, sidewalk, pavement, signs, fences, gates, and all other items not covered elsewhere in the bid form and any other miscellaneous items and work shown or reasonably implied on the Drawings and in the Specifications for this work, and elsewhere in the Contract Documents.

Payment will be made as the work progresses.

<u>Pay Item</u>	<u>Pay Unit</u>
Cleanup and Restoration	LS

C. DEMOBILIZATION

No measurement for payment shall be made for any of the work, materials, and equipment required for demobilization. The lump sum bid price shall include all the CONTRACTOR's costs of whatsoever nature including site management and full-time supervision, labor, material, and any incidental work and equipment necessary for demobilization of personnel, equipment, and supplies at the project site. The removal of the CONTRACTOR's equipment, supplies, excess materials, and cleanup of the site are also included in this item.

Payment will be made as the work progresses.

<u>Pay Item</u>	<u>Pay Unit</u>
Demobilization	LS

D. INLET CAPPING

The measurement for payment for each pay item will be on a unit price basis. The unit price includes but is not limited to furnishing and placement of materials and labor required to install the wingnut plug with concrete cap in accordance with the Drawings and Specifications.

The work includes but is not limited to furnishing and installing wingnut plug with concrete cap and grade top of concrete cap to existing grade and sloping if necessary. This includes all other necessary materials, work, and equipment required to construct the pay item in accordance with the Drawings and Specifications.

Payment shall be made based on the actual quantity of concrete collars constructed.

<u>Pay Item</u>	<u>Pay Unit</u>
Inlet Capping	EA

E. OUTLET CAPPING AT MANHOLE

The measurement for payment for each pay item will be on a unit price basis. The unit

price includes but is not limited to furnishing and placement of materials and labor required to install the wingnut plug with concrete cap in accordance with the Drawings and Specifications.

The work includes but is not limited to furnishing and installing all other necessary materials, work, and equipment required to construct the pay item in accordance with the Drawings and Specifications.

Payment shall be made based on the actual quantity of concrete plugs installed.

<u>Pay Item</u>	<u>Pay Unit</u>
Outlet Capping at Manhole	EA

F. CONCRETE FLOW FILL AND SERVICE LINE ABANDONMENT

The measurement for payment for each pay item will be on a cubic foot (CF) of concrete flow fill price basis. The price cubic foot includes but is not limited to furnishing and placement of materials and labor required to place concrete flow fill in accordance with the Drawings and Specifications.

The work includes but is not limited to furnishing and placing all other necessary materials, work, and equipment required to construct the pay item in accordance with the Drawings and Specifications.

Payment shall be made based on the actual quantity of concrete flow fill placed.

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete Flow Fill and Service Line Abandonment	CF

G. NEW DOWNSPOUT INSTALLATION

The measurement for payment for each pay item will be on a unit price basis. The unit price includes but is not limited to furnishing and placement of materials and labor required to install new sections of downspout with outlets directed toward the street/parking lot in accordance with the Drawings and Specifications.

The work includes but is not limited removal of existing downspout section and standpipe and furnishing and installing all other necessary materials, work, and equipment required to construct the pay item in accordance with the Drawings and Specifications.

Payment shall be made based on the actual quantity of concrete plugs installed.

<u>Pay Item</u>	<u>Pay Unit</u>
New Downspout Installation	EA

SECTION 00210

NOTICE OF AWARD

DATE:

TO:

Re: 2022 Storm Sewer Cross-Connection Improvements IFB – F22-10-094

Dear Contractor:

The City of Greeley, Colorado (hereinafter called "the Owner") has considered the bids submitted for referenced work in response to its Invitation for Bids. You are hereby notified that your bid has been accepted for items and prices stated in the Bid Schedule in the amount of \$_____. You are required to execute the Contract Agreement, provide the necessary insurance certificates, the Performance and Payment Bonds within ten (10) days from the date of this Notice. If you fail to execute said Contract Agreement and furnish the necessary insurance certificates and bonds within the time allotted from this date, the Owner will be entitled to consider your rights arising out of the Owner's acceptance of your bid as abandoned and to demand payment of bid guaranty as damages. The Owner will be entitled to such other rights as may be granted by law. You are required to return an acknowledged copy of this Notice of Award and enclosures to Purchasing.

CITY OF GREELEY, COLORADO

By: Sean Chambers

Title: Director of Water and Sewer

ACKNOWLEDGMENT: Receipt of the foregoing Notice of Award accompanied with a Performance and Payment Bond form and a signed copy of the Contract Document is hereby acknowledged this _____ day of _____, 20_____.

Bidder: _____

By: _____

SECTION 00310

CONTRACT

THIS AGREEMENT made and entered into this _____ day of ____, 20__, by and between the City of Greeley, Colorado, and under the laws of the state of Colorado, party of the first part, termed in the Contract Documents as the "Owner" and party of the second part, termed in the Contract Documents as "Contractor."

WITNESSETH: In consideration of monetary compensation to be paid by the Owner to the Contractor at the time and in the manner hereinafter provided, the said Contractor has agreed, and does hereby agree, to furnish all labor, tools, equipment and material and to pay for all such items and to construct in every detail, to wit:

PROJECT: 2022 STORM SEWER CROSS-CONNECTION IMPROVMENTS PROJECT-F22-10-094

at the price bid on the Proposal Form of \$ _____ all to the satisfaction and under the general supervision of the Project Manager for the City of Greeley, Colorado.

The Contract Documents consist of this Agreement, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, all Addenda issued prior to and all Modifications issued after execution of this Agreement. These form the Contract, and all are as fully a part of the Contract as if attached to this Agreement or repeated herein.

The Project Manager named herein shall interpret and construe the Contract Documents, reconciling any apparent or alleged conflicts and inconsistencies therein; and all of the work and all details thereof shall be subject to the approval and determination of the Project Manager as to whether or not the work is in accordance with Contract Documents. Said City Project Manager shall be the final arbiter and shall determine any and all questions that may arise concerning the Contract Documents, the performance of the work, the workmanship, quality of materials and the acceptability of the completed project. The decision of the Project Manager on all questions shall be final, conclusive and binding.

AND FOR SAID CONSIDERATION IT IS FURTHER PARTICULARLY AGREED BETWEEN THE PARTIES TO THIS AGREEMENT.

1. That construction and installation of the above enumerated work for the Owner shall be completed and ready for use in accordance with the time of completion described in the Bid form of this Contract. That the above enumerated work shall begin within ten (10) days of the official "Notice to Proceed". (Contract shall become void if work is not started at specified time.)

2. That said work and materials for the project covered by the Contract Documents shall be completely installed and delivered to the Owner, within the time above stated, clear and free from any and all liens, claims, and demands of any kind.

3. The full compensation to be paid the Contractor by the Owner pursuant to the terms of this Contract shall be payable as provided in the Contract Documents.

4. This Contract consists of the following component parts, all of which are as fully a part of the Contract as herein set out verbatim, or if not attached, as if hereto attached:

- Section 00110: Invitation for Bid
- Section 00120: Bid Proposal
- Section 00130: Bid Schedule
- Section 00140: Bid Bond
- Section 00160: Pre-bid meeting
- Section 00210: Notice of Award
- Section 00310: Contract
- Section 00320: Performance Bond
- Section 00330: Payment Bond
- Section 00340: Certificate of Insurance
- Section 00350: Lien Waiver Release
- Section 00360: Debarment/Suspension Certification Statement
- Section 00410: Notice to Proceed
- Section 00420: Project Manager Notification
- Section 00430: Certificate of Substantial Completion
- Section 00440: Final Completion
- Section 00500: Subcontractors List
- Section 00510: General Conditions of the Contract
- Section 00620: Special Provisions
- Drawings

Addenda Number _____ Inclusive

Any modifications, including change orders, duly delivered after execution of this Agreement.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed as of the day and year first above written.

EXECUTED:

The City of Greeley
Approved as to Substance

Signed: _____
Name: _____
Title: _____
Date: _____

CONTRACTOR:

Signed: _____
Name: _____
Title: _____
Date: _____

ENDORSED:

The City of Greeley
Approved as to Legal Form

Signed: _____
Name: _____
Title: _____
Date: _____

ENDORSED:

The City of Greeley
Certification of Contract Funds Availability

Signed: _____
Name: _____
Title: _____
Date: _____

SECTION 00320

PERFORMANCE BOND

Bond No. _____

KNOWN ALL MEN BY THESE PRESENTS: that

(Firm) _____

(Address) _____

(an Individual), (a Partnership), (a Corporation), hereinafter referred to as "the Principal", and

(Firm) _____

(Address) _____

hereinafter referred to as "the Surety", are held and firmly bound unto the CITY OF GREELEY, 1000 10th Street, Greeley, CO. 80631, a Municipal Corporation, hereinafter referred to as "the Owner" in the penal sum of _____ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these present.

THE CONDITIONS OF THIS OBLIGATION are such that whereas the Principal entered into a certain Contract Agreement with the Owner, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the performance of City of Greeley Project,

2022 Storm Sewer Cross-Connection Improvements – F22-10-094

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said Contract Agreement during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without Notice to the Surety and during the life of the guaranty period, and if he shall satisfy all claims and demands incurred under such Contract Agreement, and shall fully indemnify and save harmless the Owner from all cost and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, and then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Agreement or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation 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 Agreement or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument is executed this _____ day of _____, 20____.

PROVIDED, FURTHER, that no final settlement between the Owner and Contractor shall abridge the right of any beneficiary hereunder, whose claims may be unsatisfied.

IN PRESENCE OF:

PRINCIPAL

_____ By: _____

_____ (Corporate Seal) _____ (Address)

IN PRESENCE OF:

OTHER PARTNERS

_____ By: _____

_____ By: _____

By: _____

IN PRESENCE OF:

SURETY

_____ By: _____

_____ (Attorney-in-Fact)

_____ (SURETY SEAL) _____ (Address)

NOTE: Date of Bond must not be prior to date of Contract Agreement. If Contractor is Partnership, all partners should execute bond.

IMPORTANT: Surety Company must be authorized to transact business in the State of Colorado and be acceptable to the Owner.

SECTION 00330

PAYMENT BOND

Bond No. _____

KNOWN ALL MEN BY THESE PRESENT: that

(Firm) _____

(Address) _____

(an Individual), (a Partnership), (a Corporation), hereinafter referred to as "the Principal", and

(Firm) _____

(Address) _____

hereinafter referred to as "the Surety", are held and firmly bound unto the CITY OF GREELEY, 1000 10th Street, Greeley, Co. 80631, a Municipal Corporation, hereinafter referred to as "the Owner", in the penal sum of

_____ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION are such that whereas the Principal entered into a certain Contract Agreement with the Owner, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the performance of

2022 Storm Sewer Cross-Connection Improvements – F22-10-094

NOW, THEREFORE, if the Principal shall make payment to all persons, firms, subcontractors and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such Contract Agreement, and any equipment and tools, consumed, rented or used in connection with the construction of such work and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Agreement or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation 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 Agreement or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument is executed this _____ day of _____,
20____.

PROVIDED, FURTHER, that no final settlement between the Owner and Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN PRESENCE OF:

PRINCIPAL

_____ By: _____

(Corporate Seal)

(Address)

IN PRESENCE OF:

OTHER PARTNERS

_____ By: _____

_____ By: _____

_____ By: _____

IN PRESENCE OF:

SURETY

_____ By: _____

(Attorney-in-Fact)

(SURETY SEAL)

(Address)

NOTE: Date of bond must not be prior to date of Contract Agreement. If Contractor is Partnership, all partners should execute Bond.

IMPORTANT: Surety Company must be authorized to transact business in the State of Colorado and be acceptable to the Owner.

SECTION 00350

LIEN WAIVER RELEASE

TO: City of Greeley, Colorado (hereinafter referred to as "the OWNER".)

FROM: (hereinafter referred to as "the CONTRACTOR")

PROJECT: **2022 Storm Sewer Cross-Connection Improvements – F22-10-094**

1. The CONTRACTOR does hereby release all Mechanic's Liens Rights, Miller Act Claim (40 USCA 270), Stop Notice, Equitable Liens and Labor and Material Bond Rights resulting from labor and/or materials, subcontract work, equipment or other work, rents, services or supplies heretofore furnished in and for the construction, design, improvement, alteration, additions to or repair of the above described project.
2. This release is given for and in consideration of the sum of \$ and other good and valuable consideration. If no dollar consideration is herein recited, it is acknowledged that other adequate consideration has been received by the CONTRACTOR for this release.
3. In further consideration of the payment made or to be made as above set forth, and to induce the OWNER to make said payment, the CONTRACTOR agrees to defend and hold harmless the OWNER, employees, agents and assigns from any claim or claims hereinafter made by the CONTRACTOR and/or its material suppliers, subcontractors or employees, servants, agents or assigns of such persons against the project. The CONTRACTOR agrees to indemnify or reimburse all persons so relying upon this release for any and all sums, including attorney's fees and costs, which may be incurred as the result of any such claims.
4. It is acknowledged that the designation of the above project constitutes an adequate description of the property and improvements for which the CONTRACTOR has received consideration for this release.
5. It is further warranted and represented that all such claims against the CONTRACTOR or the CONTRACTOR's subcontractors and/or material suppliers have been paid or that arrangements, satisfactory to the OWNER and CONTRACTOR, have been made for such payments.
6. It is acknowledged that this release is for the benefit of and may be relied upon by the OWNER, the CONTRACTOR, and construction lender and the principal and surety on any labor and material bond for the project.

7. In addition to the foregoing, this instrument shall constitute a *** (full, final and complete) ***(partial) release of all rights, claims and demands of the CONTRACTOR against the OWNER arising out of or pertaining to the above referenced project. If partial, all rights and claims on the project are released up to and including the _____ day of Month, 20__ .

Dated this _____ day of _____, 20__.

CONTRACTOR

By: _____

Title: _____

STATE OF _____)
)ss.
COUNTY OF _____)

The foregoing instrument was acknowledged before me this _____ day of _____,
20__ by _____.

My Commission expires:

Notary Public

***Strike when not applicable

SECTION 00360

Debarment/Suspension Certification Statement

The proposer certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal, State, County, Municipal or any other department or agency thereof. The proposer certifies that it will provide immediate written notice to the City if at any time the proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstance.

DUNS # (Optional) _____

Name of Organization _____

Address _____

Authorized Signature _____

Title _____

Date _____

SECTION 00410

NOTICE TO PROCEED

Month , 20

TO: NAME

PROJECT: **2022 STORM SEWER CROSS-CONNECTION IMPROVEMENTS – F22-10-094**

To Whom It May Concern:

You are hereby notified to commence work on the above-referenced project in accordance with the Contract Agreement dated Month , 20 .

You are to complete this project by Month , 20

CITY OF GREELEY, COLORADO

By: _____

Title: _____

Signature

SECTION 00420

PROJECT MANAGER NOTIFICATION

_____, 20____

TO:

PROJECT: **2022 STORM SEWER CROSS-CONNECTION IMPROVEMENTS – F22-10-094**

The Owner hereby designates _____ as its Project Manager and authorizes this individual, under the authority of the Director of Public Works to make all necessary and proper decisions with reference to the project. Contract interpretations, change orders and other requests for clarification or instruction shall be directed to the Project Manager. The Director of Public Works shall be authorized to bind the Owner with respect to any decision made in accordance with the contract document.

CITY OF GREELEY, COLORADO

By: _____

Title: _____

SECTION 00430

CERTIFICATE OF SUBSTANTIAL COMPLETION

TO: CONTRACTOR

PROJECT: 2022 STORM SEWER CROSS-CONNECTION IMPROVEMENTS – F22-10-094

Project or designated portion shall include: Describe Scope.

The work performed under this contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as Month , 20 .

The date of commencement of applicable warranties required by the Contract Documents is stipulated in Section 00440 - Certificate of Final Acceptance.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the Work or designated portion thereof is the date certified by the Project Manager when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Project Manager is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The date of commencement of warranties for items on the attached list is as stipulated in Section 00440 – Certificate of Final Acceptance.

The Owner shall operate and maintain the Work or portion of the Work described above from the Date of Substantial Completion and be responsible for all costs associated with the completed work excluding cost related to warrantee work.

The Contractor will complete or correct the Work on the list of items attached hereto within days from the above Date of Substantial Completion.

Contractor

Owner

(Note--Owner's and Contractor's legal and insurance counsel should review and determine insurance requirements and coverage; Contractor shall secure consent of surety company, if any.)

SECTION 00440

CERTIFICATE OF FINAL ACCEPTANCE

TO: **CONTRACTOR**

PROJECT NAME: **2022 STORM SEWER CROSS-CONNECTION IMPROVEMENTS – F22-10-094**

The work performed under this contract has been reviewed and found to meet the definition of final acceptance. This Certificate of Final Acceptance applies to the whole of the work.

The Date of Final Acceptance of the Project designated above is hereby established as: Month _____, 20____ at 2:00 pm. This date is also the date of commencement of applicable warranties associated with the Project described above and as required by the Contract Documents.

DEFINITION OF DATE OF FINAL ACCEPTANCE

The Date of Final Acceptance of the Work is the date certified by the City of Greeley's Project Manager when the work is 100% complete, in accordance with the Contract Documents, as amended by change order(s), or as amended below:

Amendment to the Certificate of Final Completion (if any): Describe Amendments.

The Contractor and/or the City Of Greeley shall define any claims or requests for additional compensation above (or as attachments to this document).

Final Acceptance shall not be achieved until the Contractor provides the City Of Greeley with all contract specified Contractor and Sub-contractor close out documents including final lien waivers, releases, insurances, manuals, training, test results, warranties, and other documents required by the Contract Documents, as amended.

Upon issuance of the Certificate of Final Acceptance the Contractor may submit an application for payment requesting final payment for the entire Work. Liquidated damages (if any) will be assessed at this time.

Contractor's acceptance of the final payment shall constitute a waiver by the Contractor of all claims arising out of or relating to the Work; except as noted under 'Amendment to the Certificate of Final Acceptance' above.

Agreed:

_____, 20____ _____, 20____
Contractor's Representative DATE Project Manager (COG) DATE

SECTION 00510

CITY OF GREELEY GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION (REVISED MAY 2020)

ARTICLE 1 DEFINITIONS

- 1.1 **Bidder:** An architect, engineer, individual, firm, partnership, corporation or combination thereof, submitting a Bid for the Work.
- 1.2 **Change Notice:** A document issued to the Contractor specifying a proposed change to the Contract Documents. Unless otherwise expressly stated on the face of the Change Notice, a Change Notice is a proposal which may result in a Change Order.
- 1.3 **Change Order:** A document issued to the Contractor modifying the Contract.
- 1.4 **Construction Contract:** The Contract Documents, including the Contract for construction (hereinafter “the contract”) executed by the Contractor and the Owner covering the performance of the Work including the furnishing of labor, superintendence, materials, tools and equipment as indicated in the Contract Documents.
- 1.5 **Contract Documents:** Documents applicable to and specific to the construction of an individual Project, including the Contract and all other documents executed by the Contractor and Owner covering the performance of the work including but not limited to Specifications, Insurance Requirements, Contract Drawings, Conditions of the Contract (General and Supplementary), Owner Contractor Agreement, all Addenda, all change orders issued after execution of the Contract, Performance and Payment Bonds, and any other special provisions.
- 1.6 **Contract Drawings(Project Drawings):** Contract drawings, The plans, to include but not limited to plans, profiles, typical cross sections, general cross-sections, elevations, schedules, schematics, notes and details which show locations, character, dimensions, and details of the Work.
- 1.7 **Contractor:** The individual, firm, partnership, or corporation, or combination thereof, private, municipal, or public, including joint ventures, which, as an independent contractor, has entered into a contract with the Owner, who is referred to throughout the Contract Documents by singular number and masculine gender.
- 1.8 **Days:** Unless otherwise designated, days mean calendar days.

- 1.9 **Extra Work:** Work not provided for in the Contract as awarded but found to be essential to the satisfactory completion of the Contract, within its intended scope. Reimbursement for extra work is governed by Article 28, CHANGES, or Article 31, CONTRACTOR PROPOSALS.
- 1.10 **Field Order:** A written order issued to a contractor by the Owner, or Project Manager, effecting a minor change or clarification with instructions to perform work not included in the contract. The work will eventually become a Change Order. A field Order is an expedient process used in an emergency or need situation that in many cases does not involve an adjustment to the contract sum or an extension of the contract sum or an extension of the contract time.
- 1.11 **Final Acceptance:** The formal written acceptance by the Owner of the completed Work.
- 1.12 **Force Account:** A method of payment, other than lump sum or unit price, for Work ordered by Change Order or by written notice from the Owner. Reimbursement for force account work is governed by Article 36, FORCE ACCOUNT WORK.
- 1.13 **Furnishing:** Manufacturing, fabricating and delivering to the site of the Work materials, plant, power, tools, patterns, supplies, appliances, vehicles and conveyances necessary or required for the completion of the Work.
- 1.14 **General Conditions (GC):** A section of the Contract Documents which specifies, in general, the contractual conditions.
- 1.15 **General Terms:** Directed, required, permitted, ordered, designated, selected, prescribed or words of like import shall be understood to mean the direction, requirement, permission, order, designation, selection or prescription of the Project Manager. Approved, satisfactory, equal, necessary or words of like import shall be understood to mean approved by, acceptable to, satisfactory to, equal, necessary in the opinion of the Project Manager.
- 1.16 **Indicated:** A term meaning as shown on the Contract Drawings, or as specified and detailed in the Contract Documents.
- 1.17 **Installation, Install, or Installing:** Completely assembling, erecting and connecting material, parts, components, appliances, supplies and related equipment specified or required for the completion of the Work.
- 1.18 **Limit of Work:** Boundary within which the Work, excepting utility and drainage work in Public Right Of Way and Easements, is to be performed.
- 1.19 **Notice to Proceed:** Written notice from the Owner to the Contractor to proceed with the Work.
- 1.20 **Notice of Termination:** Written notice from the Owner to the Contractor to stop work under the Contract on the date and to the extent specified in the Notice of Termination.

- 1.21 **Owner:** The City of Greeley.
- 1.22 **Permanent Drainage Easement:** Area required to construct and maintain permanent drainage facilities for retention, release, and passage of surface water.
- 1.23 **Permanent Utility Easement:** Area required to construct and maintain utility facilities.
- 1.24 **Project:** That specific portion of the Work indicated in the Contract Documents.
- 1.25 **Project Manager:** The Owner's designated representative. The Project Manager has the authority to delegate portions of his responsibilities to others.
- 1.26 **Provide:** In reference to work to be performed by the Contractor, provide means furnish and install completely in place.
- 1.27 **Punch List:** Work determined to be incomplete or unacceptable at time of inspection for substantial completion.
- 1.28 **Samples:** Physical examples which illustrate materials, equipment, fixtures and workmanship which establish standards by which the Work will be judged.
- 1.29 **Schedule:** Acceptable schedules are BAR or GANTT Chart or CPM schedule.
- 1.30 **Shop Drawings:** Documents furnished by the Contractor to illustrate specific portions of the Work. Shop Drawings include drawings, diagrams, illustrations, schedules, charts, brochures, tables and other data describing fabrication and installation of specific portions of the Work.
- 1.31 **Specifications:** A document applicable to construction contracts containing the Technical Provisions.
- 1.32 **Subcontractor:** Any person, firm or corporation, other than the employees of the Contractor, who contracts with the Contractor to furnish labor, material or labor and materials, under this Contract.
- 1.33 **Special Provisions:** Provisions especially applicable to this Contract which invoke, modify and supplement the General Conditions which are included in the Contract Documents.
- 1.34 **Substantial Completion:** The state in the progress of Work when the Work, or a designated portion thereof, is sufficiently complete in accordance with the Contract Documents, so that Owner may access, occupy, use, and enjoy the Project, or designated portion thereof, for its intended purpose. Substantial Completion shall not occur until a temporary or permanent Certificate of Occupancy is issued and only minor punch list items remain for such Work.

1.35 **Technical Provisions:** Those provisions which specify the materials and execution of construction for work entering into the project.

1.36 **Work:** The construction, labor, materials, equipment, and contractual requirements as indicated in the Contract Documents, including alterations, amendments, or extensions thereto made by authorized changes.

1.37 **Work Site:** The area enclosed by the Limit of Work indicated in the Project Drawings and boundaries of local streets and public easements in which the Contractor is to perform work under the Contract. It shall also include areas obtained by the Contractor for use in connection with the Contract, when contiguous to the Limit of Work.

ARTICLE 2 INTERPRETATION

2.1 The documents comprising the Contract Documents are complementary and indicate the construction and completion of the Work. Anything mentioned in the Contract Specifications and not shown on the Contract Drawings, or shown on the Contract Drawings and not mentioned in the Contract Specifications, shall be of like effect as if shown or mentioned in both.

2.2 Where "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the specifications or drawings accompanying this Contract unless stated otherwise.

2.3 References to Articles or Sections include sub articles or subsections under the Article Reference (for example, a reference to Article 2 is also a reference to 2.1 through 2.9, and references to paragraphs similarly include references to subparagraphs).

2.4 **Referenced Standards:** Material and workmanship specified by the number, symbol, or title of a referenced standard shall comply with the latest edition or revision thereof and amendments and supplements thereto in effect on the date of the Invitation to Bid except where a particular issue is indicated.

2.5 **Precedence of Contract Documents:** Except as provided by Paragraph 2.1 of this Article, the Construction Contract governs over other Contract Documents, except that a Change Order governs over the Contract and previously issued Change Orders. The Contract Conditions govern over the General Conditions.

2.6 **Explanations:** Should it appear that the Work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Owner for such explanation provided as part of the Contract. Disputes over questions of fact which are not settled by agreement shall be decided by Owner. Such decision thereon will be final, subject to remedies under Article 35, DISPUTES.

2.7 Should there be any conflict, detailed instructions govern over general instructions, detail drawings have precedence over small scale drawings, and dimensions have precedence over scale.

2.8 Omissions and Misdcriptions: The Contractor shall carefully study and compare all drawings, specifications, Contract Documents and other instructions; shall verify all dimensions on the Contract Drawings before laying out the Work; shall notify the Project Manager of all errors, inconsistencies or omissions which he may discover; and obtain specific instructions in writing before proceeding with the Work. The Contractor shall not take advantage of apparent errors or omissions which may be found in the Contract Documents, but the Project Manager shall be entitled to make such corrections therein and interpretations thereof as he may deem necessary for the fulfillment of their intent. The Contractor shall be responsible for all errors in construction which could have been avoided by such examination and notification, subject to remedies under Article 35, Disputes.

ARTICLE 3 ENTITY OF CONTRACTOR

3.1 If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

ARTICLE 4 LIABILITY AND INDEMNIFICATION

4.1 It is agreed that the Contractor assumes responsibility and liability for damages, loss or injury of any kind or nature whatever to persons or property caused by or resulting from or in connection with any act, action, neglect, omission, or failure to act when under a duty to act on the part of the Contractor or any of his officers, agents, employees, or subcontractors in his or their performance of the Work. The Contractor shall indemnify and hold harmless the Government, the State, the Owner and the Project Manager and their members, officers, agents, or employees from claims, losses, damages, charges, costs, or expenses, including attorney's fees, whether direct or indirect, to which they or any of them may be put or subjected to by reason of any such loss or injury.

ARTICLE 5 PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS AND LAND SURVEY MONUMENTS

5.1 A Contractor shall preserve and protect existing vegetation such as trees, shrubs, and grass on or adjacent to the work site which are not indicated to be removed and which do not unreasonably interfere with the construction work and he shall replace in kind any vegetation, shrubs and grass damaged by him at his own expense.

5.2 The Contractor shall protect from damage all utilities, structures, or improvements on or near the site of the Work and shall repair or restore any damage to such utilities, structures, or improvements resulting from failure to comply with the requirements of the Contract or the failure to exercise reasonable care in the performance of the Work. If the Contractor fails or refuses to repair

any such damage promptly, the Owner may have the necessary work performed and charge the cost thereof to the Contractor.

5.3 All land survey monuments shall be protected from any damage by any work and/or shall be replaced by a licensed land surveyor licensed in the state of Colorado at the contractor's expense before final acceptance is issued.

ARTICLE 6 CONTRACTUAL RELATIONSHIPS

6.1 No contractual relationship will be recognized under the Contract other than the contractual relationship between the Owner and the Contractor.

ARTICLE 7 ASSIGNMENT

7.1 The performance of the Work under the Contract shall not be assigned except upon written consent of the Owner. Consent will not be given to any proposed assignment which would relieve the Contractor or his surety of their responsibilities under the Contract. The Contractor shall not assign any monies due or to become due to him under the Contract without the previous written consent of the Owner.

ARTICLE 8 SUBCONTRACTORS

8.1 Unless otherwise required by the Contract Documents or the Bidding Documents, the Contractor, as soon as practicable after the award of the Contract, not to exceed 3 days, shall furnish to the Owner and the Project Manager, in writing the names of the subcontractors, persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. The Project Manager will promptly reply to the Contractor in writing whether or not the Owner or the Project Manager, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Project Manager to reply promptly shall constitute notice of no reasonable objections.

ARTICLE 9 CONDITIONS AFFECTING THE WORK

9.1 The Contractor shall be responsible for taking steps reasonably necessary to ascertain the nature and location of the Work, and the general and local conditions which can affect the Work or the cost thereof. Failure by the Contractor to do so will not relieve him from responsibility for successfully performing work without additional expense to the Owner. The Owner will not be responsible for any understanding or representations concerning conditions, unless such understanding or representations are expressly stated in the Contract.

ARTICLE 10
GRATUITIES AND CONFLICTS OF INTEREST

10.1 The Owner may, by written notice to the Contractor terminate the right of the Contractor to proceed under this Contract if it is found that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor or any director, officer or employee of the Owner or its Project Manager with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performance of such contract. The Owner's determination shall be final subject only to judicial review.

10.2 In the event this Contract is terminated for any reason, the Owner shall be entitled to pursue the same remedies against the Contractor as it could pursue in the event of a breach of the Contract by the Contractor.

10.3 No member, officer or employee of the Owner or of a local public body during his tenure or for one year thereafter shall have any interest, direct or indirect, in this Contract or the proceeds thereof. "Local public body" means the State, any political subdivision of the State, or any agency of the State or any political subdivision thereof.

10.4 The rights and remedies of the Owner provided in this article are not exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

ARTICLE 11
WARRANTY OF WORK

11.1 Except where longer periods of warranty are indicated for certain items, the Contractor warrants work under the Contract to be free from faulty materials and workmanship for a period of not less than two years from date of Final Acceptance, which two year period shall be covered by the Performance Bond and Payment Bond as specified in this Contract. The Contractor shall immediately remedy, repair, or replace, without cost to the Owner and to the entire satisfaction of the Owner, defects, damages, or imperfections due to faulty materials or workmanship appearing in said work within said period of not less than two years. Remedied work shall carry the same warranty as the original work starting with the date of acceptance of the replacement or repair. Payment to the Contractor will not relieve him of any obligation under this Contract.

11.2 The Contractor, at no additional expense to the Owner, shall also remedy damage to equipment, the site, or the building or the contents thereof which is the result of any failure or defect in the Work, and restore any work damaged in fulfilling the requirements of the Contract. Should the Contractor fail to remedy any such failure or defect within a reasonable time but no longer than ten (10) days after receipt of notice thereof, the Owner will have the right to replace, repair, or otherwise remedy such failure or defect at the Contractor's expense.

11.3 Subcontractors', manufacturers', and suppliers' warranties and guarantees, expressed or implied, respecting any part of the Work and any material used therein shall be deemed obtained and

shall be enforced by the Contractor for the Benefit of the Owner without the necessity of separate transfer or assignment thereof.

11.4 The rights and remedies of the Owner provided in this Article are in addition to and do not limit any rights and remedies afforded by the Contract or by law.

ARTICLE 12 MATERIAL

12.1 Unless otherwise indicated in this Contract, equipment, material and products incorporated in the Work covered by this Contract shall be new and of the grade specified in the Contract for the purpose intended. Unless otherwise specifically indicated, reference to equipment, material, product or patented process by trade names, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the Contractor may, at his option, use any equipment, material, article, or process which is equivalent to that named, subject to the requirements of Paragraph 12.2 of this Article.

12.2 Within the scope of his authority, the Project Manager shall be the sole judge of the quality and suitability of proposed alternative equipment, material, article or process. The burden of proving the quality and suitability of the alternative shall be upon the Contractor. Information required by the Project Manager in judging an alternative shall be submitted for approval by the Contractor at the Contractor's expense prior to installation.

12.3 Where use of an alternative material involves redesign of or changes to other parts of the Work, the cost and the time required to affect such redesign or change will be considered in evaluating the suitability of the alternative material. Redesign and changes in other parts of the Work shall be at the Contractor's expense.

12.4 No action relating to the approval of alternative materials will be taken by the Project Manager until the request for substitution is made in writing by the Contractor accompanied by complete data as to the quality and suitability of the materials proposed. Such request shall be made in ample time to permit approval without delaying the Work.

12.5 Disposal of material outside the Work Site: The Contractor shall make his own arrangements for legally disposing of waste and excess materials outside the Work Site and he shall pay costs therefore.

12.6 Property rights in materials: The Contractor shall have no property right in materials after they have been attached or affixed to the Work or the soil, or after payment has been made by the Owner to the Contractor for materials delivered to the site of the Work, or stored subject to or under the control of the Owner as provided in Article 24, PROGRESS PAYMENTS.

ARTICLE 13 WORKMANSHIP AND UNAUTHORIZED WORK

13.1 Work under this Contract shall be performed in a skillful and workmanlike manner. The Project Manager may, in writing, require the Contractor to remove from the work any employee the Project Manager determines incompetent, careless or otherwise objectionable.

13.2 Unauthorized work: Work performed beyond the lines and grades shown on the Contract Drawings, approved Working and Shop Drawings and Extra work done without written authorization, will be considered as unauthorized work, and the Contractor will receive no compensation therefore. If required by the Owner, unauthorized work shall be remedied, removed, or replaced by the Contractor at the Contractor's expense. Upon failure of the Contractor to remedy, remove or replace unauthorized work, the Owner may take courses of action set out in Paragraph 15.3 of Article 15, INSPECTION.

ARTICLE 14 SUPERINTENDENCE BY CONTRACTOR

14.1 The Contractor shall give his personal superintendence to the Work or have a competent foreman or superintendent, hereinafter designated his authorized representative, satisfactory to the Owner, on the Work Site at all times during progress, with authority to act for him. There shall be provided at all times, a reasonable method of communication directly to the Contractor if the Owner experiences any problems or difficulties with the Superintendent.

ARTICLE 15 INSPECTION/TESTING

15.1 Work (which term includes but is not restricted to materials, workmanship and manufacture and fabrication of components) will be subject to inspection and test by the Project Manager at all reasonable times and at all places prior to acceptance. Such inspection and test is for the sole benefit of the Owner and shall not relieve the Contractor of the responsibility of providing quality control measures to assure that the Work strictly complies with the Contract Documents. No inspection or test by the Project Manager shall be construed as constituting or implying acceptance. Inspection or test shall not relieve the Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Owner after acceptance of the completed Work.

15.2 The Contractor shall, at his own expense, replace any material or correct any workmanship found not to conform to the contract requirements, unless the Owner consents in writing to accept such material or workmanship with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises at his own expense.

15.3 If the Contractor does not promptly replace rejected material or correct the rejected workmanship, the Owner (1) may, by separate contract or otherwise, replace such material or correct such workmanship and charge the cost thereof to the Contractor, or (2) may terminate the Contractor's right to proceed in accordance with Article 38, TERMINATION FOR DEFAULT-DAMAGES FOR DELAY--TIME EXTENSIONS.

15.4 The Contractor shall give the Project Manager ample notification of inspections and tests, and the Project Manager will perform, except as otherwise specifically provided, said inspections and tests in such manner as not to unnecessarily delay the work. The Owner will have the right to charge to the Contractor any additional cost of inspection or test or when reinspection or retest is necessitated by prior rejection.

15.5 Should it be considered necessary, before acceptance of the entire work, to make an examination of work already completed by removing or tearing out same, the Contractor shall on request promptly furnish all necessary facilities, labor and material therefore. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or his subcontractors, he shall defray the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, an equitable adjustment will be made in the contract price to compensate the Contractor for the additional services involved in such examination and reconstruction. If completion for the work has been delayed thereby, he will, in addition, be granted an equitable extension of time.

15.6 The Project Manager shall have access to the work during its construction. Work done and materials provided will be subject to the Project Manager's on-site and off-site inspection and approval. When work is to be performed during hours other than during his normal schedule, the Contractor shall so advise the Project Manager not less than 24 hours in advance. The Contractor shall provide access to the work for authorized representatives of the Owner.

15.7 The Project Manager's inspection and approval of work or materials shall not relieve the Contractor of any of his obligations to fulfill the requirements of the Contract Documents. Work and materials not meeting the requirements of the Contract shall not be incorporated in the Work. Unsuitable or substandard work or materials may be rejected by the Project Manager, notwithstanding that such work or materials may have been previously inspected by the Project Manager, or that payment therefore has been included in a progress payment.

ARTICLE 16 PERMITS AND COMPLIANCE WITH LAWS

16.1 The Contractor shall without additional expense to the Owner be responsible for obtaining necessary licenses and permits and for complying with applicable Federal, State, County and Municipal laws, codes and regulations in connection with the commencement of the work. The Contractor is required to supply the Project Manager with complete and final copies of license and permits including final inspection documentation. The Contractor shall be required to obtain permits at his own expense. The Contractor shall protect, indemnify and hold harmless the Owner and the Project Manager and their members, officers, agents and employees against claims and liabilities arising from or based on the violation of requirements of law or permits whether by the Contractor, his employees, agents or subcontractors.

**ARTICLE 17
RIGHTS IN LAND IMPROVEMENT**

17.1 The Contractor shall make no arrangements with any person to permit occupancy or use of any land, structure or building within the work site for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the Owner and any owner, former owner or tenant of such land, structure or building. The Contractor shall not occupy Owner property outside the work site without obtaining prior written approval from the Owner.

**ARTICLE 18
DAMAGE TO THE WORK AND RESPONSIBILITY FOR MATERIALS**

18.1 The Contractor shall be responsible for materials delivered and work performed until completion and final acceptance of the entire construction thereof.

18.2 The Contractor shall bear the risk of injury, loss or damage to any and all parts of the work for whatever cause, whether arising from the execution or from the non-execution of work. The Contractor shall rebuild, repair or restore work and materials which have been damaged or destroyed from any cause before completion and acceptance of the work and shall bear the expense thereof. The Contractor shall provide security and drainage and erect temporary structures as necessary to protect the work and materials from damage.

18.3 The Contractor shall be responsible for materials not delivered to the site for which any progress payment has been made to the same extent as if the materials were so delivered.

**ARTICLE 19
EMERGENCIES**

19.1 In an emergency affecting the safety of life, the work, or adjacent property, the Contractor shall notify the Project Manager as early as possible that an emergency exists. In the meantime, without special instruction from the Project Manager as to the manner of dealing with the emergency, the Contractor shall act at his own discretion to prevent such threatened loss or injury. As emergency work proceeds, the Project Manager may issue instruction, which the Contractor shall follow. The amount of compensation to which Contractor is entitled on account of emergency work will be determined in accordance with Article 28, CHANGES.

**ARTICLE 20
NOTICE TO PROCEED**

20.1 The Owner will issue a Notice to Proceed to the Contractor within 15 days after the Contractor has executed the Contract and has delivered the specified bonds and Certificates of Insurance as required by the Owner. Except as specifically authorized in writing by the Owner, the Contractor is not authorized to perform work under the Contract until the effective date of the Notice to Proceed. Within 10 days after the effective date of such Notice to Proceed, the Contractor shall

commence work and shall diligently prosecute the Work to completion within the time limits specified. These time periods may be modified by mutual written agreement of both the Owner and Contractor.

ARTICLE 21 PROGRESS SCHEDULE AND REQUIREMENTS FOR MAINTAINING PROGRESS

21.1 The Contractor shall, at the pre-construction meeting, prepare and submit to the Project Manager for approval a practicable schedule, showing the order in which the Contractor proposes to carry on the work, the date on which he will start the several salient features (including procurement of materials, plant and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion at any time. The Contractor shall update the chart with the actual progress monthly or at such intervals as directed by the Project Manager, and shall immediately deliver three copies thereof. If the Contractor fails to submit a progress schedule within the time herein prescribed, the Project Manager may withhold approval of progress payment estimates until such time as the Contractor submits the required progress schedule.

21.2 The Contractor shall prosecute the work in accordance with the latest approved Progress Schedule. In the event, that the progress of items along the critical path is delayed, the Contractor shall revise his planning to include additional forces, equipment, shifts or hours as necessary to meet the time or times of completion specified in this Contract. Additional costs resulting therefrom will be borne by the Contractor. The Contractor shall make such changes when his progress at any check period does not meet at least one of the following two tests:

21.2.1 The percentage of dollar value of completed work with respect to the total amount of the Contract is within ten percentage points of the percentage of the Contract time elapsed, or;

21.2.2 The percentage of dollar value of completed work is within ten percentage points of the dollar value which should have been performed according to the Contractors own network analysis previously approved by the Project Manager.

21.3 Failure of the Contractor to comply with the requirements under this provision will be grounds for determination that the Contractor is not prosecuting the work with such diligence as will ensure completion within the time of completion specified in this Contract. Upon such determination, the Owner may terminate the Contractor's right to proceed with the work, or any separate part thereof, in accordance with Article 38, TERMINATION FOR DEFAULT--DAMAGES FOR DELAY-TIME EXTENSIONS of these General Conditions.

ARTICLE 22 SUSPENSION OF WORK

22.1 The Owner reserves the right to suspend, delay or interrupt execution of the whole or any part of the work for such period of time as he may determine to be appropriate for his convenience.

22.2 If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Owner in the administration of this Contract or by his failure to act within the time specified in this Contract (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this Contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent (1) that performance would have been so suspended, delayed or interrupted by any other cause, including the fault or negligence of the Contractor or (2) for which an equitable adjustment is provided for or excluded under any other provision of this Contract.

22.3 No claim under this clause shall be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Owner in writing of the act of failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated is asserted in writing as soon as practicable after the termination of such suspension, delay, or interruption, but not later than the date of final payment under the Contract.

ARTICLE 23 FINAL INSPECTION AND ACCEPTANCE

23.1 Final inspection: When the Contractor notifies the Project Manager in writing that the work has been completed, the Owner will make the final inspection for the purpose of ascertaining that the work has been completed in accordance with the requirements of the Contract Documents.

23.2 Acceptance of the work: When the Owner has made the final inspection and has determined that the work has been completed in accordance with the Contract Documents, the Owner will accept the work. Immediately upon and after Final Acceptance, the Contractor will be relieved of the duty of maintaining and protecting the work as a whole. The Contractor will be relieved of his responsibility for injury to persons or property or damage to the work which occurs after Final Acceptance, except that the Contractor will not be relieved of his responsibility for injury to persons or property arising from his duties and obligations under Article 4, LIABILITY AND INDEMNIFICATION.

23.3 Final Acceptance shall be final and conclusive, and no further performance of work shall be required except with regards to latent defects, fraud or such gross mistakes as may amount to fraud, or with regard to the Owner's rights under any warranty or guarantee. All punch list items must be completed and building permits provided to Owner before final acceptance is issued.

23.4 Date of Substantial Completion for all Work shall be within the number of calendar days bid by the Contractor on the Bid proposal.

23.5 Date of Final Completion shall be the date specified on the Certificate of Final Completion.

**ARTICLE 24
PROGRESS PAYMENTS**

24.1 The Owner will make progress payments monthly as the work proceeds, on estimates approved by the Project Manager. Payment will be made within 15 days after progress estimates are approved by the Project Manager and Department Head. On request of the Project Manager, the Contractor shall furnish a detailed estimate of the total contract price each showing the amount included therein for each principal category of the work, to provide a basis for determining the amount of progress payments. In the preparation of estimates, the Owner, at its sole discretion, may authorize material delivered on the site and preparatory work done to be taken into consideration which is to be submitted at the pre-construction meeting.

24.2 In making such progress payments, five percent of the estimated amount will be retained until Final Acceptance of the Contract work; in addition, the Owner shall retain from all Progress payments an amount equal to all statutory claims filed against the Contractor. Also, whenever the work is substantially complete, the Owner if it considers the amount retained to be in excess of the amount adequate for its protection, may release to the Contractor all or a portion of such excess amount. Substantial completion as used in this Paragraph 24.2 shall mean the following: Substantial completion of the work or a portion thereof shall be when, as determined by both the Project Manager and the Owner, the construction is sufficiently completed in accordance with the Contract Documents and any modification thereto as provided in the Contract to permit the Owner to occupy the work or a portion of the work for the use which it is intended.

24.3 Material and work covered by progress payments shall become the sole property of the Owner. This provision shall not be construed as relieving the Contractor from the sole responsibility for material and work upon which payments have been made, the restoration of damaged work or as waiving the right of the Owner to require the fulfillment of the terms of the Contract.

**ARTICLE 25
PAYMENT TO SUBCONTRACTORS**

25.1 The Contractor shall pay all subcontractors for and on account of work performed by such subcontractors in accordance with the terms of their respective subcontract. Prior to final payment an unconditional lien waiver release form will be required by the Owner.

**ARTICLE 26
PAYMENT OF TAXES**

26.1 The price or prices for the work will include full compensation for taxes that the Contractor is or may be required to pay. The Contractor shall bear the risk of any added or increased taxes occurring during the prosecution of the work. A change in taxes shall under no circumstances entitle the Contractor to an adjustment under the Contract.

26.2 The Contractor's attention is directed to the fact that this project is exempt from payment of City of Greeley Sales and Use taxes, and such taxes must not be included in the amount of bid.

26.3 The Contractor shall pay all sales and use taxes required to be paid, shall maintain such records in respect of his work, which shall be separate and distinct from all other records maintained by the Contractor and shall be available for inspection by the Owner at any and all reasonable times, and shall furnish the Owner with such data, as may be necessary to enable the Owner to obtain any refunds of such taxes which may be available to the Owner under the laws, ordinances, rules or regulations applicable to such taxes. The Contractor shall require each of his subcontractors to pay all sales and use taxes required to be paid and to maintain such records and furnish the Contractor with such data as may be necessary to enable the Owner to obtain a refund of the taxes paid by such subcontractors.

ARTICLE 27 FINAL PAYMENT

27.1 After the Work has been accepted by the Owner, subject to the provisions of Article 11, WARRANTY OF WORK and Article 23, FINAL INSPECTION AND ACCEPTANCE of these General Conditions, a final payment due the Contractor under this Contract shall be paid upon the presentation of properly executed voucher and after the Contractor shall have furnished the Owner with a release of all claims against the Owner arising by virtue of this Contract, other than claims in stated amounts as may be specifically excepted by the Contractor from the operation of the release. If the Contractor's claim to amounts payable under the contract has been assigned under the assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C. 15), a release may also be required of the assignee.

27.2 If any mechanic's or material man's lien or notice of claim of such lien is filed or recorded against the project for labor, materials, supplies or equipment claimed to have been furnished to or incorporated into the Work, or for other alleged contribution thereto, the Owner will have the right to retain from payments otherwise due the Contractor, in addition to other amounts properly withheld under this Article or under other provisions of the Contract, an amount equal to such lien or liens claimed.

27.3 Further, the Owner will have the right to retain from final payment an amount equal to all liquidated damages claimed by the Owner.

27.4 Retainages held by the Owner for any state or federal statutory claim arising out of the project will be held by the Owner in addition to all retainages held under the provisions of the Contract.

ARTICLE 28 CHANGES

28.1 The Owner may, at any time, without notice to the sureties, by written notice or order designated or indicated to be a Change Notice or Change Order, make any change in the work within the general scope of the Contract in accordance with all of the Owner's processes and procedures whether or not set forth herein, including but not limited to changes:

28.1.1 In the Contract (including drawings and designs);

28.1.2 In the method or manner of performance of the work;

28.1.3 In Owner furnished facilities, equipment, materials, services, or site; or

28.1.4 Directing acceleration in performance of the work.

28.2 Any other order (which terms as used in Paragraph 28.2 of this Article shall include direction, instruction, interpretation, or determination) from the Project Manager, which causes any change, shall be treated as a Change Notice under this Article provided that the Contractor gives the Project Manager written notice stating the date, circumstances and source of the order, and that the Contractor regards the order as a Change Notice. The Contractor shall notify the Project Manager when he receives direction, instruction, interpretation or determination from any source which may cause any change in the work. Such notification shall be given to the Project Manager before the Contractor acts on said direction, instruction, interpretation or determination.

28.3 Except as herein provided, no order, statement, or conduct of the Architect/ Project Manager or any other person shall be treated as a change under this Article or entitle the Contractor to an equitable adjustment hereunder.

28.4 If any change under this Article causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the Work under this Contract, whether or not changed by an order, an equitable adjustment will be made and the Contract modified accordingly by a written Change Order; provided, however, that except for claims based on errors in the Contract Documents, no claim for change under Paragraph 28.2 of this Article will be allowed for costs incurred more than 20 days before the Contractor gives written notice as herein required; and provided that in the case of errors in the Contract Documents for which the Owner is responsible, the adjustment will include increased cost, reasonably incurred by the Contractor in attempting to comply with such errors in the Contract Documents. No claim shall be made for the type of errors in the Contract Documents which are set forth in Article 2, INTERPRETATION.

28.5 If the Contractor intends to assert a claim for an equitable adjustment under this Article, he shall, within 30 days after receipt of a written Change Order under Paragraph 28.1 of this Article or the furnishing of a written notice under Paragraph 28.2 of this Article, submit to the Project Manager a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended in writing by the Owner. The statement of claim hereunder may be included in the notice under Paragraph 28.2 of this Article.

28.6 No claim by the Contractor for an equitable adjustment hereunder will be allowed unless asserted as described in Paragraphs 28.4 and 28.5 above.

28.7 Payment will not be made under the provisions of this Article for such work or materials which are so required to be done or furnished in or about or for the performance of the Work and which are not mentioned, specified or indicated or otherwise provided for in this Contract or in the Contract Documents so far as such work or materials may be, in the opinion of the Project Manager, susceptible of classification under or reasonably inferred to be included in the Bid Items of the Bid Form.

28.8 In case the Contractor is ordered to perform work under this Article for which payments are not determined under Paragraph 28.7 of this Article, which in the opinion of the Owner it is impracticable to have performed by the Contractor's own employees, the Contractor will, subject to the approval of the Owner, be paid the actual cost to him of such work and, in addition thereto, a negotiated amount to cover the Contractor's superintendence, administration and other overhead expenses. The terms and conditions of any subcontract which the Contractor may propose to enter into in connection with work under the provision of this Article shall be subject to the written approval of the Project Manager before such subcontract is made. The contractor shall be responsible for the work of the subcontractors and shall be liable therefore as if he had performed the work directly.

28.9 In cases other than those described in Paragraphs 28.7 and 28.8 above, the Owner and the Contractor (on his own behalf and on behalf of his subcontractors) shall endeavor to negotiate a reasonable contract price and line adjustment in a Change Order on terms appropriate to the changed work. The Contractor will be required to submit a sufficiently detailed price proposal supported with sufficient documentation that (1) the Owner can determine that the proposal reflects all impacts on the Contract from work additions, deletions and modifications shown in the Change Notice being priced, (2) the proposed prices are set out in such a way that their reasonableness can be evaluated against prices based on adequate price competition, bid unit prices, established catalog or market prices of commercial items sold in substantial quantities to the general public, prices set by law or regulation, recognized published price lists and indices, independently developed cost estimates and other appropriate price comparisons, and (3) contract provisions relating to Contract changes costing over \$100,000.00 are complied with. If any prices or other aspects are conditional, such as on firm orders being made by a certain date or the occurrence or nonoccurrence of an event, the Contractor shall identify these aspects in his proposal. A negotiated Change Order shall set out prices, scheduling requirements, time extensions and all costs of any nature arising out of the issuance of a Change Notice except for those cost and time aspects explicitly reserved on the face of the Change Order. Except for these explicit reservations, the execution of a Change Order by both parties will be deemed accord and satisfaction of all claims of any nature arising from the issuance of the Change Notice negotiated.

28.10 In the event the Contractor and the Owner are unable to agree upon the Contractor's entitlement to an equitable adjustment or upon the amount thereof, or in the event that it is in the best interest of the Owner to have the Work proceed pending negotiation of amount of an equitable adjustment, the Owner may direct the Contractor to perform the Work in accordance with the Owner order, direction, instruction, interpretation, or determination, with any Contract price adjustments and progress payments for the Work to be determined on a Force Account basis in accordance with

Article 36. The Contractor shall continue diligently to perform the Contract in accordance with the Owner's order, direction, instruction, interpretation, or determination during negotiations with respect to the Contractor's entitlement to an equitable adjustment hereunder or to the amount of any Contract price adjustment or time extension. The Contractor and the Owner may agree on certain aspects of an equitable adjustment and take those aspects out of operation of Force Account provisions. In the event a mutually agreeable equitable adjustment cannot be made, the Contractor shall continue diligently to perform the orders as he proceeds with his remedies under Article 35, DISPUTES, and shall continue to receive compensation on a Force Account basis.

28.11 For contract changes, the Owner, State and Government or their representative shall have the audit and inspection rights as described below:

28.11.1 Where the agreed payment method for any contract changes is to be by cost reimbursement, time and material, labor hours or any combination thereof, the Contractor shall maintain and the Owner or its representatives shall have the right to examine books, records, documents and other evidence and accounting principles and practices sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of the contract changes under this sub article.

28.11.2 Contract changes exceeding \$100,000.00 in cost: For submitted cost and pricing data in connection with pricing a contract modification referred to in this sub article, unless such pricing is based on bid unit prices, adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public, or prices set by law or regulation, the Owner or his representatives and the Comptroller General of the United States and his representatives who are employees of the United States shall have the right to examine all books, records, documents and other data of the Contractor related to the negotiation of or performance under the contract Change Orders for the purpose of evaluating the accuracy, completeness and currency of the cost or pricing data submitted. The right of examination shall extend to all documents necessary to permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

28.11.3 Contract changes exceeding \$10,000.00 but not \$100,000.00 in cost: The Owner or his representatives prior to the execution of any contract Change Order in this sub article or for a period of twelve months after execution shall, unless such pricing is based on bid unit prices, adequate price competition, established catalog of market prices or commercial items sold in substantial quantities to the public, or prices set by law or regulation, have the right to examine all books, records, documents, and other data of the Contractor relating to the negotiation and contract Change Order for the purpose of evaluating the accuracy, completeness, and currency of the data is submitted upon which negotiation is or has been based. To the extent the examination reveals inaccurate, incomplete or noncurrent data, the Project Manager may renegotiate the contract Change Order price based on such data.

28.11.4 Contract changes of less than \$10,000.00 in cost: The Owner may require from the Contractor appropriate documentation to support the prices being negotiated for contract changes

under this sub article, and may refuse to complete negotiations until satisfactory documentation is submitted.

28.11.5 Availability: The materials described in Paragraphs 28.11.1 and 28.11.2 above shall be available at the office of the Contractor at all reasonable times for inspection, audit or reproduction until three years from the date of final payment under this Contract and for records which relate to Article 35, DISPUTES, or litigations or the settlement of claims arising out of the negotiation or the performance of contract changes over 100,000.00, records shall be made available until such litigations or claims have been resolved.

28.11.6 The Contractor shall insert a clause containing all the provisions in this Paragraph 28.11, including this subparagraph 28.11.6, in all subcontracts hereunder except altered as necessary for proper identification of the contracting parties and Owner.

28.11.7 For the purposes of Paragraph 28.11 of this Article, costs shall include liquidated damages which would be assessed if extension(s) of time were not granted by contract Change Order.

28.11.8 The requirements of this audits and records article are in addition to other audit, inspection and record keeping provisions elsewhere in the Contract Documents.

28.12 Changes involving aggregate increases and decreases in excess of \$100,000.00 shall be subject to the following:

28.12.1 A change involves aggregate increases and decreases in excess of \$100,000.00 if the total value of work affected, without regard to the arithmetic sign, exceeds this amount; for example, a change order adding work in the amount of \$75,000.00 and deleting work in the amount of \$50,000.00 will be considered to involve aggregate increases and decreases of \$125,000.00.

28.12.2 The Contractor shall submit in support of all items not based upon unit prices or lump sum prices contained in the Contract or upon the established prices at which commercial items are sold in substantial quantities to the public, statements by his vendors that the prices charged the Contractor are not greater than the prices charged by the respective vendors to their most favored customers for the same items in similar quantities.

28.12.3 Price reductions for Defective Cost or Pricing Data--Pricing Adjustments: If any price, including profit and fee, negotiated in connection with any price adjustment was increased by any significant sums because:

28.12.3.1 The Contractor furnished cost or pricing data which were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data;

28.12.3.2 A subcontractor, pursuant to Paragraph 28.13 of this Article entitled Subcontractor Cost or Pricing Data--Pricing Adjustments or any subcontract provision therein required, furnished costs or pricing data which were not complete, accurate, and current as certified in the Subcontractor's Certificate of Current Cost or Pricing Data;

28.12.3.3 The subcontractor or his prospective subcontractor furnished cost or pricing data which were required to be complete, accurate, and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which were not complete, accurate, and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data; or

28.12.3.4 The Contractor or a subcontractor or his prospective subcontractor furnished any data, not within subparagraphs 28.12.3.1, 28.12.3.2, or 28.12.3.3 above, which were not complete, accurate, and current as submitted, the price shall be reduced accordingly and the Contract shall be modified in writing as may be necessary to reflect such reduction. Any reduction in the Contract Price due to defective subcontract data of a prospective subcontractor, when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor, provided the actual subcontract price was not affected by defective cost or pricing data.

28.13 Subcontract Cost of Pricing Data-- Pricing Adjustment:

28.13.1 When negotiating a change involving increases or decreases in excess of \$100,000.00, the Contractor shall require subcontractors hereunder to submit cost or pricing data under the following circumstances. Prior to award of any cost-reimbursement type, incentive or price redeterminable subcontract;

28.13.1.2 Prior to the award of any subcontract the price of which is expected to exceed \$100,000.00;

28.13.1.3 Prior to the pricing of any subcontract change modifications for which the price is expected to exceed \$100,000.00, except in the case of 28.13.1.2 and 28.13.1.3 where the price is based on adequate price competition, established catalog or market prices, commercial items sold in substantial quantities to the general public, or prices set by law or regulation.

28.13.2 The Contractor shall require subcontractors to certify to the best of their knowledge and belief that the cost and pricing data submitted under subparagraph 28.13.1 of this Article are accurate, complete, and current as of the date of execution, which date shall be as close as possible to the date of agreement on the negotiated price of the contract Change Order.

28.13.3 The Contractor shall insert the substance of Paragraph 28.13 of this Article, including this subparagraph 28.13.3, in each subcontract hereunder which exceeds \$100,000.00.

ARTICLE 29 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

29.1 The Contractor shall furnish a Performance Bond in the amount equal to one hundred percent (100%) of the Contract Sum as security for the faithful performance of this Contract and also a Labor and Material Payment Bond in an amount not less than one hundred percent (100%) of the

Contract Sum or in a penal sum not less than that prescribed by State, or local law, as security for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract. The Performance Bond and the Labor and Material Payment Bond may be in one or in separate instruments in accordance with local law and shall be delivered to the Owner not later than the date of execution of the Contract.

29.2 Performance Bonds, Labor and Material Payment Bonds and other such sureties shall provide that the surety and the Contractor are both jointly and severally liable and obligated under respective Bond or other surety agreement and shall incorporate acknowledge of applicable provisions of state law into all documents furnished in connection with the project.

ARTICLE 30 DIFFERING SITE CONDITIONS

30.1 The Contractor shall within 10 days of actual or constructive notice of a differing site condition, promptly, and before such conditions are disturbed, notify the Project Manager in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract. The Project Manager will promptly investigate the conditions, and if such conditions materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under the Contract, whether or not changed as a result of such conditions, an equitable adjustment may be made subject to Owner's approval and the Contract modified in writing accordingly.

30.2 No claim of the Contractor under this Article will be allowed unless the Contractor has given the notice required in Paragraph 30.1 of this Article.

30.3 No claim by the Contractor for an equitable adjustment hereunder will be allowed if asserted after final payment under this Contract.

ARTICLE 31 CONTRACTOR PROPOSALS

31.1 The Contractor may at any time submit to the Project Manager for his review proposed modifications to the Contract Documents, supported by a cost/price proposal. Upon acceptance of the proposed modifications by the Owner, a Change Order will be issued. Denial of the proposed modification will neither provide the Contractor with any basis for claim for damages nor release the Contractor from contractual responsibilities. An equitable adjustment in the form of a contract price reduction will be made if the change results in a reduction of the cost of performance and the Contractor will not be entitled to share in said savings unless the proposal is made under Paragraph 31.2 of this Article. Except as provided in Paragraph 31.2 of this Article, the Contractor will not be compensated for any direct, incidental or collateral benefits or savings the Owner receives as a result of the proposal.

31.2 Value Engineering Change Proposals: The Contractor may submit to the Project Manager one or more cost reduction proposals for changing the Contract requirements. The Proposals shall be based upon a sound study made by the Contractor indicating that the proposal:

31.2.1 Will result in a net reduction in the Total Contract amount;

31.2.2 Will not impair any essential function or characteristic of the Work such as safety, service life, reliability, economy of operation, ease of maintenance and necessary standardized features.

31.2.3 Will not require an unacceptable extension of the contract completion time; and

31.2.4 Will require a change in the Contract Documents and such change is not already under consideration by the Owner.

31.3 The Owner may accept in whole or in part any proposal submitted pursuant to the previous Paragraph 31.2 by issuing a Change Order which will identify the proposal on which it is based. The Change Order will provide for an equitable adjustment in the Contract Price and will revise any other affected provisions of the Contract Documents. The equitable adjustment in the Contract price will be established by determining the net savings resulting from the accepted change. The net savings resulting from the change will be shared between the Contractor and the Owner on the basis of 50 percent for the Contractor and 50 percent for the Owner and will be limited to this contract for any one Value Engineering Change Proposal. Net savings will be determined by deducting from the estimated gross savings, the Contractor's costs of developing and implementing the proposal (including any amount attributable to a subcontractor) and the estimated amount of increased costs to the Owner resulting from the change, such as evaluation, implementation, inspection, related items, and the Owner-furnished material. Estimated gross savings will include Contractor's labor, material, equipment, overhead, profit and bond. The Contract price will be reduced by the sum of the Owner's costs and share of the net savings. For the purpose of this Article, the applicable provisions of Article 28, CHANGES, shall be used to determine the equitable adjustment to the Contract price.

31.4 The Owner will not be liable for delay in acting upon, or for failure to act upon, any proposal submitted pursuant to Paragraph 31.2 of this Article. The decision of the Owner as to the Acceptance or rejection of any such proposal under the Contract will be final. The submission of a proposal by the Contractor will not in itself affect the rights or obligations of either party under the Contract.

31.5 The Contractor shall have the right to withdraw part or all of any proposal he may make under Paragraph 31.2 of this Article at any time prior to acceptance by the Owner. Such withdrawal shall be made in writing to the Project Manager. Each such proposal shall remain valid for a period of 60 days from the date submitted. If the Contractor wishes to withdraw the proposal prior to the expiration of the 60-day period, he will be liable for the cost incurred by the Owner in reviewing the proposal.

31.6 The Contractor shall specifically identify any proposals under Paragraph 31.2 of this Article with the heading "Value Engineering Change Proposal", or the proposal will be considered as made under Paragraph 31.1 of this Article.

31.7 The Contractor, in connection with each proposal he makes for a Contract Change Notice under this Article shall furnish the following information:

31.7.1 a description of the difference between the existing Contract requirement and the proposed change, and the comparative advantages and disadvantages of each, justification when a function or characteristic of an item is being altered, and the effect of the change on the performance of the end item;

31.7.2 an analysis and itemization of the requirements of the Contract which must be changed if the Value Engineering Change Proposal is accepted and a recommendation as to how to make each such change (e.g., a suggested specification revision);

31.7.3 a separate detailed cost estimate for both the existing Contract requirement and the proposed change to provide an estimate of the reduction in costs, if any, that will result from acceptance of the Value Engineering Change Proposal taking into account the costs of development and implementation by the Contractor;

31.7.4 a prediction of any effects the proposed change would have on collateral costs to the Owner such Government-furnished property costs, costs of related items, and costs of maintenance and operation;

31.7.5 a statement of the time by which a contract modification accepting the Value Engineering Change Proposal must be issued so as to obtain the maximum cost reduction, noting any effect on the contract completion time or delivery schedule; and

31.7.6 identification of any previous submission of the Value Engineering Change Proposal to the Owner, including the dates submitted, the numbers of contracts involved, and the previous actions by the Owner, if known.

ARTICLE 32 EXTENSION OF TIME

32.1 In addition to the provisions stated in Article 38, the Contractor will be granted an extension of time and will not be assessed liquidated damages for any portion of the delay in completion of the Work, performed under the latest approved progress schedule, arising from acts of God, war, fires, floods, epidemics, quarantine restrictions, freight embargoes, or weather more severe than the norm, provided that the aforesaid causes were not foreseeable and did not result from the fault or negligence of the Contractor, and provided further that the Contractor has taken reasonable precautions to prevent further delays owing to such causes, and has notified the Project Manager in writing of the cause or causes of delay within five days from the beginning of any such delay. Within 15 days after the end of the delay, the Contractor shall furnish the Project Manager with detailed

information concerning the circumstances of the delay, the number of days actually delayed, the appropriate Contract Document references, and the measures to be taken to prevent or minimize the delay. Failure to submit such information will be sufficient cause for denying the delay claims. The Owner will ascertain the facts and the extent of the delay, and its findings thereon will be final and conclusive to provisions under Article 35, DISPUTES. The extension of time granted for these reasons shall not be the basis for additional compensation for any costs incurred during the time of delay.

32.1.1 Every effort shall be made by the Contractor to complete the project within the "Contract Time". The "Contract Time" anticipates "Normal" weather and climate. The Contractor's schedule must anticipate normal adverse weather delays on all weather dependent activities. The following specifies the procedure for determining time extensions for unusually severe weather. Listed below are the anticipated numbers of calendar days lost to normal adverse weather for each month.

Monthly Anticipated Calendar Days Lost to Adverse Weather Conditions

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	(7)	(4)	(4)	(4)	(6)	(3)	(4)
(2)	(3)	(3)	(2)	(5)														

The above schedule of anticipated adverse weather days will constitute the base line for monthly (or portion thereof) weather time evaluations. It is assumed that the work will be carried out Mondays through Fridays (holidays excepted) unless and approved construction schedule or written authorization from the Owner indicates otherwise.

An actual adverse weather day must prevent work for 50 percent or more of the Contractor's workday. When the Contractor anticipates documenting a weather day, he/she shall first notify the Project Manager or his/her designee observing the construction to determine whether or not work can proceed or if work is delayed due to adverse weather or the effects thereof. If in agreement, the Contractor shall formally request a weather day in writing to the Owner's Project Manager or his/her designee. The Contractor shall also notify the Owner's Project Manager in writing or his/her designee of any disagreement as to whether or not work could have proceeded on a given date within 2 calendar days of that date. The final decision regarding an adverse weather day will be made by the Project Manager or his/her designee.

The number of workdays delayed due to adverse weather or the effects thereof will then be converted to Calendar Days. Weekends and holidays will only count as calendar day delays if a workday delayed due to adverse weather is counted before and after the weekend/holiday. The number of calendar days of delay due to adverse weather or the impact thereof will then be compared to the monthly adverse weather schedule above. The Contract time period will then be increased by change order for the number of calendar days that are in excess of the above schedule and a new Contract Completion day and date will be set.

32.1.2 An extension of time will not be granted for a delay caused by a shortage of materials, except Owner-furnished materials, unless the Contractor furnishes to the Project Manager documentary

proof that he has diligently made every effort to obtain such materials from every known source within reasonable reach of the Work. The Contractor shall also submit proof that the inability to obtain such materials when originally planned did in fact cause a delay in final completion of the Work which could not be compensated for by revising the sequence of his operations. Only the physical shortage of material will be considered under these provisions as a cause for extension of time. No consideration will be given to any claim that material could not be obtained at reasonable, practical, or economical costs, unless it is shown to satisfaction of the Project Manager that such material could have been obtained only at exorbitant prices, entirely inconsistent with current rates taking into account the quantities involved and the usual practices in obtaining such quantities.

32.2 A Change Order will be furnished to the Contractor within a reasonable period of time after approval of a request for extension of time, specifying the number of days allowed, if any, and the new date for completion of the Work or specified portions of the Work.

32.3 See also Article 38, TERMINATION FOR DEFAULT--DAMAGES FOR DELAY--TIME EXTENSIONS.

ARTICLE 33 NOTICE OF POTENTIAL CLAIM

33.1 The Contractor will not be entitled to additional compensation otherwise payable for an act or failure to act by the Owner, the happening of any event or occurrence, or any other cause, unless he shall have given the Project Manager a written notice of potential claim therefore as specified in this Article.

33.2 The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and insofar as possible, the amount of the potential claim. If based on an act or failure to act by the Owner, such notice shall be given to the Project Manager prior to the time that the Contractor has started performance of work giving rise to the potential claim for additional compensation. Notice shall be given within five days after the happening of the event or occurrence giving rise to the potential claim.

33.3 It is the intention of this Article that differences between the parties arising under and by virtue of the contract shall be brought to the attention of the Project Manager at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken.

33.4 The notice requirements of this Article are in addition to those required in other Articles of the General Conditions.

ARTICLE 34 SUBMITTAL OF CLAIMS

34.1 Claims filed by the Contractor shall contain sufficient detail to enable the Owner to ascertain the basis and amount of said claims. The Owner will review and evaluate the Contractor's claims. It will be the responsibility of the Contractor to furnish when requested by the Project

Manager such further information and details as may be required to determine the facts or contention involved in his claims. Failure to submit such information and details will be sufficient cause for denying the Contractor's claims.

34.2 Each claim the Contractor may make for equitable adjustment on account of delay for any cause shall be accompanied by a progress schedule reflecting the effects of the delay and proposals to minimize these effects. If no progress schedule has been submitted to the Project Manager reflecting conditions prior to the delay for which relief is sought, then a progress schedule so reflecting these conditions shall be prepared and submitted with the claim.

34.3 Depending upon the grounds for relief and the nature of relief sought, additional submittals and conditions upon submitting claims may be required elsewhere in these General Conditions.

34.4 In no event shall claims be made after final payment is made under Article 27, FINAL PAYMENT, of these General Conditions.

34.5 Inasmuch as notice of potential claim requirements of Article 33, NOTICE OF POTENTIAL CLAIM, are intended to enable the Project Manager to investigate while facts are fresh and to take action to minimize or avoid a claim which might be filed thereafter, the Contractor's failure to make the required notice on time is likely to disadvantage the Owner. Therefore no claim for which a notice of potential claim is required will be considered unless the Contractor has complied with the notice of Article 33, NOTICE OF POTENTIAL CLAIM.

ARTICLE 35 DISPUTES

35.1 General: Notwithstanding any other provisions of this Contract, disputes and disagreements by and between the Owner and the Contractor shall be resolved through progressive, sequential process of negotiation, mediation, and in certain cases, arbitration. For contracts which are for \$250,000 or less, amounts in dispute which are less than \$10,000 shall not progress beyond negotiation and shall ultimately be decided by the Owner if not by mutual agreement. For contracts which are for more than \$250,000, amounts in dispute which are less than \$25,000 should not progress beyond negotiation. For all contracts, amounts in dispute greater than those amounts set forth above, but less than \$100,000 shall be resolved through a sequential process of negotiation, mediation, and binding arbitration. Amounts in dispute which are \$100,000 or more shall be resolved through a sequential process of negotiation, mediation, and thence either arbitration or litigation.

35.2 Negotiation: In the event of disputes, unsettled claims, questions or disagreements between the contractor and the City relating to or arising out of the provisions of this Contract, the representatives of those parties shall meet promptly in recognition of mutual interests and in a good faith effort to resolve the dispute. Either the Contractor or the City shall arrange for this meeting at a time and place within the City of Greeley, mutually acceptable to both parties, within fifteen (15) days of notification of the dispute, unsettled claim, question, or disagreement between the parties. Seven (7) days prior to the meeting, the initiating party shall deliver to the other party, a written and complete

summary of the evidence and arguments substantiating its claim. If the parties do not reach a solution within thirty (30) days after said initial meeting, then upon notice of either party to the other, the dispute, claim, question, or difference, may be referred to a mediator pursuant to Section 35.3. The parties can extend the negotiation period by mutual written agreement.

35.3 Mediation: If the dispute, claim, question, or difference is not resolved by negotiation within thirty (30) days after the initial meeting between the parties or within the extended period agreed upon, the parties agree to next request that the American Arbitration Association provide a mediator to assist the Owner and Contractor in resolving the dispute, claim, question, or difference. The rules of mediation shall be the Construction Industry Mediation Rules of the American Arbitration Association. A different mediation/dispute resolution agency may be selected for mediation upon the mutual written agreement between the parties. The dispute resolution agency shall select a qualified mediator who shall have a background in construction. The selected mediator may be rejected by the parties only for bias. The mediator shall have thirty (30) days from the time of appointment to meet with the parties and sixty (60) days from the time of the appointment to resolve the dispute unless the parties mutually consent to an extension of the sixty day deadline. All reasonable fees, costs, and expenses of the mediator, the mediator's association and the mediation agency, shall be borne equally by the parties. Each party shall bear the expense of its own counsel, experts, witnesses, and preparation and presentation of proofs at mediation.

The Contractor shall not cause a delay of work during mediation proceedings except by mutual agreement. All mediation proceedings shall be conducted in the City of Greeley, unless an alternate location is agreed upon in writing by the Owner and the Contractor.

Amounts in dispute which are less than \$10,000 shall not progress beyond mediation.

35.4 Litigation prerequisites: The procedures enumerated in Sections 35.2 and 35.3 shall be a prerequisite to the filing of any litigation between the parties to the Contract. Failure of the Contractor to follow the provisions of Section 35.2 and Section 35.3 shall be a complete defense, and grounds for immediate dismissal of any litigation filed prior to Contractor engaging in negotiation and mediation with the City of Greeley as provided above. Litigation may be filed only if the amount in dispute is \$100,000 or more. In the event litigation is filed by and between the parties after mediation, venue and jurisdiction of any and all suits and causes of action in connection with this Contract shall lie exclusively in Weld County, Colorado.

35.5 Arbitration: After mediation, instead of litigation, any remaining unresolved controversy or claim arising out of or relating to this Contract or the performance or breach thereof, may be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. For amounts in dispute which are \$100,000 or more, arbitration shall be engaged only upon mutual written agreement by the Owner and the Contractor, and the written agreement shall specify whether the arbitration shall be binding or nonbinding; however, amounts in dispute which are less than \$100,000 shall necessarily be settled by binding arbitration. The sole arbitrator shall be appointed by the Arbitration Association, unless a different arbitrator or dispute resolution agency is mutually agreed upon. The award of the arbitrator shall be accompanied by a

reasoned opinion, and shall include findings of fact and conclusions. All fees and expenses of the arbitration, including the expense of each party's counsel, experts, witnesses, and preparation and presentation of proofs, shall be borne by the party against whom arbitration judgment is made.

35.6 Litigation: Each party shall bear its own litigation fees and expenses, including the expense of its counsel, experts, witnesses, and preparation and presentation of proofs, regardless of the prevailing party.

ARTICLE 36 FORCE ACCOUNT WORK

36.1 This Article shall become operative upon failure of the Contractor and the Owner to arrive at an amount of compensation under Article 28, CHANGES. In the event that no equitable adjustment is arrived at either by mutual agreement or pursuant to the Article 35, DISPUTES, the compensation paid hereunder will be the total compensation.

36.2 Work Performed by or for Contractor: The Contractor will be paid for labor, materials, and equipment as hereinafter provided, except where agreement has been reached to pay in accordance with Paragraph 36.3 of this Article. The following percentages, as full compensation for profit, overhead and small tools, will be added to the totals computed as provided in subparagraphs 36.2.1 through 36.2.3 of this Article.

Labor 25 percent
Materials 20 percent
Equipment 10 percent

Labor, materials, and equipment shall be furnished by the Contractor or by a subcontractor. When work paid on a force account basis is performed by forces other than the Contractor's, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the Owner for such work and, except as specified herein, no additional payment therefore will be made by the Owner by reason of performance of work by a subcontractor or by others. In addition to the markups, if any, for labor, equipment, and materials, for subcontracted work, the Contractor may add an additional five percent markup. The cost of subcontracted work will be the actual cost to the contractor for work performed by a subcontractor as computed in accordance with this Paragraph 36.2 and its subparagraphs 36.2.1, 36.2.2, and 36.2.3.

36.2.1 Labor: The cost of labor used in performing the work, whether the employer is the Contractor or a subcontractor, will be the sum as determined on the basis of the following three subparagraphs:

36.2.1.1 The gross actual wages, including income tax withholdings but not including employer payments to or on behalf of workmen for health and welfare, pension, vacation, insurance and similar purposes.

36.2.1.2 To the gross actual wages, as defined in the previous subparagraph,

36.2.1.1, will be added a percentage based upon current State and Federal laws and applicable labor contracts concerning payments made to or on behalf of workmen other than actual wages, which percentage will constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to or on behalf of the workmen, other than actual wages as defined in the previous subparagraph 36.2.1.1 and the subsistence and travel allowance as specified in the following subparagraphs 36.2.1.3. The Contractor shall compute a separate percentage for each craft, or a composite percentage for all crafts, if so approved by the Owner. Computed percentages shall be submitted to the Project Manager for approval by the Owner.

36.2.1.3 Subsistence and travel allowance paid to workmen as required by established agreements.

36.2.1.4 The charges for labor shall include all classifications up to but not including foremen, and when authorized by the Owner, shall include foremen engaged in the actual and direct performance of the work. Labor charges shall not include charges for assistant superintendents, office personnel, timekeepers, and maintenance mechanics, unless authorized by the Owner in advance of the start of work.

36.2.2 Materials: The cost of materials required for the accomplishment of the work will be delivered cost to the purchaser, whether contractor or subcontractor, from the supplier thereof, except as the following are applicable:

36.2.2.1 If a cash or trade discount by the actual supplier is offered or available to the Contractor, it shall be credited to the Owner notwithstanding the fact that such discount may not have been taken.

36.2.2.2 If materials are procured by the Contractor by a method which is not a direct purchase from and a direct billing by the actual supplier, the cost of such materials will be deemed to be the price paid to the actual supplier, as determined by the Owner. No additional markup for supplier work will be allowed except to the extent of actual cost to the Contractor in handling the material, not to exceed five percent of the price paid to actual supplier.

36.2.2.3 If the materials are obtained from a supply or source owned wholly or in part by the Contractor, payment therefore will not exceed the price paid for similar materials furnished from said source on Contract Items or the current wholesale price for such materials delivered to the work site, whichever price is lower.

36.2.2.4 If the cost of the materials is, in the opinion of Owner, excessive, then the cost of such materials will be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned, delivered to the job site, less discounts as provided in subparagraph 36.2.2.1 of this Article.

36.2.2.5 If the Contractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier thereof, the cost will be determined in accordance with subparagraph 36.2.2.4 of this Article.

36.2.2.6 The Contractor shall have no claims for costs and profit on Owner-furnished materials.

36.2.3 Equipment: The Contractor will be paid for the use of contractor-owned or rented equipment at the rental rates shown in the Colorado State Department of Highways Construction Equipment Rental Rate Schedule, except as modified below, which edition shall be the latest edition in effect at the time of commencement of the Force Account work. For equipment used in excess of eight hours per day, the rental rate shall be 60 percent of the listed hourly rate. If it is deemed necessary by the Contractor to use equipment not listed in the C.D.O.H. Construction Equipment Rental Rate Schedule, the Contractor shall furnish the necessary cost data and paid invoices to the Project Manager for his use in establishment of such rental rate.

36.2.3.1 The rates paid as above provided will include the cost of fuel, oil, lubricants, supplies, small tools, necessary attachments, repairs and maintenance, depreciation, storage, insurance and incidentals.

36.2.3.2 Equipment operators will be paid for as stipulated in subparagraph 36.2.1 of this Article.

36.2.3.3 Equipment shall be in good working condition and suitable for the purpose for which the equipment is to be used.

36.2.3.4 Unless otherwise specified, manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer of that equipment.

36.2.3.5 Individual pieces of equipment or tools having a net individual value of \$300 or less, whether or not consumed by use, will be considered to be small tools and no payment will be made therefore.

36.2.3.6 Compensation will not be allowed while equipment is inoperative due to breakdown. Except as specified in paragraph 36.2.3.7 of this Article, time will be computed in half and full hours. In computing the time for use of equipment, less than 30 minutes shall be considered one half hour.

36.2.3.7 Equipment at the Work Site: The time to be paid for use of equipment on the work site will be the time the equipment is in operation on the force account work being performed. The time will include the time required to move the equipment to location of the force account work and return it to the original location or to another location requiring no more time than that required to return it to its original location. Moving time will not be paid for if the equipment is used at the site of the force account work on other than such force account work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power. No

payment for loading and transporting will be made if the equipment is used at the site of the force account work on other than such force account work.

36.3 Special Items of Work: If the Owner and the Contractor, by agreement, determine that (a) an item of force account work does not represent a significant portion of the total Contract price, and (b) such items of work cannot be performed by the forces of the Contractor or the forces of any of his subcontractors, and (c) it is not in accordance with the established practice of the industry involved to keep the records which the procedure outlined in Paragraph 36.2 of this Article would require, charges for such special force account work items may be made on the basis of invoices for such work without complete itemization of labor, materials, and equipment rental costs. To such invoiced price, less a credit to the Owner for any cash or trade discount offered or available, will be added five percent of the discounted price, in lieu of the percentages provided in Paragraph 36.2 of this Article. In no event will the price paid exceed the current fair market value of such work plus five percent.

6.4 Records: The Contractor shall maintain his records to provide a clear distinction between the direct costs of work paid for on a force account basis and costs of other operations.

36.4.1 The Contractor shall prepare and furnish to the Project Manager, on the following work day, report sheets in duplicate of each day's work paid for on a force account basis. The daily report sheets shall itemize the materials used and shall cover the direct cost of labor and the charges for equipment, whether furnished by the Contractor, subcontractor, or other forces, except for charges described in Paragraph 36.3 of this Article. The daily report sheets shall provide names or identifications and classifications of workmen and the hourly rate of pay and hours worked. In addition, a report of the size, type and identification number of equipment and hours operated shall be furnished to the Project Manager. Daily report sheets shall be signed by the Contractor or his authorized agent.

36.4.2 Material changes shall be substantiated by valid copies of vendor's invoices or conformed copies, certified true by the Contractor. Such invoices shall be submitted with the daily report sheets. Should the vendor's invoices not be submitted within 20 days after the date of delivery of the material or 15 days after acceptance of the work, whichever comes first, the Owner reserves the right to establish the cost of such materials at the lower current wholesale prices at which such materials are available in the quantities concerned delivered to the location of the work, less any discounts provided in subparagraph 36.2.1. of this Article.

36.4.3 The Project Manager will compare his records with the daily report sheets furnished by the Contractor, make any necessary adjustment and compile the costs of work paid for on a force account basis on daily force account work report forms. When these daily reports are agreed upon and signed by the Project Manager, they shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit.

36.4.4 The Contractor's original cost records pertaining to work paid for on a force account basis shall be retained and shall be open to inspection and audit as required by Article 28, CHANGES, and any other provisions of the Contract.

36.5 If, in the Project Manager's opinion, the Contractor or any of his subcontractors, in performing Force Account work, is not making efficient use of labor, material or equipment or is proceeding in a manner which makes Force Account work unnecessarily more expensive to the Owner, the Project Manager may, in whole or part, direct the Contractor in the deployment of labor, material and equipment. By way of illustration, inefficiency may arise in the following ways: (1) the timing of the work, (2) the use of unnecessary labor or equipment, (3) the use of a higher percentage of apprentices than in non-force account work, (4) failure to procure materials at the lowest price, or (5) using materials of quality higher than necessary.

ARTICLE 37 TERMINATION FOR CONVENIENCE OF THE OWNER

37.1 The performance of Work under this contract may be terminated by the Owner in accordance with this Article in whole, or from time to time in part, whenever such termination is in the best interest of the Owner. Such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

37.2 After receipt of a Notice of Termination, and except as otherwise directed by the Owner, the Contractor shall:

37.2.1 Stop work under the Contract on the date and to the extent specified in the Notice of Termination.

37.2.2 Place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the work under the Contract as is not terminated;

37.2.3 Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination;

37.2.4 Assign to the Owner in the manner, at the times, and to the extent directed by it, all of the rights, title and interest of the Contractor under the orders and subcontracts so terminated, in which case the Owner will have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

37.2.5 Settle outstanding liabilities and claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Owner to the extent it may require, which approval or ratification shall be final for the purposes of this Article;

37.2.6 Transfer title and deliver to the Owner in the manner, at the times, and to the extent, if any directed by it, (a) the fabricated or unfabricated parts, work in process, completed work, supplies and other material procured as part of, or acquired in connection with the performance of, the work terminated by the Notice of Termination, and (b) the completed or partially completed plans,

drawings, information, and other property, which, if the Contract had been completed, would have been required to be furnished to the Owner;

37.2.7 Use his best efforts to sell, in the manner, at the times, to the extent, and at the price or prices direction or authorized by the Owner, property of the types referred to in (37.2.5) above; provided, however, that the Contractor (a) shall not be required to extend credit to any purchaser and (b) may acquire any such property under the conditions prescribed by and at a price or prices approved by the Owner; provided further that the proceeds of any such transfer or disposition will be applied in reduction of any payments to be made by the Owner to the contractor under this Contract or will otherwise be credited to the price or cost of the work covered by this Contract or paid in such other manner as the Owner may direct;

37.2.8 Complete performance of each part of the work as shall not have been terminated by the Notice of Termination; and

37.2.9 Take such action as may be necessary, or as the Project Manager may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the Owner has or may acquire an interest.

37.3 After receipt of a Notice of Termination, the Contractor shall submit to the Project Manager his termination claim, in the form and with certification prescribed by the Owner. Such claims shall be submitted promptly but in no event later than the earliest of the following: (1) one year from the effective date of termination or (2) thirty days after the remainder of the project has been accepted by the owner.

37.4 Subject to the provision of Paragraph 37.3, the contractor and the Owner may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or partial termination of work pursuant to this Article, which amount or amounts may include an allowance for profit on work done; provided that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract price of work terminated. The Contract will be amended accordingly, and the Contractor will be paid the agreed amount.

37.5 In the event of failure of the Contractor and the Owner to agree, as provided in Paragraph 37.4, upon the whole amount to be paid the Contractor by reason of the termination of work pursuant to this Article, the Owner will pay the Contractor the amounts determined by the Owner as follows, but without duplication of any amounts agreed upon in accordance with Paragraph 37.4;

37.5.1 With respect to contract work performed prior to the effective date of the Notice of Termination, the total (without duplication of any items) of:

37.5.1.1 The cost of such work;

37.5.1.2 The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in subparagraph 37.2.5 above, exclusive of the amounts paid or

payable on account of supplies or materials delivered or services furnished by the subcontractor prior to the effective date of the Notice of Termination of work under this Contract, which amounts shall be included in the cost on account of which payment is made under 37.5.1 above.

37.5.1.3 A sum, as profit on 37.5.1.1 above, determined by the Owner to be fair and reasonable; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, no profit shall be included or allowed under this subparagraph 37.5.1.3 and an appropriate adjustment shall be made by reducing the amount of the settlement to reflect the indicated rate of loss.

37.5.2 The reasonable cost of the preservation and property incurred pursuant to subparagraph 37.2.9 and any other reasonable cost incidental to termination of work under this Contract, including expense incidental to the determination of the amount due to the Contractor as the result of the termination of work under this Contract.

37.5.3 The total sum to be paid to the contractor under paragraph 37.5.1 above will not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract price of the work terminated.

37.6 In arriving at the amount due the Contractor under this Article, there will be deducted (1) any claim which the Owner may have against the Contractor in connection with this Contract, (2) the agreed price for, or the proceeds of sale, of materials, supplies or other things acquired by the contractor or sold, pursuant to the provisions of this Article, and not otherwise recovered by or credited to the Owner and (3) the full amount of any statutory or other claim against the Contractor filed with the Owner.

37.7 Unless otherwise provided for in this Contract, or by applicable statute, the Contractor, from the effective date of termination and for a period of three years after final settlement under this Contract, shall preserve and make available to the Owner at all reasonable times at the office of the Contractor but without direct charge to the Owner, all his books, records, documents, electronic/digital media and other evidence bearing on the costs and expenses of the Contractor under this Contract and related to the work terminated hereunder, or to the extent approved by the Owner, or other authentic reproductions thereof.

37.8 The Contractor shall insert in all subcontracts that the subcontractor shall stop work on the date of and to the extent specified in a Notice of Termination from the Owner and shall require that any tier subcontractors insert the same provision in any tier subcontracts.

37.9 Under no circumstances is the Contractor entitled to anticipatory, unearned profits or consequential damages as a result of a termination or partial termination under this Article.

ARTICLE 38
TERMINATION FOR DEFAULT

38.1 If, in the opinion of the Owner, the Contractor has failed to prosecute work, the Owner will notify the Contractor. The Contractor will then have 5 days to remedy the failure to prosecute work or to obtain the Owner's authorization for the delay or an extension of time as set forth in Article 32.

38.2 If the Contractor refuses or fails after reasonable notice as set forth above to prosecute Work, or any separable part thereof, with such diligence as will insure its completion within the time specified in this Contract, or refuses or fails to complete said Work within such time, the Owner may, by written notice to the Contractor, terminate for default his right to proceed with the Work or such part of the Work as to which there has been unauthorized delay. In such event the Owner may take over the work and prosecute the same to completion, by Contractor or otherwise, and may take possession of and utilize in completing the Work such materials, appliances, and plant as may be on the Work Site and necessary therefore. Whether or not the Contractor's right to proceed with the Work is terminated, he and his sureties shall be liable for any damage to the Owner resulting from his refusal or failure to complete the Work in the specified time.

38.3 If the Owner so terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such time as may be required for final completion of the Work together with any increased costs incurred by the Owner in completing the Work as further set forth in Article 41.

38.4 If, after Notice of Termination of the Contractor's right to proceed under the provisions of this Article, it is determined for any reason that the Contractor was not in default under the provisions of this Article or that the Contractor was entitled to an extension of time under Article 32, EXTENSION OF TIME, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to Article 37, TERMINATION FOR CONVENIENCE OF THE OWNER.

38.5 The right to terminate for default and any other rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE 39
TERMINATION OF RIGHT TO PROCEED FOR CERTAIN DEFAULTS

39.1 In addition to the Owner's right to terminate for default under other Articles of this Contract, the Owner will have the right to terminate the Contractor's performance of work in whole or in part for default for any of the following reasons:

39.1.1 The Contractor's or subcontractor's performance of work is in violation of the terms of the Contract.

39.1.2 The Contractor or subcontractor has violated an authorized order or requirement of the Owner.

39.1.3 Abandonment of Contract.

39.1.4 Assignment or subcontracting of the Contract or any work under the Contract without approval of the Owner.

39.1.5 Bankruptcy or appointment of a receiver for the Contractor's property.

39.1.6 Performance of the Contractor in bad faith.

39.1.7 Contractor allowing any final judgment to stand against him for a period of 48 hours (excluding weekends and legal holidays).

39.2 If, in the opinion of the Owner, the Contractor is in default of the Contract, the Owner will notify the Contractor. If the Contractor fails to remedy or commence to remedy the default within five days after receipt of such notice, the Owner may terminate the Contractor's right to proceed with the Work or that portion of the Work which the Owner determines is most directly affected by the default.

39.3 If, after Notice of Termination of Contractor's right to proceed under this Article it is determined for any reason Contractor was not in default, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to Article 37, TERMINATION FOR CONVENIENCE OF THE OWNER.

ARTICLE 40 RIGHTS AND OBLIGATIONS OF PARTIES AT TERMINATION FOR DEFAULTS

40.1 This Article shall apply to terminations for defaults covered in Article 15, 38, and 39 of these General Conditions.

40.2 On receipt of a Notice of Termination from the Owner, the Contractor shall:

40.2.1 Stop all work under the Contract on the date and to the extent specified in the Notice of Termination.

40.2.2 Place no further orders or subcontracts for materials, equipment or services except as they relate to the performance of work covered by the Notice of Termination.

40.2.3 Cancel or terminate all orders or subcontracts to the extent that they relate to the performance of work covered by the Notice of Termination.

40.2.4 Comply with all other requirements of the Owner as may be specified in the Notice of Termination.

40.3 Upon the Owner termination of the Contractor's right to proceed with the Work because of the Contractor's default under the Contract, the Owner will have the right to complete the Work by whatever means and method it deems advisable. The Owner shall have the right to take possession of and use any or all the Contractor's materials, plat, tools, equipment and property of any kind provided by or on behalf of the Contractor for the purpose of the Work, or a portion of them, without being responsible to the Contractor for fair wear and tear. The Contractor shall have no rights in such property during their use by the Owner. The Owner will not be required to obtain the lowest prices for completing the Work but shall make such expenditures as, in the Owner's sole judgment, best accomplish such completion.

40.4 The expense of completing the Work, together with a reasonable charge for engineering, managerial and administrative services, as certified by the Owner, will be charged to the Contractor and the expense so charged will be deducted by the Owner out of such monies as may be due or may at any time thereafter become due to the Contractor. In case such expense is in excess of the sum which otherwise would have been payable to the Contractor under the Contract, the Contractor or his surety shall promptly pay the amount of such excess to the Owner upon notice from the Owner of the excess so due. The Owner may, in its sole discretion, withhold all or any part of any progress payments otherwise due the Contractor until completion and final settlement of the Work covered by the Notice of Termination of Contractor's right to proceed.

40.5 The Contractor shall insert in all subcontracts that the subcontractor will stop work on the date of or to the extent specified in a Notice of Termination from the Owner and shall require the subcontractors to insert the same provision in any tier subcontracts.

40.6 The Contractor shall immediately upon receipt communicate any Notice of Termination issued by the Owner to the affected subcontractors and suppliers at any tier.

40.7 Rights of Surety: The Surety on the Performance Bond provided for in this Contract shall not be entitled to take over the Contractor's performance of work in case of termination under this Article, except with the consent of the Owner.

ARTICLE 41 LIQUIDATED DAMAGES

41.1 Time is of the essence of the Contract. In the event the Contractor fails to achieve Substantial Completion of the Work within the Contract Time, or fails to meet any other time requirement or the time limit set forth in the Contract, after due allowance for any extension or extensions of time made in accordance with the Contract, the Contractor shall pay to the Owner as fixed, agreed and liquidated damages, pursuant to the clause of the Contract entitled TERMINATION FOR DEFAULT—DAMAGES FOR DELAY—TIME EXTENSIONS, the sum of \$500.00 for each

calendar day of delay unless otherwise stated in the Special Provisions. Such liquidated damages shall be assessed for each and every day that the Contractor shall be in default. The Owner shall have the right to deduct said liquidated damages from any amount due or that may become due the Contractor, or to collect such liquidated damages from the Contractor or its surety.

41.2 Liquidated damages in the amount stipulated do not include any sums of money to reimburse the City for actual damages which may be incurred between Substantial Completion and Final Completion because of the Contractor's failure to achieve Final Completion within the Contract Time. For such delay in Final Completion, the Contractor shall reimburse the City, as a mitigation of City damages and not as a penalty, those administrative costs incurred by the City as a result of such failure.

41.3 Liquidated damages in the amounts stipulated do not include any sums of money to reimburse the City for extra costs which the City may become obligated to pay on other contracts which were delayed or extended because of the Contractor's failure to complete the Work within the Contract Time. Should the City incur additional costs because of delays or extensions to other contracts resulting from the Contractor's failure of timely performance, the City will assess these extra costs against the Contractor, and these assessments will be in addition to the stipulated liquidated damages.

41.4 The City reserves all of its rights to actual damages from the Contractor for injury or loss suffered by the City from actions or omissions of the Contractor, including but not limited to any other breach or default of the Contract, outside of the scope of the above sections.

ARTICLE 42 USE AND POSSESSION PRIOR TO COMPLETION

42.1 The Owner shall have the right to take possession of or use any completed or partially completed parts of the Work. Such possession or use will not be deemed an acceptance of Work not completed in accordance with the Contract. While the Owner is in such possession, the Contractor, notwithstanding the provisions of Article 18, DAMAGE TO WORK AND RESPONSIBILITIES FOR MATERIALS, will be relieved of the responsibility for loss or damage to the work other than that resulting from the Contractor's fault or negligence or breach of warranty. If such prior possession or use by the Owner delays the progress of the Work or causes additional expense to the Contractor, an equitable adjustment in the Contract price or the time of completion will be made, and the Contract will be modified in writing accordingly.

ARTICLE 43 RIGHTS IN SHOP DRAWINGS AND WORKING DRAWINGS

43.1 Shop Drawings and Working Drawings, submitted to the Project Manager by the Contractor, subcontractor or any lower tier subcontractor pursuant to the Work, may be duplicated by the Owner and the Owner may use and disclose, in any manner and for any purpose, Shop Drawings and Working Drawings delivered under this Contract.

43.2 This Article, including this Paragraph 43.2, shall be included in all subcontracts hereunder at all tiers.

ARTICLE 44 PATENT AND COPYRIGHT

44.1 The Contractor shall warrant that the materials, equipment or devices used on or incorporated in the Work shall be delivered free of any rightful claim of any third party for infringement of any United States patent or copyright. If notified promptly in writing and given authority, information and assistance, the Contractor shall defend, or may settle, at his expense, any suit or proceeding against the Owner or the Project Manager based on a claimed patent or copyright infringement which would result in a breach of his warranty. The Contractor shall pay all damages and costs awarded therein against the Owner or the Project Manager due to such breach. If any use of materials, equipment or devices is held to constitute an infringement and such use is enjoined, the Contractor shall, at his expense and option, either procure for the Owner the right to continue using said materials, equipment or devices, or replace same with noninfringing materials, equipment or devices, or modify same so it becomes noninfringing. The Contractor shall report to the Owner promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this Contract of which the Contractor has knowledge. In the event of any claim or suit against the Owner on account of any alleged patent or copyright infringement arising out of the performance of this Contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Owner when requested by the Owner, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Owner except where the Contractor has agreed to indemnify the Owner. This clause shall be included in all subcontracts.

ARTICLE 45 HISTORICAL, SCIENTIFIC AND ARCHAEOLOGICAL DISCOVERIES

45.1 All articles of historical, scientific or archaeological interest uncovered by the Contractor during progress of the Work shall be preserved in accordance with applicable law and reported immediately to the Project Manager. Further operations of the Contractor with respect to the find, including disposition of the articles, will be decided by the Owner in accordance with applicable law.

ARTICLE 46 SUBSTITUTIONS

46.1 Where reference is made to one or more proprietary products but restrictive descriptive material of only one manufacturer is used, it is understood that the products of other manufacturers will be accepted, provided they equal or exceed the standards set forth in the plans and specifications and are compatible with the intent and purpose of the design, subject to the written approval of the Owner and the Project Manager. If the descriptive material is not restrictive, the products of other manufacturers specified will be accepted without prior approval provided they are compatible with the intent and purpose of the design.

46.2 The Contractor may propose the substitutions of any material as a supplement to his bid with the monetary amount, additive or deductive as may be the case, clearly stated. Manufacturer's information, catalog numbers, and complete descriptive information shall be included with the proposed substitution. This shall be completely apart and separate from the base bid quotation and shall be solely for the information of the Owner, and the use of such proposed substitutions shall be strictly at the decision of the Owner. If substitution is accepted by the Owner, the Contract sum shall be adjusted from the base bid either up or down as indicated on the supplementary list.

ARTICLE 47 INSURANCE

47.1 General

47.1.1 The Contractor shall provide from insurance companies, acceptable to the Owner, the insurance coverage designated hereinafter and pay all costs. The Contractor also indemnifies the Owner as further described in Article 4.

47.1.2 Before commencing work under this Agreement, the Contractor shall furnish the Owner with certificates of insurance specified herein showing the type, amount, class of operations covered, effective dates, and date of expiration of policies. Furthermore, each such certificate shall contain a valid provision or endorsement that the policy may not be cancelled, terminated, changed or modified without first giving ten (10) days written notice to the Owner, which notice must be sent registered mail, return receipt requested, to the Project Manager.

47.1.3 In case of the breach of any provision of this Article, the Owner, at his option, may take out and maintain, at the expense of the Contractor, such insurance as the Owner may deem proper at the Contractor's expense and may deduct the cost of such insurance from any monies which may be due or become due the Contractor under this Agreement.

47.1.4 The Contractor shall either: (1) require each of his subcontractors to procure and maintain during the life of his subcontract, subcontractors' comprehensive General Liability, Automobile Liability and Property Damage Liability Insurance of the type and in the same amounts as specified in this subparagraph, or (2) insure the activity of his subcontractors in his own policy.

47.1.5 Co-Insurance: The Contractor herein agrees to name the Owner as an insured party on all liability insurance policies provided for by this Article 47, INSURANCE.

47.1.6 No insurance shall be cancelled or otherwise voided during the Contract period, without at least 10 days prior written notice to the Owner, nor shall any insurance be invalidated should the insured waive any or all right of recovery against any party.

47.1.7 Liability insurance may be arranged by Comprehensive General Liability and

Comprehensive Automobile Liability policies for the full limits required; or by a combination of underlying Comprehensive Liability policies for lesser limits with the remaining limits provided by an Excess or Umbrella Liability policy.

47.1.8 The Owner shall purchase and maintain such boiler and machinery insurance as may be required by the Contract Documents or by law. This insurance shall include the interest of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work.

47.1.9 Any loss insured under Article 47 is to be adjusted with the Owner and made payable to the Owner as trustee for the insured, as their interests may appear, subject to the requirements of any applicable mortgage clause. The Contractor shall pay each subcontractor a just share of any insurance monies received by the Contractor, and by appropriate share of any insurance monies received by the Contractor, and by appropriate agreement, written where legally required for validity, shall require each subcontractor to make payments to his subcontractors in similar manner.

47.1.10 If the Contractor requests in writing that insurance for risks other than those described in this Article or other special hazards be included in the Owner's property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

47.1.11 The Owner as trustee shall have power to adjust and settle any loss with the insurers.

47.1.12 If the Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion thereof, such occupancy or use shall not commence prior to a time mutually agreed to by the Owner and Contractor and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. This insurance shall not be cancelled or lapsed on account of such partial occupancy or use. Consent of the Contractor and of the insurance company or companies to such occupancy or use shall not be unreasonably withheld.

47.2 Workmen's Compensation and Employer's Liability Insurance:

47.2.1 The Contractor shall provide coverage and amounts as required by the Workmen's Compensation Act of the State of Colorado.

47.2.2 The Contractor shall provide Employer's Liability Insurance in an amount not less than \$100,000 for each occurrence.

47.2.3 The Contractor shall require any subcontractor to provide Workmen's Compensation and Employer's Liability Insurance in the same amounts for all of the subcontractor's employees to be engaged in work under this Agreement.

47.3 General Liability

47.3.1 General Liability Insurance shall be on a Comprehensive General Liability form and shall provide coverage for the following: Premises and Operations, Owners and Contractors Protective, Elevators, Independent Contractors, Products and Completed Operations, Contractual, Personal Injury, and Broad Form Property Damage; "XCU" exclusions must be deleted.

47.3.2 Minimum requirements for Comprehensive General Liability are: bodily injury, \$1,000,000.00 each person, \$2,000,000.00 each occurrence; property damage, \$1,000,000.00 each occurrence.

47.4 Automobile Liability

47.4.1 Comprehensive Automobile Liability Insurance shall include coverage for all owned motor vehicles and hired and non-owned motor vehicles.

47.4.2 Minimum requirements for Comprehensive Automobile Insurance are: bodily injury, \$1,000,000.00 each person, \$2,000,000.00 each occurrence; property damage, \$1,000,000.00 each occurrence.

47.5 Property Insurance:

47.5.1 The Owner may require the Contractor to purchase and maintain "Builder's Risk" Property Insurance for all work at the site to the full insurable value thereof. The Owner and the Project Manager shall be named as co-insured.

ARTICLE 48 UNCOVERING AND CORRECTION OF WORK

48.1 During construction, whenever materials requiring inspection in place by the Project Manager and the Owner to be permanently covered up, it shall be Contractor's responsibility to notify the Project Manager at least 24 hours in advance of commencement of such covering operation. In the event of failure by Contractor to give such notification, Contractor shall, at his own expense, uncover such portions of work as required by the Project Manager or the Owner, and reinstall such covering after satisfactory inspection and correction of any and all deficiencies.

ARTICLE 49 EQUAL OPPORTUNITY

49.1 The Contractor agrees to comply with the letter and spirit of the Colorado Antidiscrimination Act of 1957, as amended, and other applicable laws respecting discrimination and unfair employment practices (24-34-402, CRS 1973, as amended). The Contractor shall be responsible for any discriminatory or unfair employment practices of his subcontractors. Neither the Contractor nor any subcontractor will discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, religion, ancestry, mental or physical handicap, or age. Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, national

origin, sex, religion, ancestry, mental or physical handicap, or age. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment, or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

49.2 Contractor and all subcontractors shall, in all solicitations or advertisement for employees placed by them or on their behalf, state that qualified applicants will receive consideration for employment without regard to race, creed, color, national origin, sex, religion, ancestry, mental or physical handicap, or age.

ARTICLE 50 CLAIMS

50.1 The Contractor shall not assert any claim arising out of any act or omission by any officer, agent or employee of the Owner in the execution or performance of this Contract against such officer, agent or employee in his or her individual or official capacities.

50.2 The Contractor shall require each Separate Contract Design Professional or Contractor to agree in his Contract not to make any claim against the Owner, its officers, agents or employees, by reason of such Contract with the contractor.

50.3 Nothing in this Contract shall be construed to give any person other than the Owner and the Contractor any legal or equitable right, remedy or claim under this Contract; and it shall be held to be for the sole and exclusive benefit of the Owner and the Contractor.

ARTICLE 51 NOTICES

51.1 Except as otherwise provided herein, any notice, approval, acceptance, request, bill, demand or statement hereunder from either party to the other shall be in writing and shall be deemed to have been given when either delivered personally or deposited in a U.S. mailbox in a postage prepaid envelope, addressed to the other party via certified mail. Notices to the Owner shall be addressed to the Project Manager by name. Either party may at any time change such address by delivering or mailing, as aforesaid, to the other party a notice stating the change and the changed address.

ARTICLE 52 LEGAL INSERTIONS, ERRORS, INCONSISTENCIES, OR DISCREPANCIES IN CONTRACT

52.1 It is the intent and understanding of the parties to this Contract that each and every provision of law required to be inserted in this Contract shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is deemed to be inserted herein, and if through mistakes or otherwise, any such provision is not inserted in correct form, then this Contract shall upon application of either party, be amended by such insertion so as to comply strictly with the law and without prejudice to the right of either party.

52.2 If this Contract contains any errors, inconsistencies, ambiguities, or discrepancies, including typographical errors, the Contractor shall request a clarification of same by writing to the Project Manager whose decision shall be binding upon the parties.

ARTICLE 53 CAPTIONS OR HEAD NOTES

53.1 The captions or head notes on articles or sections of this Agreement, and marginal notes are intended for convenience and reference purposes only and in no way define, limit or describe the scope or intent hereof, or of this Agreement not in any way affect this Agreement.

ARTICLE 54 EFFECTIVE AND BINDING

54.1 This Contract shall not become effective or binding upon the Owner unless it has been authorized and executed in accordance with the ordinances of the City of Greeley.

ARTICLE 55 CONTRACTOR

55.1 All personnel assigned to the Project by the Contractor shall be required to cooperate fully with personnel of the Owner and if in the sole discretion of the Owner the Contractor's personnel fails so to cooperate, the Contractor shall relieve them of their duties on the Project when required by the Owner.

55.2 Within seven (7) consecutive calendar days after date of written notice to commence work, the Contractor shall designate in writing one person who, on his behalf, shall be responsible for coordinating all of the services to be rendered by the Contractor hereunder. Such designee shall be subject to the approval of the Owner. Any change to the approved designee shall be proposed in writing seven (7) days in advance and subject to Owner approval.

55.3 The Contractor shall engage, at his sole expense, all engineers, architects, cost estimators, lawyers, experts and Contractors as may be required for the proper performance of the Contract. The Contractor shall be responsible for the performance of the work of all architects, engineers, cost estimators, lawyers, experts and Contractors so engaged by him, including maintenance of schedules, correlation of their work and resolution of all difference between them. It is understood that all architects, engineers, cost estimators, lawyers, experts and Contractors are employees of the Contractor and not of the Owner, and the Contractor alone is responsible for their work.

55.4 All drawings, tracings, specifications, digital media/electronic files and other material prepared and furnished under and for this Contract shall become the property of the Owner upon substantial completion and/or their acceptance by the Owner and/or upon termination of the services

of the Contractor. Such documents shall be promptly delivered to the Owner upon demand and thereafter may be used by the Owner in whole or in part or in modified form, for those purposes it may deem advisable without further employment of, or payment of additional compensation to, the Contractor.

55.5 The Contractor shall not, without the prior written approval of the Owner, specify for the project, or necessarily imply the required use of any article, product, material, fixture or form of construction, the use of which is covered by a patent, or which is otherwise exclusively controlled by a particular firm or group of firms.

55.6 Should any claim be made or any action brought against the Owner relating to the design and satisfactory operation of the Project herein, the Contractor shall diligently render to the Owner without additional compensation any and all assistance which may be requested by the Owner.

55.7 The Owner's Project Manager's decision shall be final and binding upon the Contractor as to all matters arising in connection with or relating to this Contract. The Project Manager shall determine the amount, quality, acceptability and fitness of the work being performed hereunder and shall determine all matters relative to the fulfillment of this Contract on the part of the Contractor and such determination shall be final and binding on the Contractor. Acceptance by the Owner of any document hereunder and all supporting documents shall not relieve the Contractor of sole responsibility for work performed under this contract, including, but not limited to, the final design of the Project, including the plans, specifications and all supporting documents, except as to any feature thereof which the Owner had specifically directed in writing to be included over the written objection of the Contractor. In case any question shall arise, the decision of the Owner's Project Manager, who is hereby accepted by the Contractor as the arbiter, shall be a condition precedent to the right of the Contractor to receive any money under this Contract.

ARTICLE 56 APPEALS

56.1 Except as otherwise provided in this Contract, any dispute concerning a question of fact arising under this Contract which is not disposed of by Agreement shall be decided by the Project Manager, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Project Manager shall be final and conclusive unless, within fifteen (15) days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Project Manager a written notice of appeal.

56.2 In the event a decision of the Project Manager is the subject of an appeal, such dispute may be settled by appropriate legal proceeding, or, if the parties mutually agree, through arbitration or administrative process. Pending any binding arbitative or administrative decision, appeal, or judgment referred to in this section or the settlement of any dispute arising under this Contract, the Contractor shall proceed diligently with the performance of this Contract.

56.3 Venue and jurisdiction of any suit, right, or cause of action arising under or in connection with this Contract shall lie exclusively in Weld County, Colorado.

**ARTICLE 57
PROHIBITED INTEREST**

57.1 No member, officer or employee of the City of Greeley shall have any financial or pecuniary interest, direct or indirect, in this Contract or the proceeds thereof.

**ARTICLE 58
FINDINGS CONFIDENTIAL**

58.1 Any reports, information, data, etc., available to or prepared or assembled by Contractor under this Contract shall not be made available to any individual or organization by Contractor without consent in writing from the Owner subject to applicable law.

**ARTICLE 59
GENERAL PROVISIONS**

59.1 Services and work performed by Contractor under this Contract shall conform to reasonable and normal professional standards known and accepted within the community.

59.2 No reports, graphics or other material produced directly or indirectly for the Owner under this Contract shall be the subject of an application for copyright or trademark by or on behalf of Contractor.

59.3 The laws of the State of Colorado and applicable Federal, state and local laws, regulations and guidelines shall govern hereunder.

59.4 The headings of the articles, clauses, and paragraphs of this Contract are inserted for reference purposes only and are not restrictive as to content.

59.5 This Contract and any subsequent amendment shall be deemed an original having identical legal effect, and all of which together constitute one and the same instrument.

59.6 Nothing contained herein shall be deemed to give any third party any claim or right of action against the Owner which does not otherwise exist without regard to this Contract.

59.7 Where a number of days is specified in this Contract it shall mean calendar days unless otherwise specified.

59.8 This Contract shall not be assigned, in whole or in part, without the written consent of the Project Manager and Contractor.

59.9 The Owner certifies the following;
A. An amount of money equal to or greater than the Contract amount has

been appropriated and budgeted for the Project which this Contract concerns.

B. No Change Order which requires additional compensable work to be performed by the Contractor will be issued by the Owner unless an amount of money has been appropriated and budgeted sufficient to compensate the Contractor for such additional compensable work unless such work is covered under the remedy-granting provisions of this Contract.

C. As used in this paragraph, "remedy granting provision" shall mean any clause of this Contract which permits additional compensation in the event of a specific contingency or event occurs. This term shall include, but not be limited to, change clauses, differing site conditions clauses, variation in quantities clauses, and termination for convenience clauses.

ARTICLE 60 CONTRACTOR ACCEPTANCE

60.1 The acceptance by the Contractor, his successors or assigns of any payment made on the final acceptance of the Project under this Contract or of any final payment due on termination of this Contract, shall constitute a full and complete release of the Owner from any and all claims, demands and causes of action whatsoever which the Contractor, his successors or assigns have or may have against the Owner under the provisions of this Contract.

60.2 No action shall be maintained by the Contractor, its successors or assigns, against the Owner on any claims based upon or arising out of this Contract or out of anything done in connection with this Contract unless such action shall be commenced within 180 days after the date of filing of the voucher for final payment hereunder in the office of the Finance Director, or within 180 days of the termination of this Contract.

ARTICLE 61 SUCCESSORS AND ASSIGNS

61.1 The Contractor binds itself, its partners, successors, assigns and legal representatives to the other party to this Contract and to the partners, successors, assigns and legal representatives of such other party with respect of all covenants of this Agreement. The Contractor shall not transfer, assign, or subcontract any interest in this Agreement.

ARTICLE 62 SEVERABILITY CLAUSE

62.1 If any provision of this Agreement is subsequently declared by legislative or judicial authority to be unlawful, unenforceable, or not in accordance with applicable laws, statutes, and regulations of the United States of America and the State of Colorado, all other provisions of this Agreement shall remain in full force and effect.

ARTICLE 63 AGREEMENT

63.1 This Agreement represents the entire and integrated Agreement between the Owner and the Contractor and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both Owner and Contractor.

**ARTICLE 64
COLORADO LABOR**

64.1 In accordance with C.R.S. §8-17-101, all parties contracting with the City of Greeley on public works projects shall employ Colorado labor to perform the work to the extent of not less than eighty percent (80%) of each type or class of labor in the several classifications of skilled and common labor employed on this project.

**ARTICLE 65
ELECTRONIC SIGNATURE**

65.1 The Contract Documents may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same document. The Contract Documents, including all component parts set forth above, may be executed and delivered by electronic signature by any of the parties and all parties consent to the use of electronic signatures.

**ARTICLE 66
FORCE MAJEURE**

66.1 To the extent that either party is not able to perform an obligation under this Agreement due to fire; flood; acts of God; severe weather conditions; strikes or labor disputes; war or other violence; acts of terrorism; plague, epidemic, pandemic, outbreaks of infectious disease or any other public health crisis, including quarantine or other employee restrictions; act of authority whether lawful or unlawful, compliance with any law or governmental order, rule, regulation or direction, curfew restriction, or other cause beyond that Party's reasonable control, that Party may be excused from such performance so long as such Party provides the other Party with prompt written notice describing the condition and takes all reasonable steps to avoid or remove such causes of nonperformance and immediately continues performance whenever and to the extent such causes are removed.



SECTION 00520
SUBCONTRACTORS/MATERIALS SUPPLIERS AND RELATED DATA

Firm Name: _____ City Contractors License # _____
Primary Contractor _____
PROJECT: _____ Address: _____

For each Subcontractor and/or Materials Suppliers to be utilized, please provide the following information (use additional sheets as necessary):

Phone Number: _____ Fax Number: _____
Proposed work and percentage of total work to be assigned _____
Percentage: _____ %

Firm Name: _____ City Contractors License # _____
Address _____
Phone Number: _____ Fax Number: _____
Proposed work and percentage of total work to be assigned _____
Percentage _____ %

Firm Name _____ City Contractors License # _____
Address _____
Phone Number: _____ Fax Number: _____
Proposed work and percentage of total work to be assigned _____
Percentage _____ %

Firm Name _____ City Contractors License # _____
Address _____
Phone Number: _____ Fax Number: _____
Proposed work and percentage of total work to be assigned _____
Percentage _____ %

Firm Name _____ City Contractors License # _____
Address _____
Phone Number: _____ Fax Number: _____
Proposed work and percentage of total work to be assigned _____
Percentage _____ %

If the Primary Contractor adds any Subcontractors or Materials Suppliers during the duration of the project, the Primary Contractor will supply the City with an updated form before the Subcontractor or Materials Supplier will be allowed to work on the project.

SECTION 02315

EXCAVATION AND FILL

PART 1– GENERAL

1.1 SCOPE

- A. This section covers excavation and trenching, including but not limited to dewatering, preparation of subgrades, pipe bedding, backfilling, compacting, groundwater barriers, materials testing, and finish grading for underground pipelines and appurtenances.

1.2 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO)
 - 1. T26, Standard method of Test for Quality of Water to be Used in Concrete, latest revision.
 - 2. T99, Moisture–Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop (Method A), latest revision.
- B. American Concrete Institute (ACI)
 - 1. 305, *Hot Weather Concreting*, latest revision.
- C. ASTM International (ASTM)
 - 1. C33, *Standard Specification for Concrete Aggregates*, latest revision.
 - 2. C94, *Standard Specification for Ready-Mixed Concrete*, latest revision.
 - 3. C150, *Standard Specification for Portland Cement*, latest revision.
 - 4. D422, *Standard Test Method for Particle-Size Analysis of Soils*, latest revision.
 - 5. D448 (AASHTO M43), *Standard Classification for Sizes of Aggregate for Road and Bridge Construction*, latest revision.
 - 6. C618, *Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete*, latest revision.
 - 7. D698, *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³))*, latest revision.
 - 8. C1012/C1012M, *Standard Test Method for Length Change of Hydraulic-Cement Mortars Exposed to a Sulfate Solution*, latest revision.
 - 9. D1556, *Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method*, latest revision.

10. D1557, *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kn-m/m³))*, latest revision.
 11. D2487, *Standard Test Method for Classification of Soils for Engineering Purposes*, latest revision.
 12. D4318, *Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*, latest revision.
 13. D4254, *Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density*, latest revision
 14. D4832, *Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders*, latest revision.
 15. D6023, *Standard Test Method for Unit Weight, Yield, Cement Content, and Air Content (Gravimetric) of Controlled Low Strength Material (CLSM)*, latest revision.
 16. D6024, *Standard Test Method for Ball Drop on Controlled Low Strength Material (CLSM) to Determine Suitability for Load Application*, latest revision.
 17. D6938, *Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)*, latest revision.
- D. Colorado Department of Transportation (CDOT)
1. (CDOT) Specifications for Road and Bridge Construction
- E. (National Electrical Manufacturers Association (NEMA))
1. Z535.1, *Safety Color Code*, latest revision.
- F. Occupational Safety and Health Administration (OSHA)
1. 29 CFR Part 1926, *Safety and Health Regulations for Construction*, latest revision.
- G. City of Greeley Design Criteria and Construction Specifications Streets Volume I (SDC)

1.3 SUBMITTALS

- A. Dewatering
1. Water Control Plan: Submit for review by the City prior to start of any field work. At a minimum, the Water Control Plan shall include the following:
 - a. Descriptions of proposed groundwater and surface water control facilities including, but not limited to, equipment; methods; standby equipment and power supply, discharge locations to be utilized, and dewatering pollution control BMPs.

- b. Drawings showing locations, dimensions, and relationships of elements of each system.
 - c. Design calculations demonstrating adequacy of proposed dewatering systems and components.
 - d. Surface water control and drainage installations and related pollution control BMPs.
 - e. Locations and types of monitoring systems.
 - f. Proposed methods and locations for disposing of the removed water.
 - g. Any treatment system in place to meet discharge quality criteria if applicable.
 - h. If the system is modified during installation or the operation, revise or amend and resubmit the Water Control Plan.
- 2. Statement of Qualifications for Dewatering Specialist: Provide a summary of project experience and references for designer of dewatering systems.
 - 3. Well Permits: Submit to City before start of field work.
 - 4. Discharge Permits: Submit to City before start of field work and keep onsite for the duration of the work.
- B. Fill and Backfill
- 1. Results of particle size testing of proposed offsite source material in accordance with ASTM D422.
 - 2. Results of Atterberg limit testing of proposed offsite source material in accordance with ASTM D4318 (fine-grained material only).
 - 3. Results of Standard proctor testing (ASTM D698) or Modified proctor testing (ASTM D1557) of proposed offsite source material as appropriate based on compaction requirements stated herein.
 - 4. Certified test results from independent testing agency.
- C. Trench Backfill
- 1. Shop Drawings: Manufacturer's descriptive literature for marking tapes.
 - 2. Samples: Submit samples of materials proposed to be used in the Work to demonstrate material conformance with these Specifications.
 - a. Samples to be provided include:
 - i. Trench stabilization material.

- ii. Bedding and pipe zone material.
 - iii. Granular drain.
 - iv. Granular backfill.
 - v. Earth backfill.
 - vi. CLSM.
 - vii. Geotextile.
3. CLSM: Certified mix designs, certified laboratory performance of mix designs, and strength test results provided by a certified laboratory.
- a. Include material types, weight per cubic yard, and 2 and 28-day unconfirmed compressive strengths for each component of CLSM mix.
 - i. Form a minimum of six test cylinders with proposed materials to confirm design strength and mix design in accordance with ASTM D4832. Break four of the cylinders at 7 days in conformance with applicable concrete cylinder specifications and provide test results to City for review. Break the remaining two cylinders at the discretion of City. Complete mix design and cylinder breaks at least 21 days prior to use of the material in the Work. Final mix approval and use of the material will not occur prior to confirmation for strength by the cylinder breaks.
 - ii. Determine the materials and proportions used to meet the requirements of these Specifications. Continuously monitor soil composition. Perform sieve analysis and adjust CLSM mix if general composition changes or as directed by City. Modify CLSM mix as necessary to meet the strength, flowability, pumpability, and set time requirements for each individual pour.
 - iii. Do not place CLSM until City has approved the mix design. City's approval of the mix design indicates conditional acceptance. Final acceptance will be based on tests conducted on field samples and conformance with these Specifications.
4. Catalog and manufacturer's data sheets for compaction equipment.
5. Certified Gradation Analysis: Submit not less than 30 days prior to delivery for imported materials or anticipated use for excavated materials, except for trench stabilization material that will be submitted prior to material delivery to Site.
6. Credentials of certified labs.
7. Description and location of proposed sources of imported material. Include documentation that imported materials are free of hazardous substances.

8. Test for conformance and submit certification and test records of materials showing that they meet the applicable requirements prior to commencing permanent placement of the materials for the Work. Tests, certification, and test records of materials will be performed within 6 months of submittal.
9. Submit a description of material testing work plan and program including as minimum onsite and offsite soils/materials laboratory testing facility location, facility details, testing certifications, experience of testing personnel, frequency of testing regarding material quality and material placement.

1.4 CONSTRUCTION STAKING

- A. Construction staking shall be performed under the direct supervision of a Professional Land Surveyor licensed in the State of Colorado.
- B. Adequate staking shall be provided to establish acceptable horizontal and vertical control.
- C. Offsets shall be staked so that the City Inspector may check vertical and horizontal alignment.
- D. All survey notes and construction staking notes shall be entered into bound, hard cover field books, kept at the construction site for the duration of the project, and shall be made available to the City upon request.
- E. All survey data, which is developed by the Contractor or the Engineer in performing surveys required by the work, shall be available to the City for examination and reproduction throughout the construction and warranty periods.
- F. The City Inspector shall be informed of all field changes to the City accepted Construction Drawings. Approval for the changes shall be required from the City prior to the changes being made in the field.

1.5 FIELD CONDITIONS

- A. Drainage and groundwater.
 1. Keep excavations and trenches free of water during construction. Divert surface runoff and utilize sumps, gravel blankets, well points, drain lines or other means of dewatering, as necessary.
 - a. Dewater the excavation or trench until the structure, pipe, or other, to be installed therein, is completed to the extent that no damage from hydrostatic pressure, floatation, or other cause will result.
 - b. Water shall be removed from the trench to the extent necessary in order to provide a firm subgrade and dry conditions for pipeline installation.
 2. The pipeline being constructed shall not be used for dewatering.
 3. The piping used to dewater the trench shall not be left in the trench when backfilled.

4. For trenched installations, groundwater barriers shall be installed if groundwater is encountered or expected. Groundwater barriers shall be installed as shown on the drawings and, as necessary, every 400'. Refer to the City of Greeley Standard Drawing for additional installation requirements.
 5. Prior to beginning dewatering operations, the Contractor shall obtain all necessary permits and appropriate authorization to start dewatering. If groundwater will be discharged or drained into an irrigation ditch, pond, stream or waterway, a CDPHE Dewatering Permit will be required.
 - a. The Contractor is required to complete and process the Discharge Monitoring Report (DMR) that is typically a part of the Dewatering Permit.
 - b. Upon completion of the work, the Contractor shall be responsible for completing a CDPHE Discharge Termination Notice.
- B. Blasting is not permitted within the jurisdiction of the City unless otherwise authorized by the City. If authorized, permitting and requirements associated with blasting are the responsibility of the Contractor.
- C. Sequencing
1. Backfill shall be completed, at the end of each day, to the extent that no damage from hydrostatic pressure, flotation, or other causes will result.
 2. Where excavation is a hazard to automotive or pedestrian traffic, the amount of open trench and the time duration of that opening shall be minimized. The City shall direct the amount of open trench that is acceptable for the condition encountered.
 3. During construction, maintain access to private residence and businesses.
- D. Underground Obstructions
1. It is the Contractor/City's responsibility to call for utility locates. Call UNCC at 1-800-922-1987 or dial 811 for locates.
 2. Depending on the required subsurface utility engineering (SUE) quality level, the Contractor shall be prepared to expose and verify the size, location, and elevation of underground utilities and other obstructions, sufficiently in advance of construction to permit changes to be made to the Construction Drawings in the event there is a conflict with the proposed and existing utilities. In the event there is a conflict, the Contractor shall notify the City, and affected utility company immediately.
 3. Protect and support utilities, appurtenances, structures, etc., by shoring, bracing or other means necessary.
- E. Weather

1. Do not install pipe or place pipe bedding on frozen soil in the trench bottom.
2. Do not place frozen materials, snow or ice in backfill, fill, or embankments.
3. Do not deposit, tamp, roll or otherwise mechanically compact backfill in water.

1.6 Quality Assurance

A. Preparation of Subgrade

1. Notify City when subgrade is ready for compaction or proof-rolling or whenever compaction or proof-rolling is resumed after a period of extended inactivity.

B. Excavation

1. Provide adequate survey control to avoid unauthorized overexcavation.

C. Fill and Backfill

1. Notify City when:
 - a. Structure or pipeline is ready for backfilling, and whenever backfilling operations are resumed after a period of inactivity.
 - b. Soft or loose subgrade materials are encountered wherever embankment or site fill is to be placed.
 - c. Fill material appears to be deviating from Specifications.

1.7 Soil and Bedrock Conditions

- A. A geotechnical investigation may have been performed for the project in order to obtain relative data concerning the character of material in and upon which the project is to be built. If an investigation has been performed, the information will be available to the Contractor for information purposes only, and is not to be considered a part of the Contract Documents. The Contractor shall satisfy himself as to the kind and type of soil and/or rock to be encountered and any water conditions that might affect the construction of the project.

PART 2– PRODUCTS AND EQUIPMENT

2.1 GENERAL

- A. All material shall be free from frozen matter, stumps, roots, brush, other organic matter, cinders, corrosive material, debris, broken asphalt and concrete, and any other objectionable material that is not suitable in the opinion of the City.
- B. If job excavated material is not sufficient or suitable, suitable material shall be imported. Reference *SDC* construction specifications for import fill requirements.

2.2 DEWATERING

- A. Refer to construction specification *Section 02240, Dewatering*, for dewatering products & requirements.

2.3 MARKING TAPE

- A. Non-detectable:
 - 1. Material: Solid colored non-detectable polyethylene.
 - 2. Thickness: Minimum 4 mils.
 - 3. Width: 3 inches.
 - 4. Identifying Lettering: Minimum 1-inch high, permanent black lettering imprinted continuously over entire length.
 - a. Potable water lines: “CAUTION: BURIED WATER LINE BELOW”
 - b. Non-potable water lines: “CAUTION – BURIED NON-POTABLE WATER LINE BELOW” or “CAUTION – BURIED RECLAIMED WATER LINE BELOW”
 - c. Sanitary and Storm Sewers: “CAUTION: BURIED SEWER LINE BELOW”
 - 5. Manufacturers and Products:
 - a. Emedco
 - b. Presco
 - c. Approved equivalent.
- B. Color: In accordance with APWA Uniform Color Code for Temporary Marking of Underground Facilities.

Color*	Facility
Red	Electric power lines, cables, conduit, and lightning cables
Orange	Communication alarm or signal lines, cables, or conduit
Yellow	Gas, oil, steam, petroleum, or gaseous materials
Green	Sewer and drain lines
Blue	Potable water

Purple Reclaimed water, irrigation, and slurry lines

* As specified in NEMA Z535.1, Safety Color Code.

2.4 SUBGRADE MATERIAL BELOW STRUCTURES

- A. At minimum, the top six-inches (6") of in-situ soil below structures shall be removed and replaced with an approved structural fill material. If deemed necessary by the City, more than six-inches (6") of material from the trench bottom may require removal and replacement with a stabilization material.
- B. Subgrade material below structures shall be crusher-run angular rock per ASTM 4253 and ASTM 4254, compacted 65-70% or 95% standard proctor dry density, and conforming to CDOT #357 (ASTM D448, AASHTO M43) in table below or approved equivalent.

TABLE 2.4-B.1: Subgrade Material Below Structures – CDOT #357

Size (inch)	Percent (%) Passing
2 ½"	100
2"	95-100
1"	35-70
½"	10-30
#4	0-5

- C. Structures consist of but not limited to vaults, sewer manholes, equipment pads, etc.

2.5 STABILIZATION MATERIAL

- A. In the case of poor soil conditions, subgrade stabilization may be required to adequately support structural foundations and utility pipelines. If deemed necessary by the City, more than six-inches (6") of material from the trench bottom may require removal and replacement with a stabilization material.
- B. Stabilization material shall be crushed concrete and natural aggregate with at least two fractured faces, conforming to CDOT Vehicle Tracking Pad (VTP) (ASTM D448, AASHTO M43)

TABLE 2.5-A.1: STABILIZATION MATERIAL – CDOT VTP

Size (inch)	Percent (%) Passing
3"	100
2"	0-25
¾"	0-15

- C. Geotextile fabric shall be used in conjunction with stabilization material unless approved otherwise by the City. Geotextile fabric shall conform to Colorado Department of Transportation, Division of Highways, State of Colorado “*Standard Specifications for Road and Bridge Construction*”, Section 712.08, Class A Table 712-2, latest edition.
 - 1. Acceptable geotextile fabric manufacturers are:
 - a. TenCate – Mirafi 500X
 - b. Webtec, Inc. Geosynthetics – TerraTex GS
 - c. Or approved equivalent.

2.6 CONTROLLED LOW STRENGTH MATERIAL (CLSM)

- A. The CLSM facility shall be certified by the National Ready Mixed Concrete Association. Mixing times shall conform to the requirements of ASTM C94, Specification for Ready-Mixed Concrete. Hand mixing is not allowed. The production facility shall supply a load ticket with the actual batch weights of the component materials.
- B. Thoroughly mix all water added at the project site in accordance with the recommendations stated in ACI 305, Hot Weather Concreting. Measure all water added to the mix. The water cement ratio as stated in the CLSM mix design approved by the City is not to be exceeded. Do not add water after discharge of the CLSM from the mixer begins.
- C. Place CLSM within the 90 minutes after the addition of cement or fly ash to the mix. The City reserves the right to reduce the allowable time for placement to account for adverse weather conditions or other factors that may accelerate the stiffening of the mix.
- D. Select and proportion the ingredients to obtain an unconfined compressive strength at 2 days to be a minimum of 50 psi, an unconfined compressive strength at 28 days a maximum of 125 psi, and an air content between 7 and 13 percent. Determine compressive strength in accordance with ASTM D4832, Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders. Determine air content in accordance with ASTM D6023, Standard Test Method for Unit Weight, Yield, Cement Content, and Air Content (Gravimetric) of Controlled Low Strength Material (CLSM).
- E. Materials:
 - 1. Portland Cement: Cement Type I or Cement Type II as defined by ASTM C150, Specification for Portland Cement including Table 1, 2, and 4.
 - 2. Aggregate: Conform to all requirements for fine aggregate as defined by ASTM C33, Specification for Concrete. Keep the aggregate materials moist for 24 hours before use in the mixture.
 - 3. Fly Ash (if used): Conform to requirements of Class F fly ash as defined by ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pollolan for Use as a Mineral Admixture in Concrete, except as modified herein:

- a. Test in accordance with ASTM C1012/C1012M to verify that the sulfate resistance is acceptable.
- 4. Water: All water used in the CLSM mixture shall meet the requirements of AASHTO T26, Quality of Water to be used in Concrete. Obtain such water from a source approved by the City.

2.7 BEDDING ZONE MATERIALS

- A. The bedding zone shall extend six-inches (6”) below the invert of the pipe to six-inches (6”) above top of pipe.
- B. Bedding material for sanitary sewer pipe shall be 57/67 rock or City approved equal

TABLE 2.8-B.1: Bedding Material – 57/67 rock

Size (inch)	Percent (%) Passing
1 ½"	100
1"	95-100
¾"	90-100
½"	25-60
3/8"	20-55
#4	0-10
#8	0-5
#200	1 max

- C. Bedding material for potable and non-potable water pipe shall be either ASTM C33 Sand or Squeegee Fine Sand.

TABLE 2.8-C.1: Bedding Material – ASTM C33 Sand

Size (inch)	Percent (%) Passing
3/8"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	5-30
#100	0-10
#200	0-3

TABLE 2.8-C.2: Bedding Material – Squeegee

Size (inch)	Percent (%) Passing
3/8"	100

#4	85-100
#8	30-70
#16	5-40
#30	0-15
#50	0-10
#100	0-5
#200	<1

- D. Or approved equal.
- E. Groundwater Barrier shall meet the following soil classification:
 - 1. Soil Classifications
 - a. Minimum thirty-percent (30%) fines.
 - b. Minimum plasticity index of 10.
 - c. Material shall not be lumpy or hard but shall be finely divided, suitable, and free from stones.
 - 2. Or CLSM in conformance with *SDC* construction specifications.

2.8 INSULATION BOARD

- A. Insulation board shall be installed above the bedding zone when the depth of cover over the water line is less than five (5) feet.
- B. Insulation board shall be high density and rated for high compressibility of a minimum of 100 psi.
- C. Insulation board shall be a minimum two-inches (2") thick. Acceptable insulation board manufacturers are:
 - 1. Dow Chemical Company - Styrofoam™
 - 2. Owens-Corning
 - 3. Or approved equivalent.

2.9 TRENCH BACKFILL MATERIAL

- A. Trench backfill material shall be placed from a point six-inches (6") above the top of pipe exterior to six-inches (6") below the ground surface, or bottom of topsoil layer, or bottom of the pavement subgrade, whichever is applicable. Trench backfill shall conform to *SDC* construction specifications.

PART 3– EXECUTION

3.1 PREPARATION

- A. Topsoil shall be stripped from areas which are to be disturbed by construction and stockpiled.
- B. Topsoil shall be segregated from non-organic trench material and debris.

3.2 SUBGRADE PREPARATION

- A. General
 - 1. Keep subgrade free of water, debris, and foreign matter during compaction or proof-rolling.
 - 2. Bring subgrade to proper grade and cross-section and uniformly compact surface.
 - 3. Do not use sections of prepared ground surface as haul roads. Protect prepared subgrade from traffic.
 - 4. Maintain prepared ground surface in finished condition until next course is placed.
- B. Compaction
 - 1. Under Earthfill and Exposed Cut Surfaces: Compact upper 8 inches to minimum of 90 percent relative compaction as determined in accordance with ASTM D1557 or 93 percent relative compaction as determined in accordance with ASTM D698.
 - 2. Under Structures Including Slabs, Tanks and Other Miscellaneous Structures: Areas shall be overexcavated to such an extent so as to provide a minimum of 6 inches of granular fill on prepared subgrade. Scarify and compact the upper 8 inches of subgrade to minimum of 95 percent of standard proctor compaction as determined in accordance with ASTM D698.
- C. Moisture Conditioning
 - 1. Dry Subgrade: Add water, then mix to make moisture content uniform throughout.
 - 2. Wet Subgrade: Aerate material by blading, discing, harrowing, or other methods, to hasten drying process.
- D. Testing
 - 1. Proof-roll subgrade with a fully loaded tandem-axle dump truck or similar vehicle to detect soft or loose subgrade or unsuitable material. Proof-roll shall be conducted prior to scarifying/recompaction to identify soft or loose subgrade or unsuitable material. City shall be notified 2 days in advance of proof-rolling

activities and will be present to examine and approve subgrade before backfilling begins. City shall approve proof-roll prior to backfill.

2. Contractor shall provide an independent testing laboratory to conduct in-place density tests in accordance with ASTM D6938 at a minimum rate of one test per every 5,000 square feet of prepared subgrade.

E. Correction

1. Soft or Loose Subgrade:

- a. Adjust moisture content and recompact, or
- b. Over excavate as specified in Section 3.3 of this specification, and replace with suitable material from the excavation. If unsuitable soil is encountered at a depth of 3 feet below planned subgrade, excavation shall be halted and the City notified immediately.
- c. In the event the unacceptable material is encountered at the 3-foot overexcavation, a geogrid shall be provided and placed, and overlain with a geotextile. The overexcavation shall be filled to plan grade with stabilization material. Stabilization material shall be placed in lifts not more than 10 inches thick and shall be compacted to the satisfaction of the City.

2. Unsuitable Material: Over excavate as specified in Section 3.3 of this specification and replace with suitable material from the excavation.

3.3 EXCAVATION

A. General

1. Excavate to lines, grades, and dimensions shown in the drawings and as necessary to accomplish work. Excavate to within tolerance of plus or minus 0.1 foot, except where dimensions or grades are shown or specified as maximum or minimum. Allow for forms, working space, granular base, topsoil, and similar items, wherever applicable. Trim to neat lines where concrete is to be deposited against earth.
2. Do not over excavate without written authorization of City.
3. Remove or protect obstructions as shown in the drawings.

B. Unclassified Excavation

1. Excavation is unclassified. Complete all excavation regardless of the type, nature, or condition of the materials encountered.

C. Trench Width

1. Minimum Width of Trenches: As specified in Section 3.6 of this specification.

2. Maximum Trench Width: Unlimited, unless otherwise shown or specified, or unless excess width will cause damage to existing facilities, adjacent property, or completed Work.
- D. Pipe Bedding Grooves for Nonperforated Drain Lines
1. Semicircular, trapezoidal, or 90-degree-V.
 2. Excavated or plowed into trench bottom. Forming groove by compaction will not be acceptable.
- E. Embankment and Cut Slopes
1. Shape, trim, and finish cut slopes to conform with lines, grades, and cross-sections shown in the drawings, with proper allowance for topsoil or slope protection, where shown.
 2. Remove stones and rock that exceed 3-inch diameter and that are loose and may roll down slope. Remove exposed roots from cut slopes.
 3. Round tops of cut slopes in soil to not less than a 6-foot radius, provided such rounding does not extend offsite or outside easements and rights-of-way, or adversely impacts existing facilities, adjacent property, or completed work.
 4. Temporary earthen slopes or benching shall meet current OSHA requirements or be designed by a Professional Engineer in the State of Colorado.
- F. Stockpiling Excavated Material
1. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.
 2. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.
 3. Confine stockpiles to within easements, rights-of-way, and approved work areas. Do not obstruct roads or streets.
 4. Do not stockpile excavated material adjacent to trenches and other excavations, unless excavation side slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.
 5. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed Work, if weight of stockpiled material could induce excessive settlement.
- G. Disposal of Spoil
1. Dispose of excavated materials, which are unsuitable or exceed quantity needed for fill or backfill, offsite.

2. Dispose of debris resulting from removal of underground materials, organic matter, trash, refuse, junk, and other materials in accordance with local and federal governmental regulations.

3.4 DEWATERING

- A. Refer to construction specification *Section 02240, Dewatering*, for dewatering requirements.

3.5 FILL AND BACKFILL

A. General

1. Keep placement surfaces free of water, debris, and foreign material during placement and compaction of fill and backfill materials.
2. Place and spread fill and backfill materials in horizontal lifts of uniform thickness, in a manner that avoids segregation, and compact each lift to the specified densities prior to placing succeeding lifts. Slope lifts only where necessary to conform to final grades or as necessary to keep placement surfaces drained of water.
3. During filling and backfilling, keep level of fill and backfill around each structure and pipeline even.
4. Do not place fill or backfill if fill or backfill material is frozen, or if surface upon which fill or backfill is to be placed is frozen.
5. If pipe, conduit, duct bank, or cable is to be laid within fill or backfill:
 - a. Fill or backfill to an elevation 2 feet above top of item to be laid.
 - b. Excavate trench for installation of item.
 - c. Install bedding, if applicable, as specified in Section 3.6 of this specification.
 - d. Install item.
 - e. Backfill envelope zone and remaining trench, as specified in Section 3.6 of this specification, before resuming filling or backfilling specified in this section.
6. Tolerances:
 - a. Final Lines and Grades: Within a tolerance of 0.1 foot unless dimensions or grades are shown or specified otherwise.
 - b. Grade to establish and maintain slopes and drainage as shown. Reverse slopes are not permitted.

7. Settlement: Correct and repair any subsequent damage to structures, pavements, curbs, slabs, piping, and other facilities, caused by settlement of fill or backfill material.
- B. Backfill Under and Around Structures
1. Under Structures:
 - a. Overexcavate and prepare subgrade as specified in Section 3.2 of this specification, or fill on prepared subgrade with earthfill to within 6 inches of bottom of structure.
 - b. Earthfill shall be placed in 8-inch maximum lifts and compacted at moisture content of optimum plus or minus 2 percent. Each lift of moisture conditioned earthfill shall be compacted to a minimum 95 percent of standard proctor compaction as determined in accordance with ASTM D1698
 - c. Place a minimum 6 inches of stabilization material below structures and slabs. Stabilization material shall be compacted and tested in accordance with ASTM D4254 to a minimum relative density of 65 percent.
 - d. Backfill with cohesive material to lines and grades shown, with proper allowance for topsoil thickness where shown. Place in lifts of 8-inch maximum thickness and compact each lift to minimum 90 percent relative compaction as determined in accordance with ASTM D1557 or 93 percent relative compaction as determined in accordance with ASTM D698.
 2. Other Areas: Backfill with earthfill to lines and grades shown, with proper allowance for topsoil thickness where shown. Place in lifts of 8-inch maximum thickness and compact each lift to minimum 90 percent relative compaction as determined in accordance with ASTM D1557 or 93 percent relative compaction as determined in accordance with ASTM D698.
- C. Fill
1. Outside Influence Areas beneath Structures, Tanks, Pavements, Curbs, Slabs, Piping, and Other Facilities: Unless otherwise shown, place earthfill as follows:
 - a. Allow for 6-inch thickness of topsoil where required.
 - b. Maximum 8-inch thick lifts.
 - c. Place and compact fill across full width of embankment.
 - d. Compact to minimum 90 percent relative compaction as determined in accordance with ASTM D1557 or 93 percent relative compaction as determined in accordance with ASTM D698.

- e. Dress completed embankment with allowance for topsoil, crest surfacing, and slope protection, where applicable.
- D. Site Testing
- 1. Gradation:
 - a. One sample from each 1,500 tons of finished product or more often as determined by City, if variation in gradation is occurring, or if material appears to depart from Specifications.
 - b. If test results indicate material does not meet Specification requirements, terminate material placement until corrective measures are taken.
 - c. Remove material placed in Work that does not meet Specification requirements.
 - 2. Atterberg Limits:
 - a. One sample from each 1,500 tons of finished product or more often as determined by City, if variation in gradation is occurring, or if material appears to depart from Specifications.
 - b. If test results indicate material does not meet Specification requirements, terminate material placement until corrective measures are taken.
 - c. Remove material placed in Work that does not meet Specification requirements.
 - 3. Contractor shall provide an independent testing laboratory to conduct in-place Density Tests: In accordance with ASTM D1556 or D6938. During placement of materials, test every 500 cubic yards, but no less than two tests per day for each day material is being placed, and no less than two tests per lift.
- E. Replacing Over Excavated Material
- 1. Replace excavation carried below grade lines shown or established by City as follows:
 - a. Beneath Structures: Granular fill.
 - b. Beneath Fill or Backfill: Same material as specified for overlying fill or backfill.
 - c. Trenches:
 - i. Unauthorized Over excavation: Either trench stabilization material or granular pipe base material, as specified in Section 3.6 of this specification.
 - ii. Authorized Over excavation: Trench stabilization material, as specified in Section 3.6 of this specification.

- d. Permanent Cut Slopes (Where Overlying Area is Not to Receive Fill or Backfill):
 - i. Flat to Moderate Steep Slopes (3:1, Horizontal Run: Vertical Rise or Flatter): Earthfill.
 - ii. Steep Slopes (Steeper than 3:1):
 - ii-a. Correct over excavation by transitioning between overcut areas and the designed slope adjoining areas, provided such cutting does not extend offsite or outside easements and right-of-ways, or adversely impacts existing facilities, adjacent property, or completed work.
 - ii-b. Backfilling over excavated areas is prohibited, unless in City's opinion, backfill will remain stable, and over excavated material is replaced as compacted earthfill.

F. Placing Fill Over Geosynthetics

- 1. General:
 - a. Place fill with sufficient care so as not to damage the geosynthetic.
 - b. Place fill only by back dumping and spreading only.
 - c. Dump fill only on previously placed fill.
 - d. While operating equipment, avoid sharp turns, sudden starts or stops that could damage geosynthetics.
- 2. Hauling: Operate hauling equipment on minimum of 3 feet of covering.
- 3. Spreading:
 - a. Spreading equipment shall be track mounted D 6 or lighter.
 - b. Operate spreading equipment on minimum of 12 inches of fill over geosynthetics.
 - c. Spread fill in same direction as unseamed overlaps to avoid separation of seams and joints.
 - d. Never push fill downslope. Spread fill over sideslopes by pushing up from slope bottom.
 - e. Correct wrinkles in geomembranes as required by manufacturer.
 - f. Maintain proper overlap of unseamed geosynthetics as required by manufacturer.
 - g. Avoid overstressing geosynthetics and seams.

4. Compaction: Compact fill only after uniformly spread to full thickness shown.
5. Geosynthetic Damage:
 - a. Mark punctures, tears, or other damage to geosynthetics, so repairs may be made.
 - b. Clear overlying fill as necessary to repair damage.
 - c. Repairs to geosynthetics shall be made by respective installers as specified in respective specification section for each geosynthetic.

3.6 TRENCHING

- A. Do not drop backfill directly upon any structure or pipe. Do not place backfill around or upon any structure until the concrete or CLSM has attained sufficient strength to withstand the loads imposed.
- B. Place backfill after water is removed from the excavation as specified in Section 3.4 of this specification, and the excavation bottom or surface upon which backfill is to be placed is firm and has been dried to a moisture content suitable for scarifying and recompaction. Remove water in a manner that minimizes soil erosion from trench sides and bottom. Provide continuous water control until trench backfill is complete.
- C. Excavate trenches by open cut methods, except where a boring is indicated on the Construction Drawings, required by jurisdictional agencies, or desired by the Contractor and approved by the City.
- D. Do not use mechanical equipment in locations where its operation would cause damage to trees, buildings, culverts, utilities, structures or other property above or below ground. In all such locations, hand-excavating methods shall be used.
- E. Use mechanical equipment designed and operated so the rough excavated trench bottom elevation can be controlled with uniform trench width and vertical sidewalls from an elevation one (1) foot above the top of installed pipe to the bottom of the trench. The trench alignment shall be sufficiently accurate to permit pipe to be aligned properly between the pipe and sidewalls of the trench. Do not undercut the trench sidewall to obtain clearance.
- F. Contractor shall follow the most current regulations concerning excavations set forth by OSHA: 29 CFR Part 1926.
- G. Excavation in Rock
 1. When rock is present, over-excavate a minimum of six-inches (6") below the bottom of the required trench bottom.
 2. Backfill to required trench bottom with compacted bedding material.
- H. Preparation of Trench Bottom

1. Grade trench bottom uniformly to provide clearance for each section of pipe and bedding material.
 2. Remove loose materials, water and foreign objects.
 3. Provide firm subgrade suitable for placement of bedding material.
 4. Wherever unstable material is encountered in the bottom of the trench, over-excavate such material to a depth suitable for constructing a stable subgrade or as determined by the City. Backfill over-excavation with stabilization material and compact. A geotextile fabric layer shall be placed between the stabilization material and the bedding material.
- I. Stockpiling Excavated Materials
1. Pile suitable material for backfilling in an orderly manner a sufficient distance from trench banks to avoid overloading and to prevent slide or cave-ins.
 2. Do not stockpile excavated material against existing structures or appurtenances.
 3. The Contractor shall follow the most current OSHA regulations concerning excavations.
- J. Trench Widths
1. Trench width shall be maintained to within three-inches (3") of that specified on the City of Greeley Standard Drawings unless otherwise specified by the City.

3.7 PIPE BEDDING

- A. Placement and Compaction
1. Distribute, grade, and compact bedding material to provide uniform and continuous support beneath the pipe at all points between bells and pipe joints.
 2. Bell holes shall be dug deep enough to provide a minimum two-inches (2") of clearance between the bell and bedding material. The pipe shall not be supported by the pipe bell.
 3. Deposit bedding material and compact uniformly and simultaneously on each side of the pipe to prevent lateral displacement.
 4. Compact granular bedding material by vibrating, slicing with a shovel, or bent tee-bar. Care shall be taken to not damage the pipe during compaction. Hand-held equipment shall be used to compact material immediately adjacent to the pipe.
 5. All utility trenches within the street right-of-way (including service lines) must be mechanically compacted to not less than 95% of maximum density within \pm two percent (2%) of optimum moisture content as determined by AASHTO T99. Alternatively, utility trenches can also be backfilled with CLSM to the bottom of the new pavement.

6. Trench backfill in utility easements within 20 feet of right-of-way shall be mechanically compacted to 95% maximum density or backfilled with CLSM to within one foot of finish grade.
7. Trench backfill in utility easements beyond 20 feet from right-of-way shall be compacted to 90% maximum density.
8. Place pipe bedding in accordance with the City of Greeley Standard Drawings.

3.8 MARKING TAPE INSTALLATION

- A. Marking tape to be installed in accordance with City of Greeley Standard Drawings. Marking tape shall meet APWA Uniform Color Code specifications. Continuously install marking tape along centerline of all buried piping, at eighteen-inches (18”) above pipe. Coordinate with piping installation drawings.

3.9 TRACER WIRE AND TEST STATIONS

- A. Refer to the proper construction specification and the standard drawings (“UL” section) for the utility specific tracer wire and test station requirements.
 1. For water distribution tracer wire, refer to construction specification *Section 02510, Water Utility Distribution Piping*.
 2. For water distribution test stations at fire hydrants, refer to construction specification *Section 02516, Water Utility Distribution Fire Hydrants*.
 3. For sanitary sewer service tracer wire and test stations, refer to construction specification *Section 02534, Sanitary Sewer Service Lines*.
 4. For non-potable irrigation tracer wire and test stations, refer to construction specification *Section 15140, Non-Potable Irrigation System*.

3.10 GROUND WATER BARRIERS

- A. Ground water barriers shall be constructed in such a manner to impede the passage of water through the bedding material and shall be installed when high groundwater conditions exist or as directed by the City.
- B. Ground water barriers shall be keyed at least one (1) foot into the trench wall and bottom, and spaced ten (10) feet upstream of each manhole for gravity sanitary sewers or every 400 feet on water lines and sanitary sewer force mains.
- C. At a minimum, ground water barriers shall extend one (1) foot above the bedding material.
- D. Refer to City of Greeley Standard Drawings for additional installation requirements.

3.11 INSULATION BOARD

- A. Insulation board, if preapproved by the City, shall be installed above the bedding zone wherever the depth of cover over the water main is less than four (4) feet.

1. Insulation board installation shall consist of two (2) overlapping boards, one-inch (1") minimum thickness per board, with off-set joints.
 2. Insulation board shall be placed across the full trench width.
- B. Refer to City of Greeley Standard Drawings for additional installation requirements.

3.12 BACKFILLING AND COMPACTION

- A. Backfill trench promptly after completion of pipe bedding, but only after the City has inspected the work.
- B. Backfilling and compaction operations and requirements shall be in accordance with the *SDC*.
- C. Use backfilling and compaction methods and equipment appropriate for the backfill material. Do not use equipment or methods that will transmit damaging shocks to the pipe.
- D. Do not perform compaction by jetting or water settling.
- E. Rock and bedrock encountered in the excavation shall not be used in backfill.
- F. For areas not receiving surface improvements after construction, return the final grading to the depth of stripping over all areas disturbed by construction operations and replace topsoil.
- G. All surface cuts shall be, as a minimum, restored to a condition equal to, or better than, that prior to construction. All gravel or paved streets shall be restored in accordance with the regulation and requirements of the agency having control or jurisdiction over the street, roadway or right-of-way.
- H. Controlled Low Strength Material:
1. Maintain stability of pipe and conduit throughout CLSM placement and curing. Anchor pipe as needed to prevent movement of the pipe caused by flotation or lateral displacement. If any movement occurs, remove the CLSM material and place the pipe back on line and grade. Remove sloughed material or other debris from top of previously placed CLSM.
 2. Place in lifts as necessary to prevent uplift (flotation) of new and existing facilities.
 3. Fill entire trench section to pavement finish grade for a temporary driving surface in traveled areas, and screed off excess and finish with a float.
 4. In other areas fill the trench section to top of trench backfill zone.
 5. Allow CLSM to set before placing backfill. Prior to placing backfill over CLSM, achieve an indentation diameter less than or equal to 3 inches as determined by ASTM D6024.

3.13 MATERIALS AND QUALITY CONTROL TESTING

- A. The Contractor is responsible for quality control testing and the testing shall be performed by an independent testing agency employed by the Contractor.
- B. For backfill compaction and moisture requirements and the required materials testing, frequency of tests, and standard testing methods, reference the *SDC*.
- C. The following requirements shall also apply:
 - 1. Groundwater Barriers
 - a. Compaction – 95% (ASTM D698)
 - b. Moisture – $\pm 2\%$
 - 2. Bedding Material
 - a. Compaction – 65% of relative density (ASTM D4254)
 - 3. CLSM:
 - a. Provide adequate facilities for safe storage and proper curing of CLSM test cylinders onsite for first 24 hours, and for additional time as may be required before transporting to test lab.
 - b. Provide CLSM testing of air content and for making cylinders from the point of discharge into forms. When CLSM is pumped, Samples used shall be taken from discharge end of pump hose.
 - c. Specimens shall be made, cured, and tested in accordance with ASTM D4832, Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders.
 - d. One set of test cylinders shall be tested per each 100 cubic yard of CLSM placed, but no less than one set per day. Frequency of testing may be changed at discretion of City.
 - e. Reject CLSM represented by cylinders failing to meet strength and air content specified.
- D. Services
 - 1. Water services shall have a minimum of one (1) moisture/density test per service.
 - 2. Sanitary sewer services shall have a minimum of two (2) moisture/density tests per service or at the City Inspector's discretion.
 - 3. Moisture/density tests in the vicinity of vaults, valve boxes and manholes shall be performed at a minimum of one (1) foot away from the edge of vault/manhole sections or valve boxes.

- a. Tests shall be performed in random directions from the vault, manhole, or valve box, on separate lifts.
 - b. A minimum of one (1) test shall be performed, on opposite sides of the vault, manhole or valve box, for every two (2) feet of backfill material.
4. The Contractor shall keep copies of all quality control test results in a notebook at the job site for the duration of the project. Test results shall be made available to the City at all times.

3.14 COMPACTION TEST FAILURE

- A. If the required compaction and moisture is not obtained, it shall be the responsibility of the Contractor to recompact or rework the material to the required state of compaction and moisture.
- B. In cases where there is a failure to achieve the required compaction or moisture, the City may require that the backfill be removed and recompact or replaced entirely with suitable materials.
- C. Water line and sanitary sewer line/manhole testing may be required after recompaction if the testing had been performed prior to recompaction.
 1. Water line testing shall be performed between valves on both sides of the recompact area.
 2. Sanitary sewer line testing shall be performed between manholes on both sides of the recompact area.
 3. Sanitary sewer manhole testing shall be performed if recompact occurs in the vicinity of the manhole.

SECTION 02576

STREET PAVEMENT PATCHING

City of Greeley Construction Specification for Asphalt Patching hereby references the Metropolitan Government Pavement Engineers' Council (MGPEC) Pavement Design Standards and Construction Specification Manual, Volume 1, latest revision, **Item 17 - Asphalt Patch**, with the following exceptions:

- Item 17.3 – Subgrade preparation shall be in accordance with City of Greeley Construction Specifications, Section 02225.
- Item 17.3 – Final replacement thickness of patches shall be 5 ½" for local streets, 7" for industrial, collector and arterial streets, or 1" greater than the existing pavement, whichever is greater.
- Item 17.3 – Replacement of unstable subgrade with flow fill is not required. However, unstable subgrade shall be stabilized in a manner approved by the City Greeley Construction Services Representative prior to patching.
- If pavement patch is made in a concrete pavement, see MGPEC Item 11 for PCCP requirements. Patches in concrete pavement shall consist of Portland Cement Class P concrete, and shall be doweled to the existing pavement in a manner specified by the City of Greeley Construction Services Representative.
- The contractor shall be responsible for maintaining temporary patches. In the case of an emergency the City of Greeley may elect to repair the temporary patch and back charge the Contractor for all costs associated with the repairs.

SECTION 02585

PORTLAND CEMENT CONCRETE PAVEMENT

City of Greeley Construction Specifications for Portland Cement Concrete Pavement hereby references the Metropolitan Government Pavement Engineers Council (MGPEC) Pavement Design Standards and Construction Specifications Manual, Volume 1, latest revisions, **Item 11 - Portland Cement Concrete Pavement**, with the following exceptions:

- Item 11.4.1 – Delete “Item 3, Embankment” and replace with City of Greeley Construction Specifications, Section 02220.
- Item 11.11 – The testing referred to in Table 11.11 is to be considered quality control testing, and is to be performed by the developer or contractor at no cost to the City of Greeley unless otherwise provided for with City of Greeley capital improvement projects.
- Item 11.2.6 Admixtures – Calcium chloride or admixtures containing chloride shall not be allowed in reinforced concrete and is strictly prohibited in the production of high early strength concrete.

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 SCOPE

- A. This section addresses cast-in-place concrete for thrust restraints, sanitary sewer manhole bases, and cut-off walls, including forms, reinforcing steel, finishing and curing, and other appurtenant work.
- B. All other concrete work shall conform to the Design Criteria and Construction Specifications Streets Volume I (SDC).

1.2 REFERENCES

- A. American Concrete Institute (ACI):
 - 1. 117, *Specifications for Tolerances for Concrete Construction and Materials*, latest revision.
 - 2. 301, *Specifications for Structural Concrete*, latest revision.
 - 3. 305.1, *Hot Weather Concreting*, latest revision.
 - 4. 306.1, *Cold Weather Concreting*, latest revision.
 - 5. 309, *Guide for Consolidation of Concrete*, latest revision.
 - 6. 350.1, *Specification for Tightness Testing of Environmental Engineering Concrete Containment Structures*, latest revision.
- B. ASTM International (ASTM):
 - 1. A185, *Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete*, latest revision.
 - 2. A615, *Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement*, latest revision.
 - 3. A996, *Standard Specification for Rail-Steel and Axle –Steel Deformed Bars for Concrete Reinforcement*, latest revision.
 - 4. C31/C31M, *Standard Test Practice for Making & Curing Concrete Test Specimens in the Field*, latest revision.
 - 5. C33, *Standard Specification for Concrete Aggregates*, latest revision.
 - 6. C39/C39M, *Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens*, latest revision.

7. C94/C94M, *Standard Specification for Ready-Mixed Concrete*, latest revision.
8. C143/C143M, *Standard Test Method for Slump of Hydraulic Cement Concrete*, latest revision.
9. C150, *Standard Specification for Portland Cement*, latest revision.
10. C157/C157M, *Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete*, latest revision.
11. C231, *Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method*, latest revision.
12. C260, *Standard Specification for Air-Entraining Admixtures for Concrete*, latest revision.
13. C494/C494M, *Standard Specification for Chemical Admixtures for Concrete*, latest revision.
14. A1064, *Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete*, latest revision.
15. C618, *Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete*, latest revision.
16. C1218/C1218M, *Standard Test Method for Water-Soluble Chloride in Mortar and Concrete*, latest revision.
17. C1260, *Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)*, latest revision.
18. C1315, *Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete*, latest revision.
19. C1602/1602M, *Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete*, latest revision.

1.3 SUBMITTALS

- A. Submit batch tickets for each load at the time of delivery indicating the following:
 1. Identification name and number.
 2. Date.
 3. Quantity delivered.
 4. Mix design.
 5. Mix time.
 6. Time at which the water was added.

7. Amount of water added at job site.
 8. All quantities of mix ingredients in batch.
 9. Amounts of admixtures added to mix.
- B. Mix Designs:
1. Submitted to the City for review and approval not less than two (2) weeks prior to first concrete placement.
 2. Concrete mix designs shall contain proportions of materials and admixtures to be used on work, signed by mix designer.
 3. Documentation of average strength for each proposed mix design in accordance with ACI 301.
 4. Letter of Certification that Concrete Producer has verified compatibility of constituent materials in design mix.
 5. Test Reports:
 - a. Cement: Chemical analysis report.
 - b. Supplementary Cementitious Materials: Chemical analysis report and report of other specified test analyses.
 - c. Water-Soluble Chloride-Ion Content in Hardened Concrete: Unless otherwise permitted, in accordance with ASTM C1218 at an age between 28 and 42 days.
 - d. Shrinkage Test Results: In accordance with ASTM C157 as modified herein.
 6. Aggregates:
 - a. Gradation for coarse aggregates. List gradings and percent passing through each sieve.
 - b. Gradation for fine aggregates. List gradings and percent passing through each sieve.
 - c. Percent of fine aggregate weight to total aggregate weight.
 - d. Deleterious substances in fine aggregate per ASTM C33, Table 1.
 - e. Deleterious substances in coarse aggregate per ASTM C33, Table 3.
 - f. Manufacturer's Letter of Certification that the aggregate conforms to the specified class designation for coarse aggregate.
 - g. Test Reports:

5. Curing methods (including use of evaporation retardant).
 6. Procedures for measuring and recording concrete temperatures.
 7. Procedures for preventing drying during dry, windy conditions.
- F. Manufacturer's application instructions for bonding agent and bond breaker.
- G. Manufacturers' Letter of Certification of conformance to specified standards:
1. Portland cement.
 2. Fly ash.
 3. Aggregates.
 4. Admixtures.
 5. Bonding agent.
 6. Bond breaker.
- H. Statement of Qualification:
1. Batch Plant: Certification as specified herein.
 2. Mix designer.
 3. Installer.
 4. Testing Agency.
- I. Field test reports.
- J. Results of tightness tests.
- K. Concrete Delivery Tickets:
1. For each batch of concrete before unloading at Site.
 2. In accordance with ASTM C94/C94M, including requirements 14.2.1. through 14.2.10.
 3. Indicate amount of mixing water withheld, and maximum amount that may be permitted to be added at Project site.
 - a. Document all water added on site during or prior to placement.
 4. Indicate all components included in the concrete mix and any admixtures.
- L. Curing

1. Manufacturers' data for the following products:
 - a. Evaporation retardant.
 - b. Curing compound.
 - c. Clear sealer.
 - d. Clear floor hardener.
 2. Curing methods proposed.
 3. Curing Compound
 - a. Manufacturer's Certificate of Compliance showing moisture retention requirements.
- M. Submittal Drawing
1. Submitted to the City for review and approval not less than two (2) weeks prior to placement and must include information on steel placement, sizing, compressive strength, and grade of steel reinforcement. Steel placement and sizing are to meet the City of Greeley Standard Drawing.

1.4 QUALITY ASSURANCE

- A. See the quality assurance requirements in the City of Greeley Design Criteria and Construction Specifications Streets Volume I.

PART 2– PRODUCTS

2.1 CEMENT

- A. All cement shall be Portland Cement. No other cement shall be used without prior written permission of the City.
- B. Portland Cement shall conform to ASTM C150, Type I/II.

2.2 AGGREGATES

- A. Unless otherwise permitted, furnish from one source for each aggregate type used in a mix design.
 1. Normal-Weight Aggregates:
 - a. In accordance with ASTM C33, except as modified herein.
 - i. Class Designation: 4S unless otherwise specified.
 - b. Free of materials and aggregate types causing pop outs, discoloration, staining, or other defects on surface of concrete.

- c. Alkali Silica Reactivity: See Article Concrete Mix Design.
- 2. Fine Aggregates:
 - a. Clean, sharp, natural sand.
 - b. ASTM C33.
 - c. Limit deleterious substances in accordance with ASTM C33, Table 1 and as follows:
 - i. Limit material finer than 75- μ m (No. 200) sieve to 5 percent mass of total sample.
 - ii. Limit coal and lignite to 0.5 percent.
- 3. Coarse Aggregate:
 - a. Natural gravels, combination of gravels and crushed gravels, crushed stone, or combination of these materials containing no more than 15 percent flat or elongated particles (long dimension more than five times the short dimension).
 - b. Limit deleterious substances in accordance with ASTM C33, Table 3 for specified class designation.

2.3 WATER

- A. Mixing water for concrete shall be potable. Alternative sources of water may be permitted with prior approval from the City.
 - 1. If approved by the City, water from alternative sources shall comply with requirements of ASTM C1602/C1602M, and the concentration of chemicals in combined mixing water shall be less than:
 - a. 1,000 ppm chloride content.
 - b. 3,000 ppm sulfate content as SO₄
 - c. 600 ppm alkalis as (Na₂O + 0.658 K₂O).
 - d. Total solids by mass less than 50,000 ppm.

2.4 ADMIXTURES

- A. Admixtures shall be certified to be compatible with each other.
- B. Admixtures shall not contain calcium chloride.
- C. Air-Entraining Admixture

1. An air entraining agent shall be used in all concrete. All air entraining agents shall conform to ASTM C260.
 2. Total air content: 5% to 8%
- D. Water Reducing Admixture
1. A water reducing admixture may be used, if approved by the City.
 2. A water reducing admixture shall conform to ASTM C494 for Type A or Type D chemical admixture.
 3. The water reducing admixture shall be compatible with the cement being used and shall not contain any calcium chloride (CaCl₂).
- E. Accelerators shall conform to ASTM C494 and ACI 306.
- F. Fly Ash
1. When fly ash is used in concrete, the cement replacement shall not exceed 20%.
 2. Fly ash shall conform to ASTM C618, Class C or F. Class C fly ash will not be permitted where sulfate resistant concrete is required.
- G. Antimicrobial Crystalline Waterproofing Admixture
1. Xypex Bio-San C500
 2. Xypex Bio-San C500 must be added to concrete mix at batch plant.
 3. The antimicrobial crystalline powder shall be added to the concrete mix at 1% by weight of the cementitious material content
- H. Any admixture including air entraining agents, accelerators, and retarders must be approved by the City.

2.5 REINFORCING MATERIALS

- A. All deformed reinforcing bars shall conform to ASTM A615 or ASTM A996. All bars shall be Grade 60.
- B. All welded steel wire fabric shall conform to ASTM A1064 and ASTM A185.
- C. Reinforcement supports and spacers shall be plastic coated steel or heavy duty plastic of design and strength to hold reinforcement accurately in place before and during placement of concrete.

2.6 FORMWORK

- A. Forms

1. Forms shall be designed to produce hardened concrete having the shape, lines, and dimensions shown on the approved Construction Drawings.
2. Plywood shall be PSI, waterproof, resin-bonded, exterior type, Douglas Fir.
3. Lumber shall be straight, uniform width and thickness, free from knots, offsets, holes, dents and other surface defects.
4. Form oil shall be light colored paraffin oil or other non-staining material.
5. Forms shall be coated with a form releasing agent before the form or reinforcement is placed in final position. The coating shall be used in accordance with the manufacturer's instructions.
6. Commercial formulation form coating compounds shall not bond with, stain, nor adversely affect the concrete surface's bond or adhesion, and shall not impede wetting of surfaces to be cured with water or curing compounds. Surplus coating on form surfaces and coating on reinforcing steel and construction joints shall be removed before placing concrete.

B. Form Ties

1. Commercially manufactured, removable or snap-off metal form ties designed to withstand applied stresses, prevent spreading of forms during concrete placement, and prevent concrete from spalling upon removal.
 - a. Form ties shall be submitted for approval by the city prior to use.
2. For water holding structures, form tie shall have integrated water stops.
3. Use of wire ties is prohibited.

2.7 MIX DESIGN

- A. Concrete shall develop a minimum field compressive strength of 4000 psi after 28 days, unless otherwise specified by the City (i.e. thrust blocks).
 1. Exception: Concrete utilized for thrust blocks shall develop a minimum field compressive strength of 2500 psi after 28 days. Contractor may utilize standard concrete plant mix design for exterior use and air entrainment.
- B. The water/cement ratio shall not exceed 0.50 by weight.
 1. The water/cement ratio may be increased to 0.56, by weight, if a water reducing agent is used.
 2. High early or rapid set concrete may be allowed in high traffic situations.

2.8 Curing Compound:

- A. Water-based, high solids content non-yellowing curing compound meeting requirements of ASTM C309 and ASTM C1315.

1. Moisture Loss: 0.40 kg/m²/72 hours maximum.
 2. Capable of meeting moisture retention at manufacturer's specified application rate.
- B. Manufacturers and Products:
1. BASF; Masterkure.
 2. Euclid Chemical Co.; Super Diamond Clear VOX.
 3. WR Meadows, Inc.; VOCOMP-30.
 4. Vexcon Chemical, Inc.; Starseal 1315.
 5. Dayton Superior.
- C. Water: Clean and potable, containing less than 500 ppm of chlorides.

PART 3– EXECUTION

3.1 TESTING CONCRETE

- A. Testing procedures and testing frequency shall be in accordance with the *SDC*.
- B. Making and curing concrete cylinders, ASTM C31.
- C. Testing concrete cylinders, ASTM C39.
- D. Slump, ASTM C143.
- E. Slump Tolerance, ACI 117
- F. Air content, ASTM C231.

3.2 MIXING AND TRANSPORTING READY-MIXED CONCRETE

- A. In accordance with ACI 301, except as modified herein.
- B. The maximum elapsed time from the time water is added to the mix until the concrete is in place shall not exceed 1 ½ hours when concrete is transported in revolving drum truck bodies.
- C. The temperature of the concrete shall never exceed 90° F.

3.3 PROTECTION

- A. Cold Weather Concrete
 1. Concrete shall not be placed unless the air temperature adjacent to the concrete placement is 30° F and rising, unless prior written acceptance for cold weather concrete operations is obtained from the City.

2. If cold weather concrete operations are accepted by the City, when daily low temperatures are below 40° F or when temperatures are predicted to be below 40° F within three (3) days of concrete placement, comply with ACI 306.1.
3. Water shall not be heated to a temperature greater than 150° F.
4. If hot air heaters are used, cover exposed surfaces of concrete with impervious sheet material or curing compound to prevent dehydration of concrete.
5. Do not place concrete against frozen ground or against surfaces with frost or ice present.
6. Provide maximum and minimum temperature sensors placed on concrete surfaces spaced throughout the work to allow monitoring of concrete surface temperatures representative of the work. Unless otherwise permitted, record surface temperature of concrete at least once every 12 hours during the specified curing period.

B. Hot Weather Concrete

1. Concrete shall not be placed if the daily high temperature exceeds 90° F unless otherwise accepted by the City.
2. When daily high temperature is 90° F or above, or hot weather conditions exist that would impair quality and strength of concrete, comply with ACI 305.1.
3. Temperature of concrete immediately before placement in forms shall be between 50° F and 90° F.
4. Provide for windbreaks, shading, fog spraying, sprinkling, ice, wet cover, or other means as necessary to maintain concrete at or below specified temperature.
5. To facilitate the placement of concrete in hot weather, the aggregate or the water may be cooled.

3.4 FORMS

- A. Brace or tie forms to maintain desired position, shape and alignment before, during, and after placement.
- B. Do not remove or disturb forms until the concrete has attained sufficient strength to safely support all dead and live loads.
- C. Remove forms with care to avoid surface gouging, corner or edge breakage, and other damage to the concrete.

3.5 REINFORCING

- A. Prior to placing concrete, accurately place reinforcing steel. Maintain in proper position while concrete is being placed and vibrated.

3.6 CONCRETE PLACEMENT

- A. In accordance with ACI 301, except as modified herein.
- B. Batch ticket shall indicate amount of mixing water withheld, and maximum amount that may be permitted to be added at Project site. Any water added must be document and amount provided to City. Any additional water above noted maximum amount shall be rejected and removed from the Project site.
- C. Convey concrete to the point of final deposit by methods which will prevent the separation or loss of concrete components.
- D. Height of concrete freefall shall be limited to four (4) feet.
- E. During and immediately after placement, concrete shall be thoroughly consolidated by mechanical vibrating equipment supplemented by handspading, rodding or tamping worked around reinforcements and embedments, and worked into all corners of the forms. Use equipment and procedures for consolidating concrete in accordance with ACI 309.
- F. Notify City at least 1 full working day in advance before starting to place concrete.
- G. Hot Weather Placement:
 - 1. Prepare ingredients, mix, place, cure, and protect in accordance with ACI 301, ACI 305.1, and as follows:
 - a. Maintain concrete temperature below 95 degrees F at time of placement, or furnish test data or provide other proof that admixtures and mix ingredients do not produce flash set plastic shrinkage, or cracking as a result of heat of hydration. Cool ingredients before mixing to maintain fresh concrete temperatures as specified or less.
 - b. Provide for windbreaks, shading, fog spraying, sprinkling, ice, wet cover, or other means as necessary to maintain concrete at or below specified temperature.
 - 2. Cure concrete as specified in Section 3.8, Concrete Curing.
- H. Cold Weather Placement:
 - 1. Unless otherwise permitted, shall be in accordance with requirements of ACI 306.1 and as follows:
 - a. Cold weather requirements shall apply when ambient temperature is below 40 degrees F or approaching 40 degrees F and falling.
 - b. Do not place concrete over frozen earth or against surfaces with frost or ice present. Frozen earth must be thawed to the acceptance of the City.

- c. Unless otherwise permitted, do not place concrete in contact with surfaces less than 35 degrees F. This requirement is applicable to all surfaces including reinforcement and other embedded items.
- d. Provide supplemental external heat as needed when other means of thermal protection are unable to maintain minimum surface temperature of concrete as specified in ACI 306.1.
- e. Maintain minimum surface temperature of concrete as specified in ACI 306.1 for no less than 3 days during cold weather conditions.
- f. Cure concrete as specified in Section 3.8, Concrete Curing. Protect concrete from freezing until the end of the curing period and until the concrete has attained a compressive strength of 3,500 psi (or the design compressive strength if less than 3,500 psi).

3.7 FINISHING UNFORMED SURFACES

- A. Screed and give an initial float finish as soon as concrete has stiffened sufficiently for proper working.
- B. Initial floating shall produce a surface of uniform texture and appearance.
- C. Follow with a second floating at the time of initial set. This floating shall produce a finish of uniform texture and color.
- D. In areas where concrete is to remain exposed, the final finish shall be obtained with a light brooming.
- E. Manhole inverts shall be true to line and grade and smooth.

3.8 CURING

- A. Finished concrete shall be cured by protecting it against moisture loss, rapid temperature change, precipitation, flowing water, and mechanical injury for a minimum of seventy-two (72) hours after placement.
- B. Concrete shall be maintained at a minimum of 50° F during the curing period.
- C. Curing compound shall be used on all flat exposed surfaces.
- D. The Contractor shall be responsible for protecting the concrete from traffic and the elements.

3.9 CARE AND REPAIR OF CONCRETE

- A. The Contractor shall protect all concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance by the City.
- B. All concrete structures shall not have backfill placed against them until the concrete has reached sufficient strength so as not to have any damage caused by the backfill or backfill operations.

- C. Any concrete found to be damaged, or that may have been originally defective, or that becomes defective after any time prior to the final acceptance of the completed work, or that departs from the established line or grade, or that, for any other reason, does not conform to the requirements of the City shall be satisfactorily repaired as directed by the City or removed and replaced with acceptable concrete at no expense to the City.

3.10 FIELD QUALITY CONTROL

A. General:

1. Provide adequate facilities for safe storage and proper curing of concrete test specimens onsite for first 24 hours, and for additional time as may be required before transporting to test lab.
2. Unless otherwise specified, sample concrete for testing for making test specimens, from the point of delivery.
3. When concrete is pumped, sample and test air content at point of delivery and at the point of placement.
 - a. For Each Concrete Mixture: Provided the results of the air content tests for the first load of the day are within the specified limits, testing need only be performed at the point of delivery for subsequent loads of that concrete mixture except that testing should be performed at the point of placement every four hours.
4. Evaluation will be in accordance with ACI 301 and Specifications.
5. Test specimens shall be made, cured, and tested in accordance with ASTM C31/C31M and ASTM C39/C39M.
6. Frequency of testing may be changed at the discretion of City.
7. Pumped Concrete: Take concrete samples for slump (ASTM C143/ C143M) and test specimens (ASTM C31/C3 IM and ASTM C39/C39M) and shrinkage specimens (ASTM C157/C 157M) at placement (discharge) end of line.
8. If measured air content at delivery is greater than the specified limit, a check test of air content will be performed immediately on a new sample from delivery unit. If check test fails, the concrete has failed to meet requirements of Contract Documents. If measured air content is less than the lower specified limit, adjustments will be permitted in accordance with ASTM C94/C94M, unless otherwise specified. If the check test of the adjusted mixture fails, the concrete has failed to meet requirements of Contract Documents. Concrete that has failed to meet requirements of Contract Documents shall be rejected.

B. Concrete Strength Test:

1. Unless otherwise specified, one specimen at age of 7 days for information, and two 6-inch diameter or when permitted three 4-inch diameter test specimen at age of 28 days for acceptance.

2. If result of 7-day concrete strength test is less than 50 percent of the specified 28-day strength, extend the period of moist curing specified in Section 3.8, Concrete Curing, by 7 additional days.
3. Provide a minimum of one spare test specimen per sample. Spare cylinder shall be tested as directed by City.

C. Shrinkage Tests:

1. When required to conform to shrinkage limits, collect actual concrete materials being batched and before liquids have been added to the mix. Mix sampled material in a laboratory at proportions matching the batched concrete. Test shrinkage characteristics every 5,000 cubic yards of concrete used on job and every 3 months during construction when compression test cylinders are made.
2. Concrete Shrinkage Limits: Test in accordance with ASTM C157/ C157M, with the following modifications:
 - a. Prisms shall be moist cured for 7 days prior to the 28-day drying period.
 - b. Comparator reading at the end of the 7-day moist cure shall be used as the initial length in the length change calculation.
 - c. Reported results shall be the average of three prisms.
 - d. If drying shrinkage of any specimen departs from the average of that test age by more than 0.004 percent, disregard results obtained from that specimen.
 - e. Results at the end of the 28-day drying period shall not exceed 0.040 percent if 3-inch prisms are used, or exceed 0.038 percent if 4-inch prisms are used.
 - f. If the 7-day or 14-day shrinkage tests results exceed the shrinkage limits established by the design mix testing, furnish an additional 14 days of water curing beyond the original curing period, for concrete surfaces of hydraulic structures represented by prisms. Modify the concrete mix design to reduce shrinkage prior to casting additional concrete for the work.

D. High Range Water Reducer (Superplasticizer) Admixture Segregation Test: Test each truck prior to use on job.

1. Segregation Test Objective: Concrete with a 4-inch to 8-inch slump must stay together when slumped. Segregation is assumed to cause mortar to flow out of mix even though aggregate may stay piled enough to meet slump test.
2. Test Procedure: Make slump test and check for excessive slump and observe to see if mortar or moisture flows from slumped concrete.
3. Reject concrete if mortar or moisture separates and flows out of mix.

E. Cold Weather Placement Tests:

1. During cold weather concreting, cast cylinders for field curing as follows. Use a method that will produce a greater number of specimens:
 - a. Six extra test cylinders from the last 100 cubic yards of concrete.
 - b. Minimum of three specimens for each 2 hours of placing time or for each 100 cubic yards.
2. These specimens shall be in addition to those cast for lab testing.
3. Protect test cylinders from weather until they can be placed under the same protection provided for the concrete structure that they represent.
4. Keep field test cylinders in the same protective environment as the parts of structure they represent to determine if specified strength has been obtained.
5. Test cylinders in accordance with applicable sections of ASTM C31/ C31M and ASTM C39/C39M.
6. Use test results to determine the specified strength gain prior to falsework removal or for prestressing.

F. Tolerances:

1. Slab Finish Tolerances and Slope Tolerances:
 - a. Floor flatness measurements shall be made the day after the floor is finished and before shoring is removed to eliminate effects of shrinkage, curing, and deflection.
 - b. Support 10-foot-long straightedge at each end with steel gauge blocks of thicknesses equal to specified tolerance.
 - c. Compliance with the designated limits in four of five consecutive measurements is satisfactory, unless defective conditions are observed.

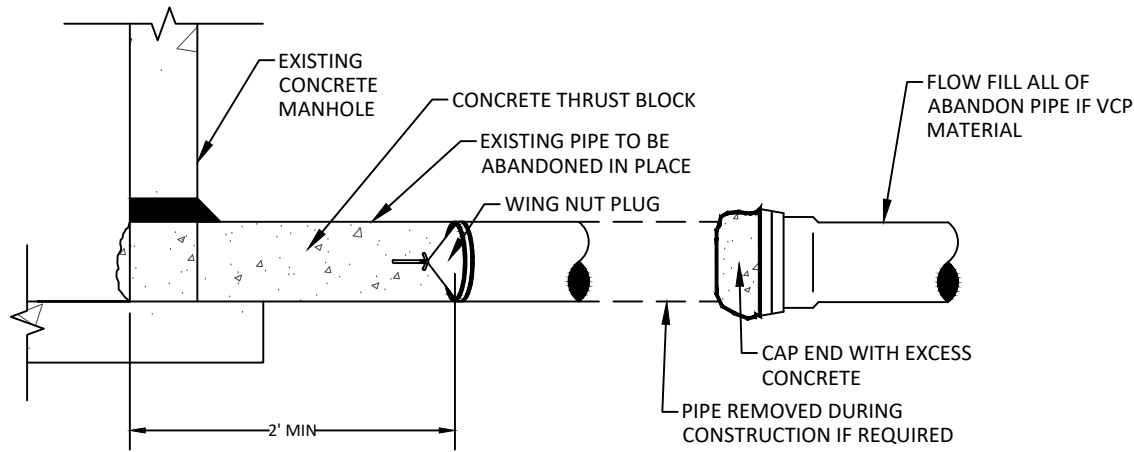
G. Liquid Tightness Tests:

1. Purpose: To determine integrity and liquid-tightness of finished exterior and interior concrete surfaces of liquid containment structures.
2. All liquid-containing concrete structures are to be tested for liquid-tightness as specified, unless otherwise noted on the Drawings.
3. Water for the initial tightness test shall be from a city approved source. Contractor shall provide means to transport water to the structure to be tested. If additional tightness tests are required due to failure to meet criteria, the Contractor shall provide water for the subsequent tests.

4. After testing has been completed, dispose of test water in a manner approved by the City. Requirements for Liquid-Tightness Test:
 - a. Perform tightness tests in accordance with ACI 350.1 and as specified herein.
 - b. Do not place backfill, coatings, or other work that will cover concrete surfaces until tightness testing has been completed and approved.
5. Measure water surface at two points 180 degrees apart when possible where attachments, such as ladders exist, at 24-hour intervals.
6. Acceptance Criteria:
 - a. Volume loss shall not exceed 0.050 percent of contained liquid volume per 24-hour period, adjusted for evaporation, precipitation, and temperature
 - b. Acceptance that the structure has passed the tightness test shall be based on the total volume loss at the end of the specified test period.
7. Repairs When Test Fails: Dewater structure; fill leaking cracks with crack repair epoxy or polyurethane material that is specific to the type of repairs and meets manufacturer requirements. Patch areas of damp spots previously recorded, and repeat water leakage test in its entirety until the structure successfully passes the test.
 - a. Contractor has one attempt at fixing the leaking of the structure. Any subsequent repairs shall be performed by a City approved structural leak repair expert.

3.11 PROTECTION OF INSTALLED WORK

- A. After curing as specified in Section 3.8, Concrete Curing, and after applying final floor finish, cover slabs with plywood or particle board or plastic sheeting or other material to keep floor clean and protect it from material and damage as a result of other construction work.
- B. Repair areas damaged by construction, using specified repair materials and approved repair methods



EXISTING SANITARY SEWER MAIN ABANDONMENT DETAIL

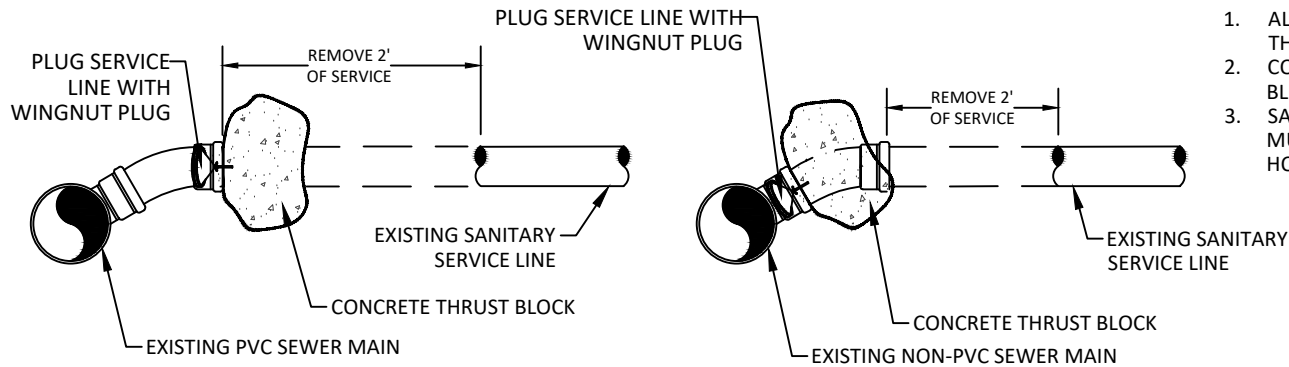
NOTES:

SANITARY SEWER MAIN ABANDONMENT

1. EXISTING SANITARY SEWER MAINS AND SERVICES ABANDONED IN MANHOLES SHALL HAVE A WING NUT PLUG PLACED 2' OUTSIDE OF MANHOLE & HAVE A CONCRETE THRUST BLOCK PLACED FROM INSIDE THE MANHOLE TO THE WING NUT PLUG.
2. ALL ABANDONED MAINS SHALL HAVE BOTH ENDS CAPPED AND ABANDON.
3. ANY EXISTING VITRIFIED CLAY PIPE (VCP) SHALL BE FLOW FILLED COMPLETELY. ALL OTHER PIPE MATERIALS SHALL BE CAPPED ON BOTH ENDS WITH CONCRETE.
4. SANITARY SEWER MAIN ABANDONMENT MUST BE SCHEDULED WITH THE CITY 72 HOURS IN ADVANCE AT 970-350-9322.

SANITARY SEWER SERVICE ABANDONMENT

1. ALL SEWER SERVICES SHALL BE PLUGGED AT THE SEWER MAIN.
2. CONTRACTOR TO INSTALL CONCRETE THRUST BLOCK BEHIND THE WING NUT PLUG.
3. SANITARY SEWER SERVICE ABANDONMENT MUST BE SCHEDULED WITH THE CITY 72 HOURS IN ADVANCE AT 970-350-9322.



EXISTING SANITARY SEWER SERVICE ABANDONMENT DETAIL

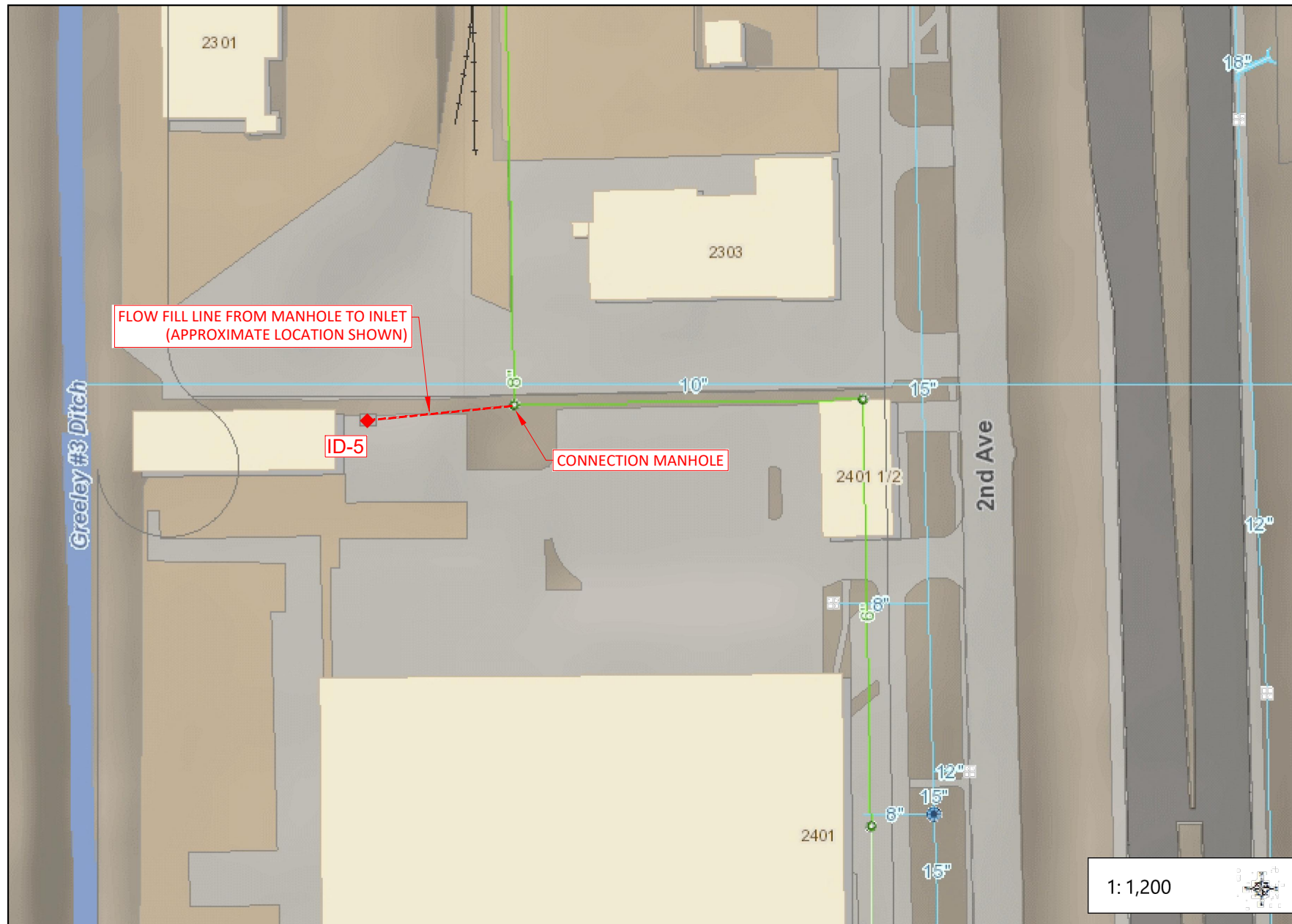


EXISTING SANITARY SEWER SERVICE & MAIN ABANDONMENT

DETAIL WS-6

DATE: JANUARY 2023

SCALE: N.T.S.

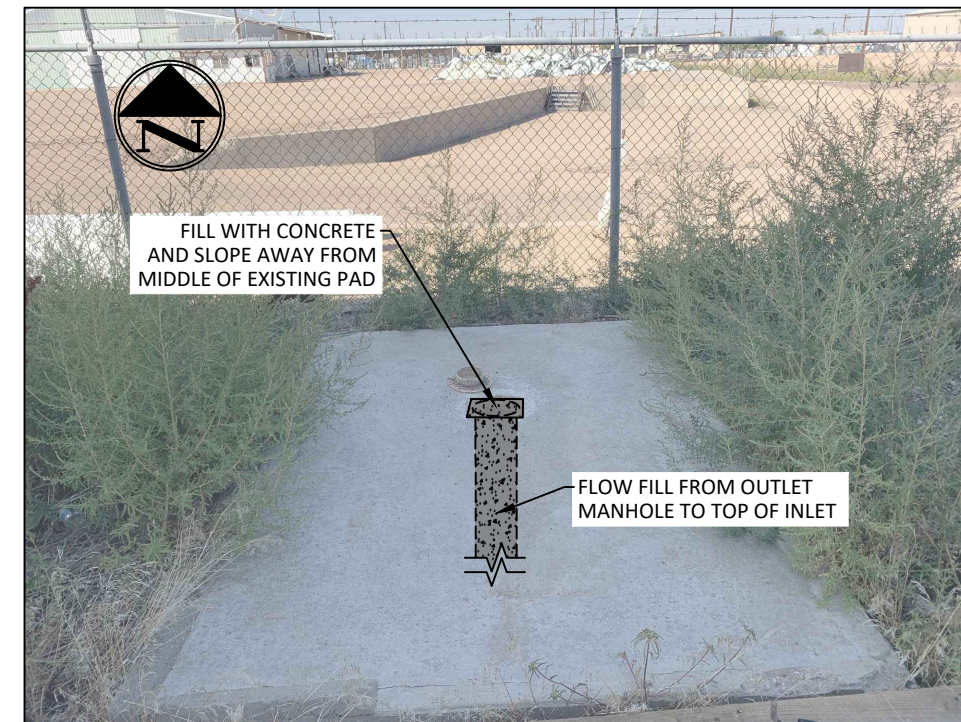


PLAN VIEW

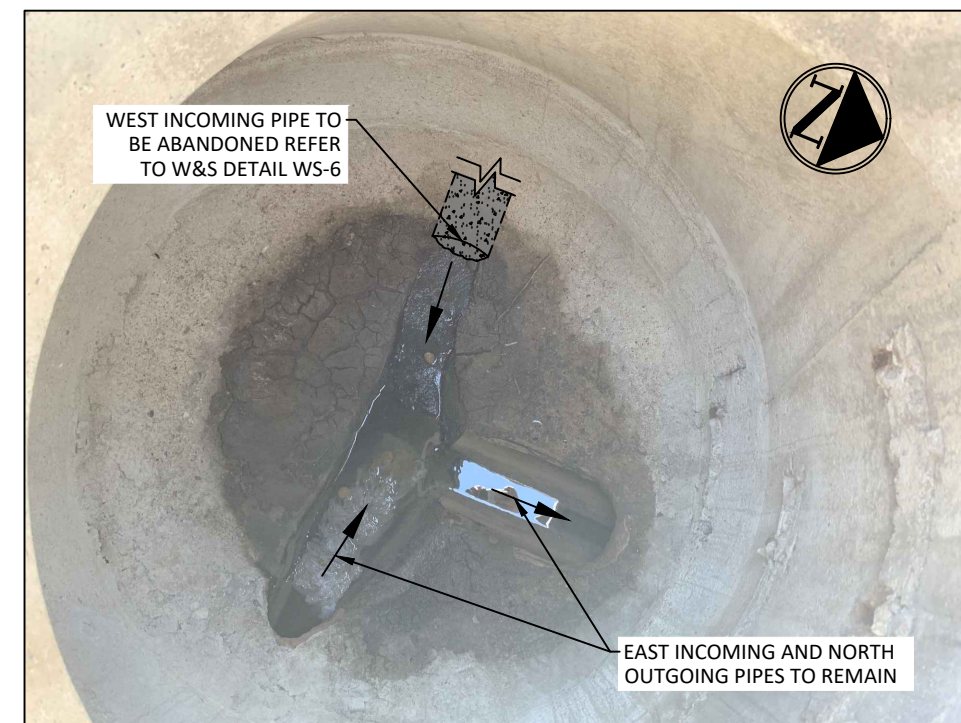
CONSTRUCTION NOTES:

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2. REFER TO THE CITY OF GREELEY WATER & SEWER DEPARTMENT (W&S) DETAIL WS-6 FOR CAPPING AND ABANDONMENT.
3. REFER TO W&S SPECIFICATION 03300 FOR CAST-IN-PLACE CONCRETE.
4. REFER TO W&S SPECIFICATION 02315 FOR EXCAVATION AND BACKFILL.
5. CONTRACTOR SHALL DISPOSE OF ALL UNUSED MATERIALS & RESTORE SITE TO EXISTING CONDITIONS.
6. REFER TO STREETS DEPARTMENT SPECIFICATIONS 02576 AND 02585 FOR ALL PAVEMENT REPAIRS.

INLET PLUGGING



OUTLET PLUGGING AT MANHOLE



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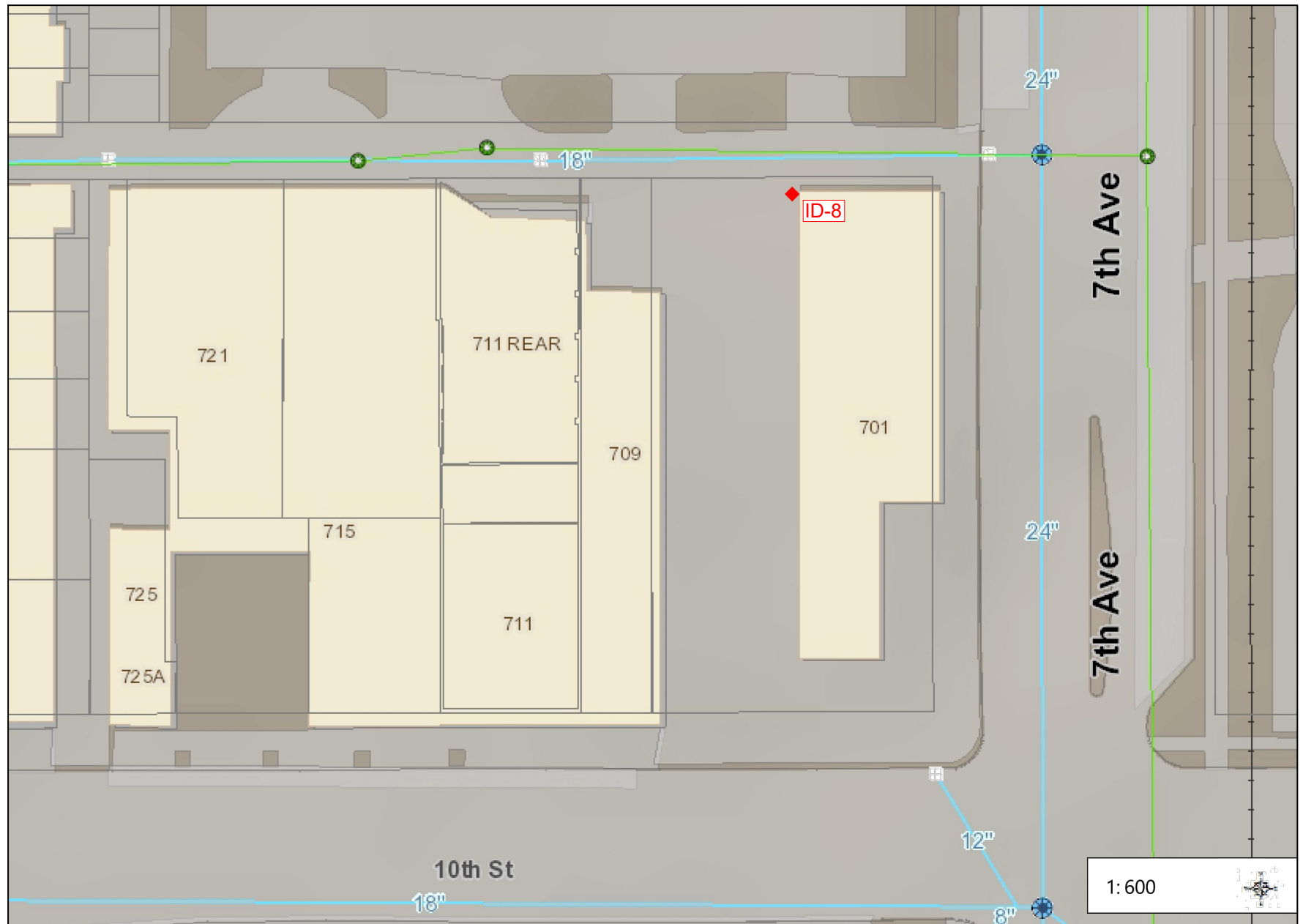
WATER & SEWER DIVISION
 1001 11TH AVE, 2ND FLOOR GREELEY, COLORADO 80631
 PHONE: 970-350-9811
 Water@greeleygov.com

CITY OF GREELEY WATER & SEWER DEPARTMENT
2022 STORM SEWER CROSS-CONNECTION IMPROVEMENTS
 CONSTRUCTION EXHIBIT: SITE #1

DATE: 10/27/2022
SHEETS 4
1 SHEET

BUN: 413.1060.83001

PROJECT CODE: 11075



PLAN VIEW

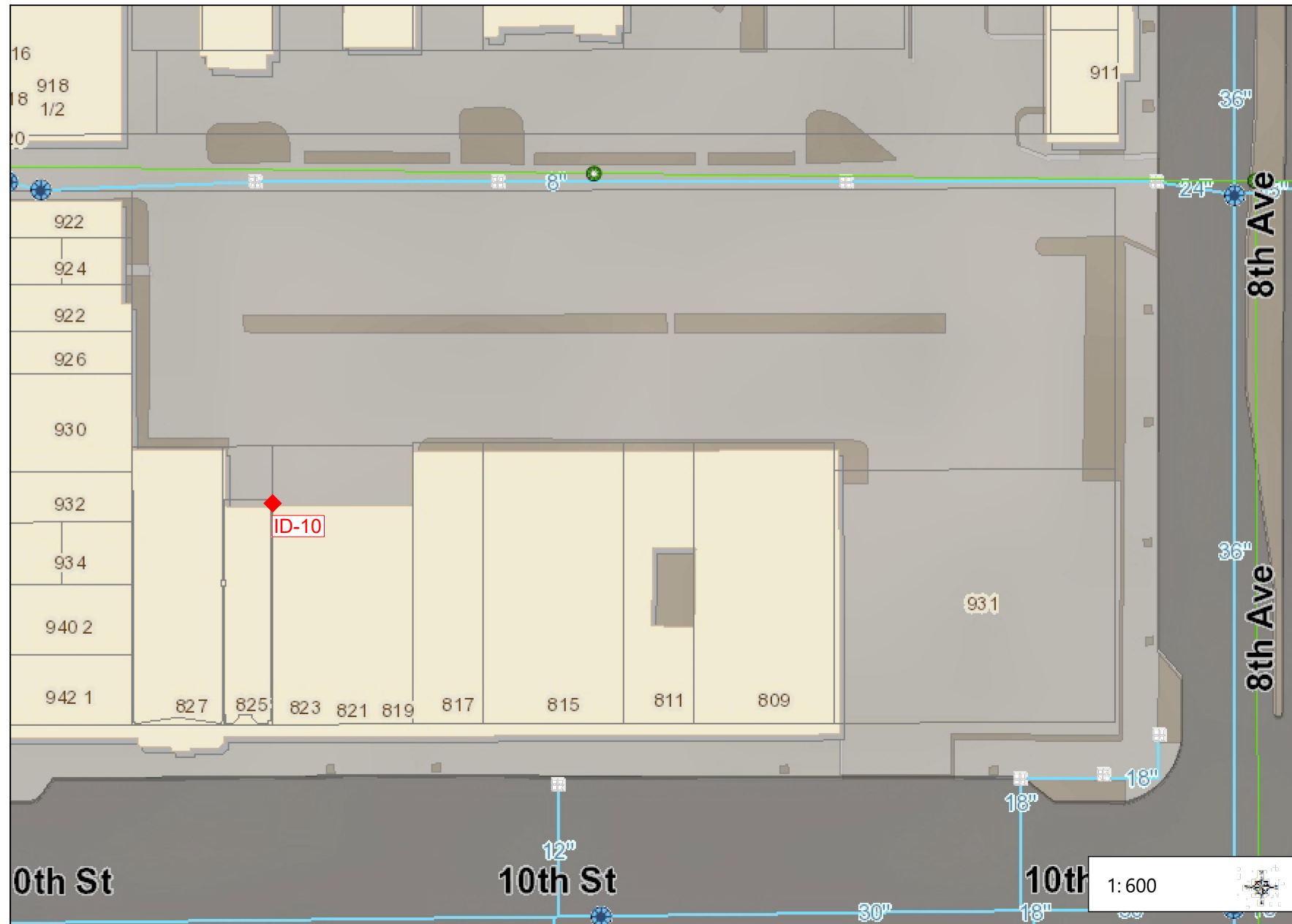
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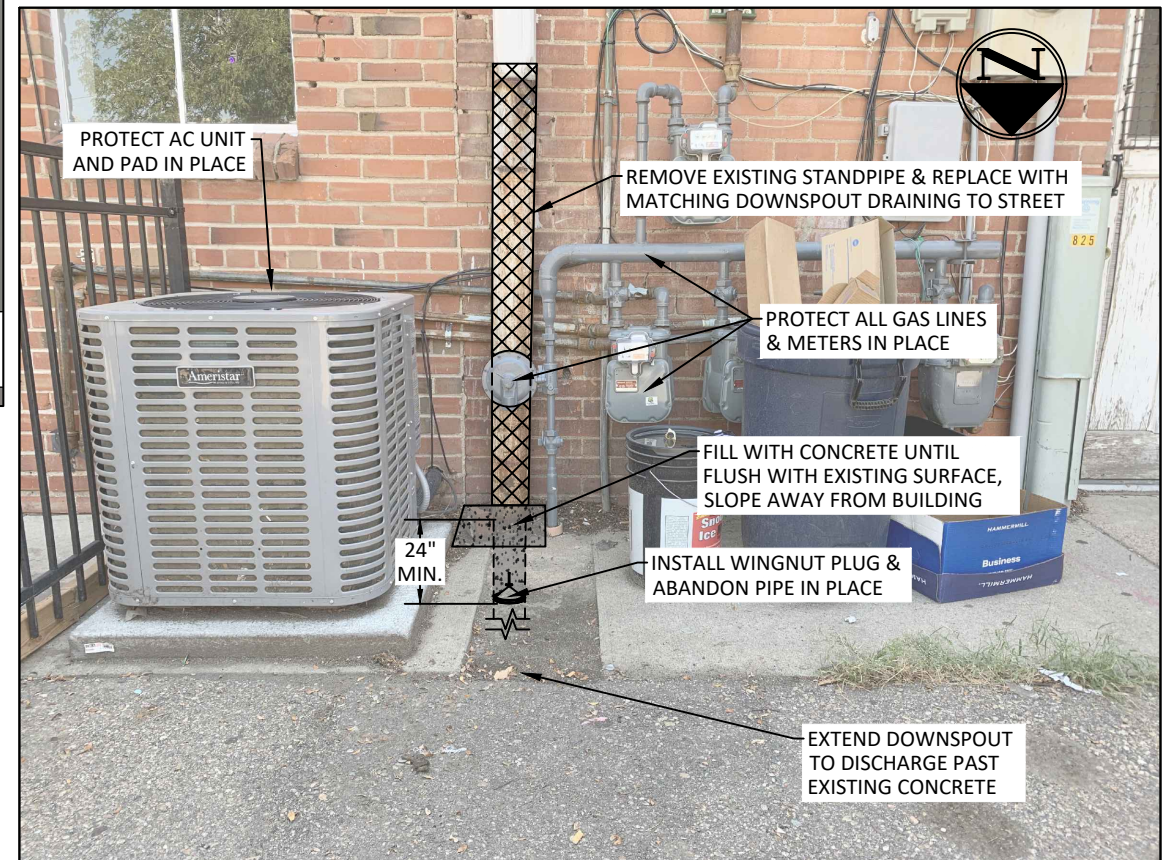
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PLAN VIEW

INLET PLUGGING



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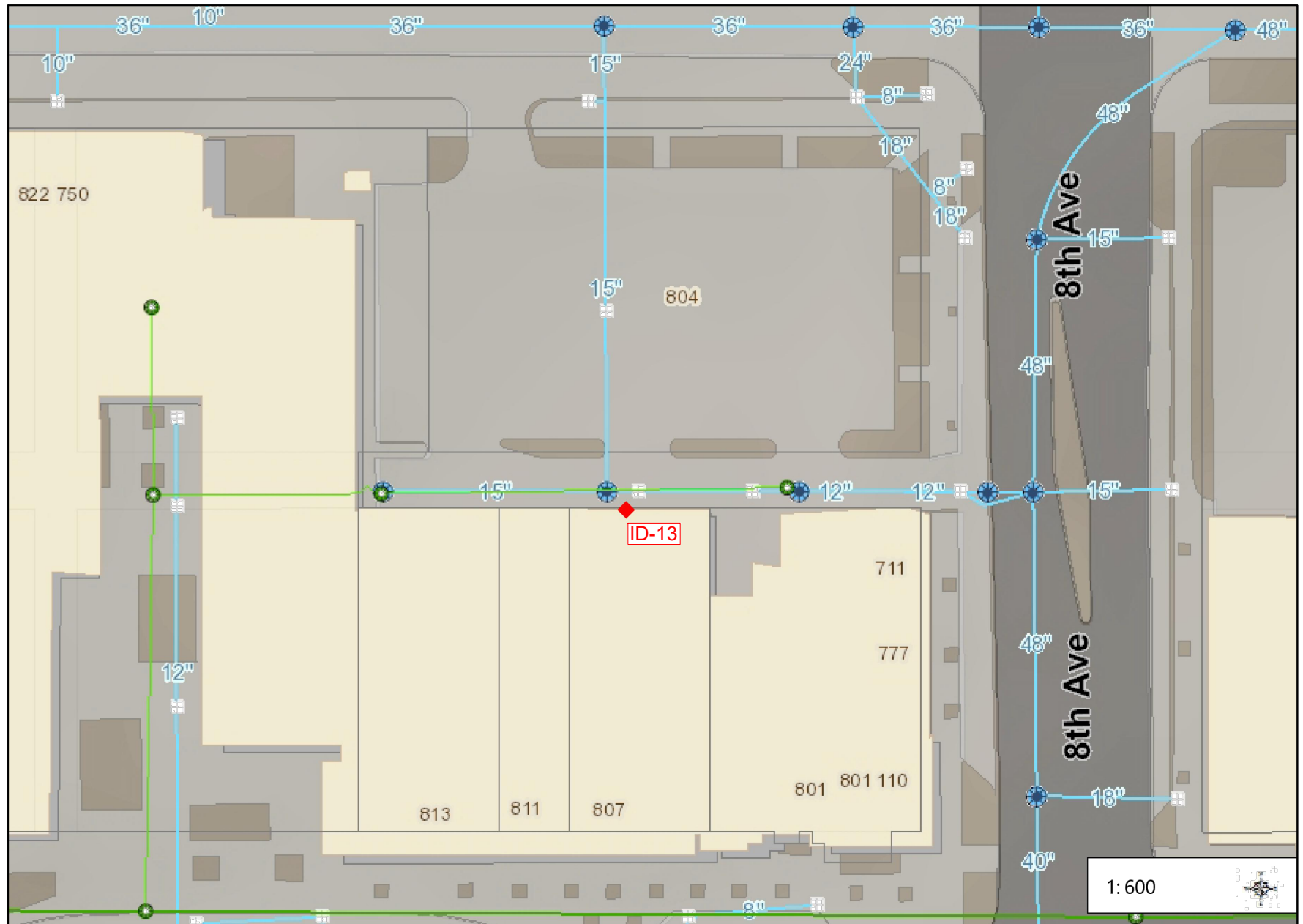
WATER & SEWER DIVISION
 1001 11TH AVE, 2ND FLOOR GREELEY, COLORADO 80631
 PHONE: 970-350-9811
 Water@greeleygov.com

CITY OF GREELEY WATER & SEWER DEPARTMENT
 2022 STORM SEWER CROSS-CONNECTION IMPROVEMENTS
 CONSTRUCTION EXHIBIT: SITE #3

BUN: 413.1060.83001

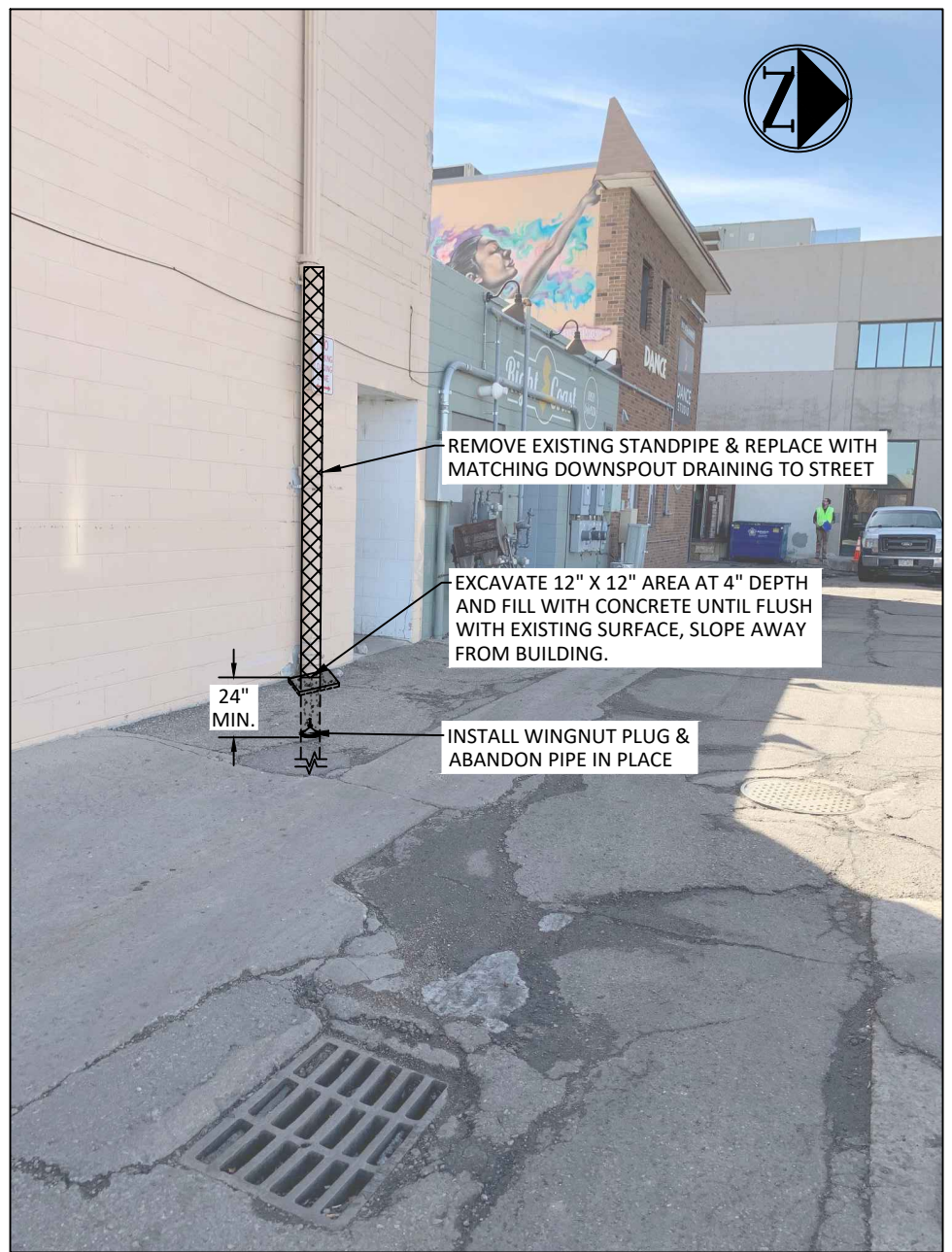
PROJECT CODE: 11075

DATE: 10/27/2022
 SHEETS 4
 3 SHEET



PLAN VIEW

INLET PLUGGING



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WATER & SEWER DIVISION
1001 11TH AVE, 2ND FLOOR GREELEY, COLORADO 80631
PHONE: 970-350-9811
Water@greeleygov.com

CITY OF GREELEY WATER & SEWER DEPARTMENT
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CONSTRUCTION EXHIBIT: SITE #4
BUN: 413.1060.83001 PROJECT CODE: 11075

DATE: 10/27/2022
SHEETS: 4
4 SHEET

DR 160 (9/87)
DEPARTMENT OF REVENUE
1375 SHERMAN STREET
DENVER, COLORADO 80261

State of Colorado

THIS LICENSE IS NOT TRANSFERABLE

CERTIFICATE OF EXEMPTION FOR SALES AND USE TAX ONLY

GREELEY CITY OF
1000 10TH ST
GREELEY CO 80631-3982



A handwritten signature in black ink, appearing to read "John J. [unclear]", is written over the seal.

Executive Director
Department of Revenue

ACCOUNT NUMBER	LIABILITY INFORMATION	ISSUE DATE
98-03320	03 057 8600 9 120180	SEP 02 1988
1000 10TH ST	GREELEY CO	