

Standard Contract  
REV 04/13



**PROJECT DOCUMENTS**

**2017 OVERLAY  
PROJECT #S-PM-01-17  
ITB-17-03  
APRIL 2017**

Prepared by:  
DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION

CITY OF WHEAT RIDGE  
7500 W. 29TH AVENUE  
WHEAT RIDGE, CO 80033  
(303) 235-2861 Engineering  
(303) 235-2857 (FAX)

The engineering material and data contained in these Project Documents were prepared under the supervision and direction of Russell Higgins, PE, Field Services Supervisor.

**TABLE OF CONTENTS**

	<u>PAGE #</u>
SIGNATURE PAGE.....	3
ADVERTISEMENT FOR BIDS.....	4
INFORMATION FOR BIDDERS.....	5
CONTRACTORS QUALIFICATION FORM.....	10
PROPOSAL FORM.....	18
BID SCHEDULE.....	20
LIST OF SUBCONTRACTORS.....	26
NON-DISCRIMINATION ASSURANCE FORM.....	27
ILLEGAL ALIEN COMPLIANCE FORM.....	28
KEEP JOBS IN COLORADO CERTIFICATION STATEMENT.....	29
NON COLLUSION AFFIDAVIT.....	30
BID BOND FORM.....	31
SAMPLE AGREEMENT & FORMS.....	32
GENERAL PROVISIONS.....	41
CITY STANDARD SPECIAL PROVISIONS	
Section 100 - General.....	51
Section 202 - Removal of Structures.....	63
Section 203 - Excavation & Embankment.....	65
Section 210 - Reset Structures.....	67
Section 304 - Aggregate Base Course.....	68
Section 403 - Hot Bituminous Pavement.....	70
Section 412 - Concrete Pavement.....	71
Section 604 - Manholes, Inlets and Meter Vaults.....	72
Section 608 - Sidewalks & Bikeways.....	73
Section 609 - Curb & Gutter.....	75
Section 614 - Traffic Control Devices.....	76
Section 627 - Pavement Marking.....	95
Section 630 - Traffic Control.....	97
Section 720 - Material Sampling & Testing.....	98
STANDARD CONSTRUCTION DETAILS.....	Attachment 1
LIST OF STREETS (informational only).....	Attachment 2
DRAWINGS (map).....	Attachment 3
ADDENDA (if applicable)	



**CITY OF WHEAT RIDGE  
SOLICITATION # ITB-17-03**

**BID DUE DATE: TUESDAY, MAY 9, 2017 BY 1:00 PM OUR CLOCK**

**2017 OVERLAY  
PROJECT #S-PM-01-17**

**SEALED BIDS MUST BE MAILED OR DELIVERED TO:**

City of Wheat Ridge Municipal Building  
Attention: Jennifer Nellis, CPPB  
7500 West 29<sup>th</sup> Avenue, Purchasing & Contracting Division  
Wheat Ridge, CO 80033  
303-235-2811

**IMPORTANT: PLEASE READ ENTIRE DOCUMENT**  
Per the attached specifications, terms and conditions.

FEIN/SSN (Required) \_\_\_\_\_  
Federal I.D. Number

COMPANY NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY/STATE/ZIP \_\_\_\_\_

PHONE \_\_\_\_\_ EMAIL \_\_\_\_\_

TYPED/PRINTED NAME \_\_\_\_\_

AUTHORIZED SIGNATURE \_\_\_\_\_  
This is required. Must be in ink.

TITLE \_\_\_\_\_

ACKNOWLEDGE ADDENDAS, MUST INITIAL \_\_\_\_\_ NUMBER OF ADDENDA \_\_\_\_\_  
(Bidder is responsible for following up on all addendums)

DO YOU ACCEPT VISA FOR PAYMENT? IT IS THE PREFERRED METHOD \_\_\_\_\_

**DO NOT CONTACT THE REQUESTING DEPARMENT OR MEMBER OF THE EVALUATION COMMITTEE.**

Signature acknowledges that Bidder: has read the bid documents thoroughly before submitting a bid, will fulfill the obligations in accordance to the scope of work or specifications, terms, and conditions, and is submitting without collusion with any other individual or firm. Do not submit more than one bid from your firm or both bids will be disqualified. Submit bid with authorized signature.

**Point of Contact:** Jennifer Nellis, Purchasing Agent, [jnellis@ci.wheatridge.co.us](mailto:jnellis@ci.wheatridge.co.us) or fax 303-234-5924

**MUST SUBMIT PAGE THREE / SIGNATURE PAGE WITH BID**

**INVITATION TO BID  
ITB-17-03  
2017 OVERLAY**

**Bid Due Date:** TUESDAY, MAY 9, 2017 by 1:00 pm our clock. Public Opening: City Hall, 7500 W. 29<sup>th</sup> Avenue, Wheat Ridge, CO.

**Project Number:** PROJECT #S-PM-01-17

**Scope of Work:** Provide all labor, equipment and materials for the 2017 Overlay Project. Approximate quantities include: 69,000 SY full mill, 7,825 T HMA overlay, 23,000 SF modified epoxy (recess), 14,000 SF modified epoxy & 20,000 SF temp paint. Cost Range is \$850,000 to \$1,000,000. Anticipated start date is Mid-June, 2017. Completion time is 55 working days plus days for bid alternates. Please note there are also several bid alternates that could potentially add 46,000 SY full mill, 6,800 T HMA overlay, 3,000 SF modified epoxy (recess), 11,000 SF modified epoxy & 20,000 SF temp paint, and 1,410 LF Concrete curb and Gutter. A pre-bid conference will be held on April 20<sup>th</sup> at 11:00am for this project.

**Deadline for Questions:** April 25, 2017 by noon. Submit questions by email to [jnellis@ci.wheatridge.co.us](mailto:jnellis@ci.wheatridge.co.us).

**Contractor Qualification:** Bidder must complete and submit the Contractor Qualification Form provided with the bid document. Failure to complete this form and submit with bid may result in the disqualification of the contractor. The City's acceptance of this bid shall be based on information provided by the contractor in this form. Bid amount and qualifications are evaluated subsequent to bid opening to determine the successful bidder. The City does not pre-qualify contractors.

**Disadvantaged Businesses:** Disadvantaged business enterprises are afforded full opportunity to submit bids and will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

**Labor Compliance:** Contractors shall comply with the amended provisions of CRS 8-17.5-101 regarding employment of illegal aliens to perform on public contracts. The proposer shall also confirm its compliance with the 80% Colorado labor requirement of the Keep Jobs in Colorado Act, H.B. 13-1292, including C.R.S. 8-17-101, et seq.

**Bid Bond:** A 5% bid bond is required to be submitted with the bid. Payment and performance bonds for 100% of the contract price and insurance will be required for the successful bidder.

**Submit Sealed Bids to:** City of Wheat Ridge Municipal Building  
Attn: Jennifer Nellis, CPPB  
7500 W 29<sup>th</sup> Avenue, Purchasing Division  
Wheat Ridge, CO 80033

**Mark Sealed Envelopes:** ITB-17-03, 2017 OVERLAY

**Comments:** All bids will be validated. No bids will be accepted after the bid due time. Bids received after the bid opening time will be filed unopened. The City of Wheat Ridge reserves the right to reject any and all bids or any part and to waive any formalities or informalities to make an award in the best interest of the City.

**Bid Documents:** Available on RMEPS/Bidnet at [www.rockymountainbidsystem.com](http://www.rockymountainbidsystem.com) (800-835-4603 option #2) and the City website at [www.ci.wheatridge.co.us](http://www.ci.wheatridge.co.us). Visit the City website for bid tab sheets and project updates.

**Point of Contact:** Jennifer Nellis, Purchasing Agent, [jnellis@ci.wheatridge.co.us](mailto:jnellis@ci.wheatridge.co.us) or fax 303-234-5924 or phone 303-235-2811. Do not contact the requesting department.

---

Jennifer Nellis, Purchasing Agent

**Publish Dates:**

Daily Journal: April 10, 2017  
April 17, 2017

City Web/RMEPS: April 10, 2017



## INFORMATION FOR BIDDERS

### 1.0 BID SUBMISSION REQUIREMENTS

- 1.1 Sealed Bids for **ITB-17-03, 2017 OVERLAY, PROJECT #S-PM-01-17** will be received by the City of Wheat Ridge, Office of the Purchasing Agent, 7500 W. 29th Avenue, Wheat Ridge, CO 80033, as stated in the Advertisement. BID OPENING DATE IS SET FOR TUESDAY, MAY 9, 2017 BY 1:00 PM OUR CLOCK at which time bids will be publicly opened and read aloud.

Questions about this bid shall be referred to Jennifer Nellis, Purchasing Agent, 303- 235-2811, or by fax 303-234-5924 or by email [jnellis@ci.wheatridge.co.us](mailto:jnellis@ci.wheatridge.co.us)

- 1.2 Bid Documents: available on RMEPS/Bidnet at [www.rockymountainbidsystem.com](http://www.rockymountainbidsystem.com) (800-835-4603 option #2) and the City website at [www.ci.wheatridge.co.us](http://www.ci.wheatridge.co.us) Limited hard copies are available in the Purchasing Office for a non-refundable and no returnable cost of \$25.00. Cash or check only.

The City does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of bidding documents.

The City in making copies of the bidding documents available on the terms in this Project Manual does so only for the purpose of obtaining bids on the Work and does not confer a license of grant for use.

- 1.3 Two **(2) copies** of the Project Document/Proposal must be submitted and signed. Single copies of the original bid bond will be accepted. All blank spaces for prices must be filled in, in ink or typewritten, and the Proposal Form must be fully completed and executed when submitted. In the case of discrepancies, the unit price shall govern the extension and subsequent total. No alteration in bid prices by erasures, deletions or strike-outs, will be acceptable unless each alteration is signed or initialed by the Bidder. A conditional or qualified Bid will not be accepted.

The Project Documents contain an affidavit certifying that the Bidder has not participated in any collusion or taken any action in restraint of free competitive bidding. This form must be signed and submitted with the Bid.

Names of all subcontractors and the amounts of their subcontract work shall be provided on the List of Subcontractors, as provided in this bid. If none, state "none".

- 1.4 Bids may be mailed or delivered in person, but must be in a sealed envelope. The envelope should bear on the outside the name of the project for which the Bid is submitted. No bids will be accepted after the date and time established above, except by written addendum.
- 1.5 Each Bid must be accompanied by a Bid Bond payable to the City for five percent (5%) of the total amount of the Bid. A certified check or cashier's check payable to the City of Wheat Ridge may be used in lieu of a Bid Bond. Securities may not be substituted for Bid Bonds.

Attorneys-in-Fact who sign Bid Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney.

Surety companies executing bid and performance bonds must appear on the Treasury Departments most current list (Circular 570 as amended) and be authorized to transact business in the State of Colorado.

- 1.6 A bidder may withdraw or revise a proposal after it has been deposited with the City. Withdrawal of bids may be made either in writing or in person; however, any bid withdrawn for purpose of revision must be re-deposited with the City before the time set for opening of bids. Bids may not be withdrawn after the time set for opening of bids.
- 1.7 The City assumes no responsibility for late deliveries of mail on behalf of the United States Post Office. Only sealed bids received by the Purchasing Department will be accepted. Bids submitted by telephone, facsimile machine, or by other electronic means are not acceptable.

In the event of a situation severe enough to cause the City Council to close its offices for any reason, the Purchasing Agent has the prerogative of rescheduling the bid opening time and date. No bidder will be

considered above all other bidders by having met the bid opening time and date requirements to the exclusion of those who were unable to present their bid due to the closing of City offices.

- 1.8 Issuance of this Request for Bid does not commit The City of Wheat Ridge to award any contract or to procure or contract for any equipment, materials, or services. The City further reserves the right to waive informalities or irregularities, and the right to accept or reject any and all bids, including but not limited to, any bid which does not meet bonding requirements, or bids which do not furnish the quality, or offer the availability of materials, equipment or services as required by the specifications, description or scope of services, or bids from bidders who lack experience or financial responsibility, or bids which are not to form, or to award bids to the lowest and most responsive and responsible bidder, or to require new bids.

No award will be made to any person, firm, or corporation that is in arrears upon any obligation to the City.

- 1.9 The City of Wheat Ridge is exempt from City, County, State and Federal Sales/Excise Taxes. Certificates will be issued upon request.

## 2.0 BID DOCUMENTS

- 2.1 The Contract Documents consist of the Contract Bid Documents including construction specifications, if any. The Contract Bid Documents contain the provisions required for the bidding and construction of the Project. The Owner shall provide to Bidders, prior to Bidding, all information that is pertinent to, and delineates and describes, the Work. This may occur on the plans or on a separate document.

- 2.2 Each Bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents, including Addenda. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to his Bid. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of Work or of nature of the Work to be done or any materials specified for the Work.

- 2.3 If it should appear to a Bidder that the work to be done or matters relative thereto are not sufficiently described or explained in the Contract Documents or that the Contract Documents are not definite and clear, the Bidder may make written inquiry regarding same to the Purchasing Agent at least five (5) working days or a designated date set by the Purchasing Agent, before the scheduled closing time for filing Bids. Then, if in the judgment of the Purchasing Agent, additional, information or interpretation is necessary, such information will be supplied in the form of an Addendum, and will be delivered to all individuals, firms and corporations who have received the Contract Documents. Such Addendum shall have the same binding effect as though contained in the main body of the Contract Documents. **Oral instructions or information concerning the contract documents or the project given out by officers, employees or agents of the owner to prospective bidders shall not bind the owner.** If no request is made in the five working days or the designated time, Bidder waives right to any conflict in the Contract Documents.

- 2.4 All applicable laws, ordinances and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout. Further, the Bidder agrees to abide by the following federal requirements: Executive Order No. 11246 as amended, including specifically the provisions of the Equal Opportunity Clause, the Immigration Reform and Contract Act of 1986 and the Americans with Disabilities Act of 1991.

As a recipient of Federal funds, subject to United States Department of Transportation Title VI Regulations at 49 CFR Part 21 the Civil Rights Act of 1964, the City of Wheat Ridge, and its responsible agents, contractors and consultants assure that no person shall on the grounds of race, color, or national origin be excluded from participation in the opportunity to bid, or be discriminated against in consideration of award of this project. Disadvantaged business enterprises will be afforded full opportunity to submit bids in response to all invitations subject to the Regulations. The United States has a right to seek judicial enforcement with regard to any matter arising under Title VI, 49 CFR Part 21 and assurances.

The proposer shall confirm its compliance with the 80% Colorado labor requirement of the Keep Jobs in Colorado Act, H.B, 13-1292, including C.R.S. 8-17-101, et seq.

- 2.5 **Contractor Qualification:** Bidder must complete and submit the Contractor Qualification Form provided with the bid document. Failure to complete this form and submit with bid may result in the disqualification of the contractor. The City's acceptance of this bid shall be based on information provided by the contractor in this

form. Bid amount and qualification shall be evaluated subsequent to bid opening to determine the successful bidder. The City does not pre-qualify contractors.

### 3.0 CONTRACT AWARD

- 3.1 The Owner may make such investigations as deemed necessary to determine the ability of the Bidder and Subcontractors to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted, or investigation fails to satisfy the Owner that such Bidder or any Subcontractor is properly qualified to carry out the obligations of the Agreement. If the owner rejects any Subcontractor as unqualified, the Bidder may substitute another Subcontractor for approval by the Owner but no change to the Bid Price will be allowed.
- 3.2 The Award of Contract, is anticipated, within 60 calendar days after the opening of bids to the lowest most responsive, responsible qualified bidder whose bid complies with all the requirements of this request for bids. Evaluation and award will only include the alternate if the base bid and the alternate price combined are within the advertised cost range. If more than one alternate, the order or the selection of the alternates for award is at the discretion of the City. Award is in the best interest of the City.
- 3.3 The successful bidder shall be notified of the recommendation for award and to provide two (2) signed agreements, insurance and bonds. A Performance Bond and Payment Bond, each in the amount of 100 percent (100%) of the Contract Price, with a corporate surety approved by the Owner, will be required for the faithful performance of the Contract. Securities may not be substituted for Payment or Performance Bonds. Attorneys-in-Fact who sign Payment and Performance Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney.
- 3.4 The successful bidder shall return the two copies of the executed Agreement and one acceptable Performance and Payment Bonds by a designated date. In case the Bidder fails to comply by the designated date or if the Bidder fails to provide acceptable bonds, the Owner may, at its option, consider the Bidder in default, in which case the Bid Bond accompanying the Proposal (Bid) shall become the property of the Owner.
- 3.5 The Owner, within 14 calendar days of receipt of the requirement stated in 3.3 above, shall execute the Agreement and issue the Notice to Proceed at a pre-construction meeting with the Contractor. If the Owner cannot issue the Notice to Proceed within such time period, the time period will be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the 14 calendar day period or within the period mutually agreed upon, the Contractor may terminate the Agreement, by Written Notice, without further liability on the part of either party.
- 3.6 Upon receiving notice of award, the Contractor may obtain from the City three sets of documents at no cost. Additional sets of drawings and specifications may be purchased on a cash sale basis from the City. The Contractor and the Owner will agree on the date that Work will commence which shall be within 14 calendar days of the date of the Notice to Proceed, unless a time extension is approved by the Owner.
- 3.7 Section 2-3 Of the City's Code of Laws is presented in part below:
- (a) FISCAL YEAR. Fiscal year for the City shall commence on January 1 and end on December 31st.
- (b) BUDGET CONTAINS APPROPRIATIONS. The City Council shall annually adopt a budget in a manner consistent with the provisions of Chapter X of the Home Rule Charter of the City of Wheat Ridge. Upon the annual adoption by the City Council of each year's budget, levels of authorized expenditures from the funds indicated within the annual budget itself and/or the adopting resolution shall constitute the appropriate of the amounts specified therein for the purposes specified therein. During the course of each fiscal year, approval by the City Council of contracts for goods or services, and/or approval of bids for the provision of specified goods or services, shall likewise constitute appropriations of the amounts specified therein for the purposes specified therein.
- (c) NO CONTRACT TO EXCEED APPROPRIATION. During each and any fiscal year, no contract entered into by or on behalf of the City shall expend or contract to expend any money, or incur any liability, nor shall any contract be entered into nor any bid be awarded by on behalf of the City which, by its terms, involves the expenditure of money for any of the purposes for which provision is made either in the adopted budget or adopting resolution is made either in the adopted budget or adopting resolution, including any legally authorized amendments thereto, in excess of the amount appropriated in the budget or the approved contract or bid



amount. Any contract or bid award, either verbal or written, made in violation of the provisions of this Section shall be void as to the City and no monies from any source whatsoever shall be paid thereon.

(d) AMENDMENTS AND AUTHORIZED EXPENDITURES. Nothing contained herein shall preclude the City Council from adopting supplemental appropriation in a manner consistent with the provisions of Section 10.12 of the Home Rule Charter of the City of Wheat Ridge. Further, nothing contained in this Section shall prevent the making of contracts for governmental services or for capital outlay for a period exceeding one year if such contracts are otherwise allowed by the Home Rule Charter of the City; provided, however, any contract so made shall be executory only for the amounts agreed to be paid for such services to be rendered in succeeding fiscal years.

(e) NOTICE TO PARTIES CONTRACTING WITH THE CITY. All persons contracting with or selling goods or services to, the City are hereby placed on notice of the provisions of this Section. The provisions of this Section shall become a part of the Merit System Personnel Rules and Regulations of the City of Wheat Ridge; shall be referred to specifically in all public works bid documents and contracts; and shall be incorporated into, or specifically noted within, all other contracts entered into by or on behalf of the City wherein City funds are used to pay for said contract.

3.8 Section 2-4 of the City Code of Laws is presented in part below:

(a) The City may, by contract, require the contractor awarded a public works contract to waive, release, or extinguish its rights to recover costs or damages, or to obtain an equitable adjustment, for delays in performing such contract, if such delay is caused, in whole or in part, by acts or omissions of the City or its agents, if the contract provides that an extension of time for completion of the work is the Contractors remedy for such delay. Such a clause is valid and enforceable, any provision of State Law to the contrary notwithstanding.

(b) The City Council, by this ordinance, declares its local contracting powers to be a matter of purely local concern, and further specifically intends to supersede, pursuant to its powers under Article XX of the Colorado Constitution, the provisions of Sections 24-91-101 and 103.5 C.R.S., insofar as they conflict with the provisions of this Section of the Code of Laws of the City of Wheat Ridge, Colorado.

4.0 ANTICIPATED PROJECT SCHEDULE

ITB Issued/Advertised	April 10 & April 17, 2017
Pre Bid Meeting	April 20, 2017
Deadline for Questions	April 25, 2017 by NOON
Final Addendum Issued	April 28, 2017
Bid Due Date	May 9, 2017 @ 1:00 pm
Submit CAF for City Council	May 12, 2017
City Council Award	May, 22 <sup>nd</sup> , 2017
Anticipated Start Date	Mid-June 2017
Completion Time	55 Working Days (base bid)

See more work restrictions under General Provision 16. CONSTRUCTION SCHEDULE.

4.1 Bid Alternate #1 Alleys

The work on the alleys on the east part of town will require smaller equipment due to the narrow alleys and many overhead utility lines.

Bid Alternate #2 - Mountain View – 44<sup>th</sup> Ave

This bid alternate is to pave Mountain View's portion of 44<sup>th</sup> Ave from Sheridan to Fenton. The work will be managed by the City of Wheat Ridge.

Bid Alternate # 3 32<sup>nd</sup> Ave from Kipling to Union – Lakewood

This bid alternate is to repave Lakewood portion of 32<sup>nd</sup> Ave from Union to Morning Side. If this work is included in the contract the work will be managed by the City of Wheat Ridge.

Bid Alternate # 4

This bid alternate is to pave Lakeside portion of 44th Ave from Sheridan to Harlan. The work will be managed by the City of Wheat Ridge

**Bid Alternate # 5**

This bid alternate is to reconstruct the intersection Allison and 47<sup>th</sup> Ave. Plans will be provided prior to the start of construction.

**Bid Alternate # 6**

This bid alternate is to reconstruction Union Street south of 34<sup>th</sup> Place. New curb and gutter and asphalt paving. The work will also include rip rap work on each side of Lean Gulch. Plans will be provided prior to the start of construction.

IMPORTANT: THIS FORM MUST BE COMPLETED AND SUBMITTED WITH YOUR BID

## CONTRACTOR'S QUALIFICATION FORM

Your Bid Will Not Be Processed If Incomplete

### SECTION I - IDENTIFICATION

#### 1. Identification of Applicant Firm

A. \_\_\_\_\_  
Exact Legal Name of Applicant Firm DUNS # \_\_\_\_\_

B. \_\_\_\_\_  
Address City State Zip Code

C. \_\_\_\_\_  
(Mailing Address, if different from above)

D. Primary Company Telephone No. ( ) \_\_\_\_\_ Fax No. ( ) \_\_\_\_\_

E. Applicant Firm's Contact Person for Public Works Office follow-up:

\_\_\_\_\_  
Print or Type Name Position Telephone Number

F. Has the Applicant Firm changed its address or has the Firm or its Owner(s) operated under any other name(s) including other DBAs in the past five years? If yes, explain fully on a separate sheet of paper.  
 No  Yes

G. Type of business organization: \_\_\_\_\_

YEAR organization established: \_\_\_\_\_ NUMBER of current full time employees: \_\_\_\_\_

Sole Proprietor  Corporation  
[Date and State of Incorporation \_\_\_\_\_]

Limited Partnership  General Partnership  
[Date and State of Partnership filing \_\_\_\_\_]

Limited Liability Company  Limited Liability Partnership  
[Date and State of filing \_\_\_\_\_]

Other (describe) \_\_\_\_\_

Type of service(s) to be provided to the City of Wheat Ridge.

- |   |  |
|---|--|
| <input type="checkbox"/> General Contractor | <input type="checkbox"/> Concrete Flatwork     |
| <input type="checkbox"/> Storm Sewer        | <input type="checkbox"/> Concrete Structures   |
| <input type="checkbox"/> Traffic Signals    | <input type="checkbox"/> Slurry Seal           |
| <input type="checkbox"/> Grading            | <input type="checkbox"/> Fog Seal              |
| <input type="checkbox"/> Asphalt Paving     | <input type="checkbox"/> Crack Sealing         |
| <input type="checkbox"/> Concrete Paving    | <input type="checkbox"/> Landscaping           |
| <input type="checkbox"/> Signing            | <input type="checkbox"/> Striping              |
| <input type="checkbox"/> Traffic Control    | <input type="checkbox"/> Other (describe)_____ |

**SECTION II - OWNERSHIP/MANAGEMENT, PROJECT MANAGEMENT, SUPERVISORS, AND RELATED ENTITIES**

**1. Owners**

List Owners of Applicant Firm.

Full Legal Name	Title	Years of Related Experience	% Of Ownership

[Use additional sheets if necessary]

**2. Project Management Team, Supervisors and Employees Who Will Be Working Directly On The Project(s).**

List the full names of the primary employees of the proposed Project Team.

Full Legal Name	Present Position	Years of Related Experience	% of Time Devoted to Project	Professional Licenses

[Use additional sheets if necessary]

**3. Resume**

Attach resumes of the Project Management Team showing the last five years of employment in this field. Resumes must be comprehensive and include of Firms worked for and dates of employment. (RESUMES are not required from Materials Suppliers (Vendors)).

**4. Contractor's License(s)**

The awarded Contractor must obtain or have a current City of Wheat Ridge Municipal Contractor's License within 7 days of Council approval of bid award.

**SECTION III - CONTRACTING HISTORY**

**1. Contracting History**

A. List the applicant Firm's six largest contracts in the last three years.

1. Company Name \_\_\_\_\_ Contact Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
Contract Name & Number \_\_\_\_\_  
Contract Amount \_\_\_\_\_ Start/Completion Dates \_\_\_\_\_  
Description of Work \_\_\_\_\_  
\_\_\_\_\_  
Prime or Subcontractor \_\_\_\_\_

2. Company Name \_\_\_\_\_ Contact Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
Contract Name & Number \_\_\_\_\_  
Contract Amount \_\_\_\_\_ Start/Completion Dates \_\_\_\_\_  
Description of Work \_\_\_\_\_  
\_\_\_\_\_  
Prime or Subcontractor \_\_\_\_\_

**SECTION III - CONTRACTING HISTORY – (Continued)**

3. Company Name \_\_\_\_\_ Contact Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
Contract Name & Number \_\_\_\_\_  
Contract Amount \_\_\_\_\_ Start/Completion Dates \_\_\_\_\_  
Description of Work \_\_\_\_\_  
\_\_\_\_\_  
Prime or Subcontractor \_\_\_\_\_

4. Company Name \_\_\_\_\_ Contact Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
Contract Name & Number \_\_\_\_\_  
Contract Amount \_\_\_\_\_ Start/Completion Dates \_\_\_\_\_  
Description of Work \_\_\_\_\_  
\_\_\_\_\_  
Prime or Subcontractor \_\_\_\_\_

5. Company Name \_\_\_\_\_ Contact Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
Contract Name & Number \_\_\_\_\_  
Contract Amount \_\_\_\_\_ Start/Completion Dates \_\_\_\_\_  
Description of Work \_\_\_\_\_  
\_\_\_\_\_  
Prime or Subcontractor \_\_\_\_\_

**SECTION III - CONTRACTING HISTORY – (Continued)**

6. Company Name \_\_\_\_\_ Contact Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Phone No: \_\_\_\_\_ Fax No: \_\_\_\_\_  
Contract Name & Number \_\_\_\_\_  
Contract Amount \_\_\_\_\_ Start/Completion Dates \_\_\_\_\_  
Description of Work \_\_\_\_\_  
\_\_\_\_\_  
Prime or Subcontractor \_\_\_\_\_

In the past five years has the Applicant Firm or any Affiliate been the subject of any of the following actions?

- A. Been suspended, debarred, disqualified, or otherwise declared ineligible to bid?  
 No  Yes
- B. Failed to complete a contract for a commercial, private owner or Government agency?  
 No  Yes
- C. Been denied a low-bid contract in spite of being the low bidder?  
 No  Yes
- D. Had a contract terminated for any reason, including default?  
 No  Yes
- E. Had liquidated damages assessed against it during or after completion of a contract?  
 No  Yes

If "Yes" to Sections IV, V or VI, provide details including a brief summary of cause(s) of action, indicate if Applicant Firm, Owner or Affiliate Firms were plaintiffs (P) or defendants (D); define charges explicitly, by what authority, court or jurisdiction, etc. Complete details are required!

NOTE: For Sections IV and V below, the definition of an "investigation" includes: an appearance before a grand jury by representatives of the Firm; any oral or written inquiry or review of the Firm's documents by a governmental or law enforcement agency or investigative agency; or questioning of employees concerning the general operation or a specific project or activities of the Firm

## SECTION IV - CIVIL ACTIONS

### 1. Violations Of Civil Law

In the past five years has Applicant Firm, any of its Owners, or any Affiliate been the subject of an investigation of any alleged violation of a civil antitrust law, or other federal, state or local civil law?

No

Yes

### 2. Lawsuits With Public Agencies

At the present time is, or during the past five years has the Applicant Firm, any of its Owners, or any Affiliate been a plaintiff or defendant in any lawsuit regarding services or goods provided to the City of Wheat Ridge or to a public agency?

No

Yes

### 3. Bankruptcy

During the past five years, has the Applicant Firm or any Affiliate filed for bankruptcy or reorganization under the bankruptcy laws?

No

Yes

### 4. Judgments, Liens And Claims

During the past five years, has the Applicant Firm been the subject of a judgment, lien or claim of \$10,000 or more by a subcontractor or supplier?

No

Yes

### 5. Tax Liens

During the past five years, has the Applicant Firm been the subject of a tax lien by federal, state or any other tax authority?

No

Yes

## SECTION V - COMPLIANCE WITH LAWS AND OTHER REGULATIONS

### 1. Criminal

In the past five years has the Applicant Firm, any of its Owners, or Affiliates:

A. Been the subject of an investigation involving any alleged violation of criminal law?

No

Yes

B. Been arrested, indicted or named as an unindicted co-conspirator in any indictment or other accusatory instrument?

No

Yes

C. Been convicted, after trial or by plea, of any felony under state or federal law?

No

Yes

D. Been convicted of any misdemeanor involving business-related crimes?

No

Yes

E. Entered a plea of nolo contendere to a charge of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or a violation of any antitrust laws?

No

Yes

F. Entered into a consent decree?

No

Yes

G. Been granted immunity from prosecution for any business-related conduct constituting a crime under state or federal law?

No

Yes

H. Taken the Fifth Amendment in testimony on any business-related crime?

No

Yes

I. Paid a fine or settlement to resolve any criminal or civil violations or allegations involving a business activity?

No

Yes



J. Do any Owners in Applicant Firm have any felony charges pending against them that were filed either before, during, or after their employment with the Applicant Firm?

No

Yes

### 1. Regulatory Compliance

In the past five years, has Applicant Firm, any of its Owners, or Affiliates been cited for:

A. A violation of any labor law or regulation, including prevailing wage rates and fair labor practices?

No

Yes

B. An OSHA violation?

No

Yes

C. A violation of federal, state or local environmental laws or regulations?

No

Yes

D. Any other administrative, statutory or regulatory violations?

No

Yes

## SECTION VI - ETHICS

### 1. False Statements, Bribes, Collusion

In the past five years has the Applicant Firm, any of its Owners, or Affiliates:

A. Filed with a government body (including City of Wheat Ridge) or submitted to a government employee (including City of Wheat Ridge employee) any form of document known by the Applicant Firm, any of its Owners, or by the person submitting the document, to contain false information?

No

Yes

B. Created or maintained false business records?

No

Yes

C. Given, or offered to give, money or any other benefit to a public official or employee with intent to influence that person regarding any of their official acts, duties or decisions?

No

Yes

D. Given, or offered to give, money or other benefit to an official or employee of a private business with intent to induce that official or employee to engage in unethical or illegal business activities (including but not limited to improper gratuities, and/or violations of lobbying regulations)?

No

Yes

E. Agreed with another to bid below prevailing market rate?

No

Yes

F. Agreed with another to submit identical or complimentary bids or otherwise not to bid competitively?

No

Yes

G. Agreed with another not to submit competitive bids in another's territory established either by geography or customers?

No

Yes

H. Agreed with another to take turns in obtaining contracts by pre-determining which Firm shall submit the lowest bid?

No

Yes

**1. Conflict Of Interest**

- A. Does the Applicant Firm, any of its Owners or Project Team Members have any existing relationships that could be construed as either personal or organizational conflicts of interest, or which would give rise to a conflict if Applicant Firm should be a recipient of a contract with the City of Wheat Ridge?  
 No  Yes
  
- B. Has any Owner or Project Team member of Applicant Firm ever (if yes explain fully):
  - 1. Been an employee of the City of Wheat Ridge, or served as a Member of Wheat Ridge City Council?  
 No  Yes
  
  - 2. Been related by blood or marriage to a City of Wheat Ridge employee or Council Member?  
 No  Yes

**SECTION VII - ADDITIONAL DOCUMENTATION REQUIRED**

**Additional document copies to be submitted with this application:**

Letter of Reference from your Firm's Surety, which states current available aggregate and single project bonding capacity (This Application will not be processed without this letter)

List of Major Equipment by number and type available for the Project(s).

Certification of all IMSA certified personnel, if applying for traffic signal project(s). A minimum of two full time employees must be certified at Level II or higher.

**PROPOSAL FORM  
ITB-17-03  
2017 OVERLAY  
PROJECT #S-PM-01-17**

This is the Proposal (Bid) of \_\_\_\_\_ (hereinafter called "BIDDER") or organized and existing under the laws of the State of \_\_\_\_\_ doing business as a \_\_\_\_\_ (Insert "a corporation", "a partnership", or "an individual" as applicable.)

To the CITY OF WHEAT RIDGE (hereinafter called "Owner").

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Contract Bid Documents, to complete all Work as specified or indicated in the Contract Bid Documents for the Contract Sum and within the Contract time indicated in accordance with the Contract Bid Documents.

Bidder accepts all of the terms and conditions of the Instructions to Bidders. The Bid will remain open for sixty days after the day of Bid opening. Bidder will sign the Agreement and submit any documents required by the Contract documents within seven (7) calendar days after notification or the designated date.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid, each party thereto certifies as to his own organization, that this Bid has been arrived at independently without consultation, or communication with any competitor. Every bid submitted to the City shall contain a statement certifying that the Bidder has not participated in any collusion or taken any action in restraint of free competitive bidding. This statement shall be in the form of an affidavit provided by the City and included in the Bid Proposal. The Bidders proposal will be rejected if it does not contain the completed Non-collusion Affidavit.

Bidder agrees to abide by the following federal requirements:

Executive Order No. 11246 as amended, including specifically, the provisions of the Equal Opportunity Clause, the Immigration Reform and Contract Act of 1986, and the Americans with Disabilities Act of 1991.

United States Department of Transportation Title VI Regulations at 49 CFR Part 21 the Civil Rights Act of 1964, assuring that no person shall on the grounds of race, color, or national origin be excluded from participation in the opportunity to bid, or be discriminated against in consideration of award of this project.

Bidder hereby agrees to commence Work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project within **55 working days**. The following working days will be added to the contractor should we award any of the bid alternate. Bid Alternate 1 **15 working days**. Bid Alternate 2 **5 working days** Bid Alternate 3 **15 working days** Bid Alternate 4 **5 working days** Bid Alternate 5 **5 working days** Bid Alternate 6 **20 working days**

The Notice to Proceed shall be issued within fourteen (14) days of the execution of the Agreement by the Owner. Should there be reason why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Agreement.

Bidder has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress, or performance of the Work and has made such independent investigation as Bidder deems necessary.

Bidder will complete the Work for all accepted bid items.

**PROPOSAL FORM, CONTINUED**  
**ITB-17-03**  
**PRICING SCHEDULE**

Provide all materials, labor, and equipment to complete the work as per the specifications. It is the Owner's intent to award a single contract to the lowest qualified bidder.

Project: 2017 OVERLAY, PROJECT #S-PM-01-17

---

Company Name Date

---

Authorized Signature Title

---

Printed Name

---

Title

---

License No. Type Expiration Date

ATTEST:

---

Printed Name

---

Signature Title

SEAL  
(If bid is by corporation)

ADDENDA

Bidder acknowledges receipt of the following Addenda:

---



---

**BID SCHEDULE**      COMPANY SUBMITTING BID \_\_\_\_\_  
**ITB-17-03**  
**PROJECT #S-PM-01-17**

Bidder agrees to perform all the work described in the Contract Documents for the following unit prices or lump sums.

<b>ITEM NO.</b>	<b>PAY ITEM</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
202A	Asphalt Planing (1 1/4" – 2 3/4")	69,000	SY	\$ _____	\$ _____
210A	Adjust Manhole to Grade	90	EA	\$ _____	\$ _____
210B	Adjust Valve Box to Grade	85	EA	\$ _____	\$ _____
210C	Reconstruct Manhole	3	EA	\$ _____	\$ _____
403A	HMA 1 1/2"-2" Overlay SP-100 PG (64-22) SX 1/2"	7,825	TON	\$ _____	\$ _____
403B	HMA Patching CIP 4" SP-100 PG (64-22) SX	500	SY	\$ _____	\$ _____
403C	HMA Patching CIP 6" SP-100 PG (64-22) S	250	SY	\$ _____	\$ _____
620	Sanitary Facility	1	EA	\$ _____	\$ _____
626	Mobilization	1	LS	\$ _____	\$ _____
627A	Mark Arrow Straight (15.5 SF) Tape (Recess)	14	EA	\$ _____	\$ _____
627B	Mark Arrow Right (15.5 SF) Tape (Recess)	10	EA	\$ _____	\$ _____
627C	Mark Arrow Left (15.5 SF) Tape (Recess)	54	EA	\$ _____	\$ _____
627D	White Marking Tape (4")(Recess)	1,300	LF	\$ _____	\$ _____
627E	White Marking Tape (8")(Recess)	2,250	LF	\$ _____	\$ _____
627F	White Marking Tape (12")(Recess)	100	LF	\$ _____	\$ _____
627G	White Marking Tape (24")(Recess)	1,360	LF	\$ _____	\$ _____
627H	White Pave Mark Modified Epoxy	1,000	SF	\$ _____	\$ _____
627I	Yellow Pave Mark Modified Epoxy	1,000	SF	\$ _____	\$ _____
627J	White Pave Mark Modified Epoxy (Recess)	5,000	SF	\$ _____	\$ _____
627K	Yellow Pave Mark Modified Epoxy (Recess)	18,000	SF	\$ _____	\$ _____

627L	White Pavement Marking (Temp)	5,000	SF	\$	\$
627M	Yellow Pavement Marking (Temp)	7,000	SF	\$	\$
627N	White Marking "ONLY" 8' TAPE (Recess)	3	EA	\$	\$
630A	Traffic Control Management	1	LS	\$	\$
630B	Work Zone Towing	5	EA	\$	\$
720	Material Sampling & Testing	1	LS	\$	\$
SUBTOTAL THIS PAGE				\$	\$

COMPANY SUBMITTING BID \_\_\_\_\_

TOTAL AMOUNT OF BID \$ \_\_\_\_\_

WRITTEN OUT AMOUNT OF BID \_\_\_\_\_

**BID ALTERNATE #1 – ALLEY'S**

<b>ITEM NO.</b>	<b>PAY ITEM</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
202A	Asphalt Planing (3")	14,595	SY	\$	\$
210A	Adjust Manhole to Grade	37	EA	\$	\$
403A	HMA 3" Overlay SP-100 PG (64-22) S ¾"	2,565,	TON	\$	\$
403C	HMA Patching CIP 6" SP-100 PG (64-22) S ¾"	125	SY	\$	\$
620	Sanitary Facility	1	EA	\$	\$
626	Mobilization	1	LS	\$	\$
630A	Traffic Control Management	1	LS	\$	\$
720	Material Sampling & Testing	1	LS	\$	\$
SUBTOTAL BID ALTERNATE #1				\$	\$

TOTAL AMOUNT OF BID ALT #1 \$ \_\_\_\_\_

WRITTEN OUT AMOUNT OF BID ALT #1 \_\_\_\_\_

**BID ALTERNATE #2 – MOUNTAIN VIEW – 44<sup>TH</sup> AVE**

<b>ITEM NO.</b>	<b>PAY ITEM</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
202A	Asphalt Planing (2")	4,960	SY	\$ _____	\$ _____
210A	Adjust Manhole to Grade	5	EA	\$ _____	\$ _____
210B	Adjust Valve Box to Grade	3	EA	\$ _____	\$ _____
403A	HMA 2" Overlay SP-100 PG (64-22) S ¾"	580	TON	\$ _____	\$ _____
403C	HMA Patching CIP 9" SP-100 PG (64-22) S	20	SY	\$ _____	\$ _____
614	Traffic Loop 6' x 40'	3	EA	\$ _____	\$ _____
627C	Mark Arrow Left (15.5 SF) Tape (Recess)	4	EA	\$ _____	\$ _____
627F	White Marking Tape (8")(Recess)	260	LF	\$ _____	\$ _____
627G	White Marking Tape (24")(Recess)	185	LF	\$ _____	\$ _____
627J	White Pave Mark Modified Epoxy (Recess)	400	SF	\$ _____	\$ _____
627K	Yellow Pave Mark Modified Epoxy (Recess)	1,400	SF	\$ _____	\$ _____
627L	White Pavement Marking (Temp)	575	SF	\$ _____	\$ _____
627M	Yellow Pavement Marking (Temp)	1,400	SF	\$ _____	\$ _____
620	Sanitary Facility	1	EA	\$ _____	\$ _____
626	Mobilization	1	LS	\$ _____	\$ _____
630A	Traffic Control Management	1	LS	\$ _____	\$ _____
720	Material Sampling & Testing	1	LS	\$ _____	\$ _____
SUBTOTAL BID ALTERNATE #2				\$ _____	
TOTAL AMOUNT OF BID ALT #2 \$				_____	
WRITTEN OUT AMOUNT OF BID ALT #2				_____	

**BID ALTERNATE #3 – LAKEWOOD – WEST 32<sup>ND</sup> AVE**

<b>ITEM NO.</b>	<b>PAY ITEM</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
202A	Asphalt Planing (2")	19,345	SY	\$ _____	\$ _____
210A	Adjust Manhole to Grade	13	EA	\$ _____	\$ _____
210B	Adjust Valve Box to Grade	19	EA	\$ _____	\$ _____
403A	HMA 2" Overlay SP-100 PG (64-22) S ¾"	2,300	TON	\$ _____	\$ _____
614	Traffic Loop 6' x 40'	1	EA	\$ _____	\$ _____
627C	Mark Arrow Left (15.5 SF) Tape (Recess)	26	EA	\$ _____	\$ _____
627D	White Marking Tape (4")(Recess)	4,525	LF	\$ _____	\$ _____
627O	Yellow Marking Tape (4")(Recess)	9,450	LF	\$ _____	\$ _____
627F	White Marking Tape (8")(Recess)	125	LF	\$ _____	\$ _____
627G	White Marking Tape (24")(Recess)	310	LF	\$ _____	\$ _____
627L	White Pavement Marking (Temp)	1,670	SF	\$ _____	\$ _____
627M	Yellow Pavement Marking (Temp)	6,500	SF	\$ _____	\$ _____
620	Sanitary Facility	1	EA	\$ _____	\$ _____
626	Mobilization	1	LS	\$ _____	\$ _____
630A	Traffic Control Management	1	LS	\$ _____	\$ _____
720	Material Sampling & Testing	1	LS	\$ _____	\$ _____
SUBTOTAL BID ALTERNATE #3				\$ _____	
TOTAL AMOUNT OF BID ALT #3 \$				_____	
WRITTEN OUT AMOUNT OF BID ALT #3				_____	



**BID ALTERNATE #4 – LAKESIDE – WEST 44<sup>TH</sup> AVE**

<b>ITEM NO.</b>	<b>PAY ITEM</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
202A	Asphalt Planing (2")	6,215	SY	\$ _____	\$ _____
210A	Adjust Manhole to Grade	2	EA	\$ _____	\$ _____
210B	Adjust Valve Box to Grade	2	EA	\$ _____	\$ _____
403A	HMA 2" Overlay SP-100 PG (64-22) SX 1/2'	730	TON	\$ _____	\$ _____
627C	Mark Arrow Left (15.5 SF) Tape (Recess)	5	EA	\$ _____	\$ _____
627G	White Marking Tape (24")(Recess)	205	LF	\$ _____	\$ _____
627J	White Pave Mark Modified Epoxy (Recess)	975	SF	\$ _____	\$ _____
627K	Yellow Pave Mark Modified Epoxy (Recess)	240	SF	\$ _____	\$ _____
627L	White Pavement Marking (Temp)	975	SF	\$ _____	\$ _____
627M	Yellow Pavement Marking (Temp)	240	SF	\$ _____	\$ _____
620	Sanitary Facility	1	EA	\$ _____	\$ _____
626	Mobilization	1	LS	\$ _____	\$ _____
630A	Traffic Control Management	1	LS	\$ _____	\$ _____
720	Material Sampling & Testing	1	LS	\$ _____	\$ _____
SUBTOTAL BID ALTERNATE #4				\$ _____	
TOTAL AMOUNT OF BID ALT #4 \$				_____	
WRITTEN OUT AMOUNT OF BID ALT #4				_____	

**BID ALTERNATE #5 – 47<sup>TH</sup> & ALLISON**

<b>ITEM NO.</b>	<b>PAY ITEM</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
201	Clearing and Grubbing	1	LS	\$ _____	\$ _____
202A	Removal of Obstructions and Debris	1	LS	\$ _____	\$ _____
202B	Asphalt Planing (2")	625	SY	\$ _____	\$ _____
202G	Removal of Tree (Includes Stump)<12"CAL	1	EA	\$ _____	\$ _____
207	Topsoil	25	CY	\$ _____	\$ _____
210A	Adjust Manhole to Grade	2	EA	\$ _____	\$ _____
210B	Adjust Valve Box to Grade (Concrete)	1	EA	\$ _____	\$ _____
210C	Reset Traffic Sign	1	EA	\$ _____	\$ _____
211B	Sod (Furnish & Install)	250	SY	\$ _____	\$ _____
403A	HMA 2" Overlay SP-100 PG (64-22) SX 1/2'	75	TON	\$ _____	\$ _____
608A	Sidewalk Vertical Ramp	2	EA	\$ _____	\$ _____
608B	Sidewalk Chase (4') Remove & Replace	1	EA	\$ _____	\$ _____
609A	Mountable Curb, Gutter & Walk (6' 6")	360	LF	\$ _____	\$ _____
620	Sanitary Facility	1	EA	\$ _____	\$ _____
626	Mobilization	1	LS	\$ _____	\$ _____
627K	Yellow Pave Mark Modified Epoxy (Recess)	300	SF	\$ _____	\$ _____
627G	White Marking Tape (24")(Recess)	100	LF	\$ _____	\$ _____
630A	Traffic Control Management	1	LS	\$ _____	\$ _____
720	Material Sampling & Testing	1	LS	\$ _____	\$ _____
SUBTOTAL BID ALTERNATE #5				\$ _____	
TOTAL AMOUNT OF BID ALT #5 \$				_____	
WRITTEN OUT AMOUNT OF BID ALT #5				_____	

**BID ALTERNATE #6 – UNION STREET RECONSTRUT 34TH PLACE**

<b>ITEM NO.</b>	<b>PAY ITEM</b>	<b>ESTIMATED QUANTITY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
201	Clearing and Grubbing	1	LS	\$ _____	\$ _____
203	Unclassified Excavation (CIP) 6" Concrete	1,500	SY	\$ _____	\$ _____
304	Aggregate Base CL 6 CIP 6" Concrete	250	CY	\$ _____	\$ _____
403A	HMA 2" Top Lift SP-100 PG (64-22) SX 1/2"	175	TON	\$ _____	\$ _____
403D	HMA 4" Bottom lifts SP-100 PG (64-22) S 3/4'	350	SY	\$ _____	\$ _____
506	Rip Rap 12"	45	CY	\$ _____	\$ _____
608A	Sidewalk Vertical Ramp	2	EA	\$ _____	\$ _____
608B	Sidewalk Chase (4') Remove & Replace	1	EA	\$ _____	\$ _____
608C	Sidewalk Ramp (Type 1A)	1	EA	\$ _____	\$ _____
608D	Concrete Sidewalk (6")	10	SY	\$ _____	\$ _____
609B	Vertical Curb & Gutter (6")	1,050	LF	\$ _____	\$ _____
620	Sanitary Facility	1	EA	\$ _____	\$ _____
625	Construction Surveying	1	LS	\$ _____	\$ _____
626	Mobilization	1	LS	\$ _____	\$ _____
630A	Traffic Control Management	1	LS	\$ _____	\$ _____
720	Material Sampling & Testing	1	LS	\$ _____	\$ _____
SUBTOTAL BID ALTERNATE #6				\$ _____	
TOTAL AMOUNT OF BID ALT #6 \$				_____	
WRITTEN OUT AMOUNT OF BID ALT #6				_____	



**CITY OF WHEAT RIDGE, CO**  
**NON-DISCRIMINATION ASSURANCE FORM**  
**TITLE VI REGULATIONS AT 49 CFR PART 21**

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color or national origin by any entity receiving federal financial assistance.

The City of Wheat Ridge is a recipient of Federal financial assistance and as such, it—as well as all of its responsible agents, contractors and consultants—is required by the United States Department of Transportation Title VI Regulations at 49 CFR Part 21 (the Regulations) to assure nondiscrimination. The City of Wheat Ridge assures that no person shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination on the grounds of race, color, or national origin under any program or activity conducted by the City.

All bidders are hereby notified that the City of Wheat Ridge will affirmatively ensure that disadvantaged business enterprises will be afforded full opportunity to submit bids in response to all invitations and will not be discriminated against on the grounds of race, color or national origin in consideration for an award. This applies to all solicitations for bids for work or material subject to the Regulations, and for all proposals for negotiated agreements.

The bidder, whose name and signature appear below, certifies and agrees as follows:

1. The bidder shall comply with the provisions of Title VI of the Civil Rights Act of 1964.
2. The bidder assures the City of Wheat Ridge that disadvantaged business enterprises are afforded full opportunity to submit bids as sub-contractors or sub-consultants and will not be discriminated against on the grounds of race, color or national origin in consideration for award.
3. The bidder shall comply with all reasonable requests made in the course of an investigation of Title VI, the Regulations and this assurance by the Colorado Department of Transportation, the US Department of Transportation or the City of Wheat Ridge, as a sub-recipient of Federal financial assistance.
4. The bidder agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under Title VI, the Regulations and this assurance.

FIRM: \_\_\_\_\_  
(Print full legal name of company)

AUTHORIZED SIGNATURE: \_\_\_\_\_

Printed Name and Title: \_\_\_\_\_

Date Certified and Agreed: \_\_\_\_\_

Attestation: (A corporate attestation is required)

Place corporate seal below:

BY: \_\_\_\_\_  
Corporate Secretary or Equivalent

***Bidder must complete and SUBMIT this form with your bid/proposal or will be considered Non-Responsive and/or Non-Responsive and therefore disqualified from bidding.***

**CITY OF WHEAT RIDGE, CO**  
**CERTIFICATION STATEMENT FOR**  
**ILLEGAL ALIENS, COMPLIANCE TO HB 1343**

The Vendor, whose name and signature appear below, certifies and agrees as follows:

1. The Vendor shall comply with the provisions of CRS 8-17.5-101 et seq.
2. The Vendor shall not knowingly employ or contract with an illegal alien to perform work under this purchase order or enter into a contract with a subcontractor that knowingly employs or contracts with an illegal alien.
3. The Vendor represents, warrants, and agrees that it (i) has verified that it does not employ any illegal aliens, through participation in the Basic Pilot Employment Verification Program administered by the Social Security Administration and Department of Homeland Security, or (ii) otherwise shall comply with the requirements of CRS 8-17.5-102(2)(b)(I).
4. The Vendor shall comply with all reasonable requests made in the course of an investigation by the Colorado Department of Labor and Employment. If the Vendor fails to comply with any requirement of this provision or CRS 8-17.5-101 et seq., the City may terminate the above referenced purchase order for breach and the Vendor shall be liable for actual and consequential damages to the City of Wheat Ridge.

CERTIFIED and AGREED to this \_\_\_\_\_ day of \_\_\_\_\_, 2017

BID NUMBER: \_\_\_\_\_

FIRM: \_\_\_\_\_  
(Print Full Legal Name)

Authorized Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_ Date: \_\_\_\_\_

Attestation: (A corporate attestation is required.)

BY: \_\_\_\_\_ Place corporate seal here, if applicable  
Corporate Secretary or Equivalent

***Bidder must complete and SUBMIT this form with bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.***

**CITY OF WHEAT RIDGE, CO**  
**CERTIFICATION STATEMENT FOR**  
**KEEP JOBS IN COLORADO ACT (80% Colorado Labor),**  
**COMPLIANCE TO H.B. 13-1292**

Effective January 1, 2014, the Keep Jobs in Colorado Act requires that Colorado labor be employed to perform at least 80% of the work on a public works project, as defined in C.R.S. 8-19-102(2).

**References**

Keep Jobs in Colorado Act - 8-17-101, et.seq., C.R.S.

Definition of Public Projects - 8-19-102, C.R.S.

Construction Bidding for Public Projects – 24-92-102, C.R.S.

House Bill 13-1292, Keep Jobs in Colorado Act

The Vendor, whose name and signature appear below, certifies and agrees as follows:

1. The Vendor shall comply with the provisions of House Bill 13-1291 and CRS 8-17-101 et seq.
  
2. The Vendor represents, warrants, and agrees that it (i) Colorado labor will be employed to perform at least 80% of the work on a public works project, or (ii) otherwise, shall comply with the notification requirements and/or waiver request of CRS 8-17-101 et seq.
  
3. The Vendor shall comply with all reasonable requests made in the course of an investigation by the Colorado Department of Labor and Employment. If the Vendor fails to comply with any requirement of this Act or CRS 8-17-101 et seq., the City may terminate the above referenced purchase order for breach and the Vendor shall be liable for actual and consequential damages to the City of Wheat Ridge.

CERTIFIED and AGREED to this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

BID NUMBER: \_\_\_\_\_

FIRM: \_\_\_\_\_  
(Print Full Legal Name)

**AUTHORIZED SIGNATURE:** \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_ Date: \_\_\_\_\_

Attestation: (A corporate attestation is required.)

BY: \_\_\_\_\_  
Corporate Secretary or Equivalent

Place corporate seal here, if applicable

***Bidder must complete and SUBMIT this form with bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.***

**CITY OF WHEAT RIDGE, CO**  
**NON-COLLUSION AFFIDAVIT**  
**ITB-17-03 2017 OVERLAY**  
**S-PM-01-17**

COMPANY SUBMITTING BID \_\_\_\_\_

STATE OF: \_\_\_\_\_

COUNTY OF: \_\_\_\_\_

\_\_\_\_\_ of lawful age, being duly sworn, on oath says that (s)he is the agent authorized by the Bidder to submit the attached bid. Affidavit further states that the Bidder has not been a party of any collusion among Bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or any Federal, State or Municipal official or employees as to quantity, quality, or price in the prospective Contract, or any other items of said prospective Contract; or in any discussions between bidders and any Federal, State or Municipal official concerning exchange of money or other thing of value for special consideration in the letting of a Contract.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 2017

\_\_\_\_\_  
NOTARY PUBLIC SIGNATURE

My Commission Expires:

***Bidder must complete and SUBMIT this form with bid/proposal or will be considered Non-Responsive and/or Non-Responsible and therefore disqualified from bidding.***



**BID BOND FORM**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

\_\_\_\_\_

(name and address of Contractor)

as Principal, and

\_\_\_\_\_

(name and address of surety)

as Surety, are hereby held and firmly bound unto the City of Wheat Ridge 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.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

The condition of the above obligation is such that whereas the Principal has submitted to the City of Wheat Ridge a certain BID, attached hereto and hereby made a part hereof, to enter a contract in writing for the Project titled **ITB-17-03, 2017 OVERLAY, PROJECT #S-PM-01-17**

NOW, THEREFORE,

- (a) If said Bid shall be rejected or,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with the said Bid) and shall furnish a Bond for his faithful performance of said Contract, and for the payment for all persons performing labor or furnishing materials in connection therewith, 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 an 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, 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/Contractor)

\_\_\_\_\_  
(Surety)

By: \_\_\_\_\_

**IMPORTANT:** Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

**CITY OF WHEAT RIDGE  
ITB-17-03  
2017 OVERLAY  
PROJECT #S-PM-01-17  
SAMPLE AGREEMENT**

THIS AGREEMENT, made this \_\_\_ day of \_\_\_\_\_ 2017 by and between the City of Wheat Ridge, Colorado, hereinafter called "Owner" and \_\_\_\_\_, doing business as an individual, whose business address is \_\_\_\_\_, hereinafter called "Contractor".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned the parties agree as follows:

1. The Contractor agrees to furnish all materials, supplies, tools, equipment, labor and other services necessary to complete the construction of the Project titled, **ITB-17-03, 2017 OVERLAY, PROJECT #S-PM-01-17** in accordance with the Contract Bid Documents.
2. The Contractor agrees to perform all the Work described in the Contract Bid Documents and comply with the terms therein for the Total Contract amount of \_\_\_\_\_ **DOLLARS (\$ \_\_\_\_\_)** which includes any alternates.
3. The Contractor agrees to commence the Work required by the Contract Documents within **Fourteen (14)** calendar days after the date of the Notice to Proceed and to complete the same within **55 WORKING DAYS** after the date of the Notice to Proceed unless the time for completion is extended otherwise by written changes to the Contract Bid Documents.
4. The term "CONTRACT BID DOCUMENTS" means and includes the following:

<ul style="list-style-type: none"> <li>A Signature Page</li> <li>B Advertisement for Bids</li> <li>C Information for Bidders</li> <li>D Contractor Qualification</li> <li>E Bid Form</li> <li>F Bid Schedule</li> <li>G List of Subcontractors</li> <li>H Non-Discrimination Assurance</li> <li>I Illegal Alien Certification</li> <li>J Non-Collusion Affidavit</li> </ul>	<ul style="list-style-type: none"> <li>K Bid Bond</li> <li>L Agreement</li> <li>M Payment Bond</li> <li>N Performance Bond</li> <li>O Notice to Proceed</li> <li>P Final Receipt</li> <li>Q Project Special Provisions</li> <li>R General Provisions</li> <li>Q Addenda</li> <li>S Drawings/Exhibits</li> <li>T Keep Jobs in Colorado Certification</li> </ul>
---	--
5. The Owner will pay to the Contractor in the manner and at such times as set forth in the General Conditions, such amounts as required by the Contract Documents.
6. Section 2-3 of the City's Code of Laws is presented below:
  - (a) **FISCAL YEAR.** Fiscal year for the City shall commence on January 1 and end on December 31.
  - (b) **BUDGET CONTAINS APPROPRIATIONS.** The City Council shall annually adopt a budget in a manner consistent with the provisions of Chapter X of the Home Rule Charter of the City of Wheat Ridge. Upon the annual adoption by City Council of each year's budget, levels of authorized expenditures from the funds indicated within the annual budget itself and/or the adopting resolution shall constitute the appropriation of the amounts specified therein for the purposes specified therein. During the course of each fiscal year, approval by the City Council of contracts for goods or services, and/or approval of bids for the provision of specified goods or services, shall likewise constitute appropriations of the amounts specified therein for the purposes specified therein.
  - (c) **NO CONTRACT TO EXCEED APPROPRIATION.** During each and any fiscal year, no contract entered into by or on behalf of the City shall expend or contract to expend any money, or incur any liability, nor shall any contract be entered into nor any bid be awarded by on behalf of the City which, by its terms, involves the expenditure of money for any of the purposes for which provision is made either

in the adopted budget or adopting resolution is made either in the adopted budget or adopting resolution, including any legally authorized amendments thereto, in excess of the amount appropriated in the budget or the approved contract or bid amount. Any contract or bid award, either verbal or written, made in violation of the provisions of this Section shall be void as to the City and no City monies from any source whatsoever shall be paid thereon.

- (d) **AMENDMENTS AND AUTHORIZED EXPENDITURES.** Nothing contained herein shall preclude the City Council from adopting supplemental appropriation in a manner consistent with the provisions of Section 10.12 of the Home Rule Charter of the City of Wheat Ridge. Further, nothing contained in this Section shall prevent the making of contracts for governmental services or for capital outlay for a period exceeding one year if such contracts are otherwise allowed by the Home Rule Charter of the City; provided, however, any contract so made shall be executory only for the amounts agreed to be paid for such services to be rendered in succeeding fiscal years.

The City Manager is authorized to review and approve change orders and modifications up to ten (10%) percent of the original contract amount.

- (e) **NOTICE TO PARTIES CONTRACTING WITH THE CITY.** All persons contracting with, or selling goods or services to, the City are hereby placed on notice of the provisions of this Section. The provisions of this Section shall become a part of the Merit System Personnel Rules and Regulations of the City of Wheat Ridge; shall be referred to specifically in all public works bid documents and contracts; and shall be incorporated into, or specifically noted within, all other contracts entered into by or on behalf of the City where-in City funds are used to pay for said contract.

- (f) The City may, by contract, require the contractor awarded a public works contract to waive, release or extinguish it rights to recover costs or damages, or obtain an equitable adjustment, for delays in performing such contract, if such delay is caused, in whole or part, by acts or omissions of the City or its agents, if the contract provides that an extension of time for completion of the work is the Contractor's remedy for such delay. Such a clause is valid and enforceable, any provision of State Law to the contrary not withstanding.

- (g) The City Council, by this ordinance, declares its local contracting powers to be a matter of purely local concern, and further specifically intends to supersede, pursuant to its powers under Article XX of the Colorado Constitution, the provisions of Sections 24-91-101 and 103.5, C.R.S., insofar as they conflict with the provisions of this Section of the Code of Laws of the City of Wheat Ridge, Colorado.

**7. NOTICES**

Any notice or communication given pursuant to this Agreement to the City shall be made in writing:

<b>City Contact:</b>	<b>Contractor Contact:</b>
Name:	Name:
Address:	Address:
E-mail:	Fax:
Phone:	Phone:
Fax:	Fax:

- 8. The Contractor agrees to abide by the requirements under EXECUTIVE ORDER NO. 11246 as amended, including specifically the provisions governed by the Equal Opportunity Commission and also to abide by the requirements of the IMMIGRATION REFORM AND CONTRACT ACT OF 1986 and the requirements of the AMERICANS WITH DISABILITIES Act of 1991; and the United States Department of Transportation Title VI Regulations at 49 CFR Part 21 requirements under the Civil Rights Act of 1964, assuring that no person shall on the grounds of race, color, or national origin be excluded from participation in the opportunity to bid, or be discriminated against in consideration of award of this project.

- 9. In accordance with CRS Title 24, Article 91, Section 103.6, Paragraph 2, Subparagraph a, the City of Wheat Ridge hereby states that funds have been appropriated for this Project in an amount equal to or in excess of the Original Contract Amount.

- 10. Illegal Aliens – Public Contracts for Services. CRS 8-17.5-101 and Public Law 208, 104<sup>th</sup> Congress, as amended and expanded in Public Law 156, 108<sup>th</sup> Congress, as amended:

The Contactor certifies that he/she shall comply with the provisions of CRS 8-17.5-101 et seq. The Contractor shall not knowingly employ or contract with an illegal alien to perform work under this contract or enter into a contract with a subcontractor that knowingly employs or contracts with an illegal alien. The Contractor represents, warrants, and agrees that it (i) has verified that it does not employ any illegal aliens, through participation in the Basic Pilot Employment Verification Program administered by the Social Security Administration and Department of Homeland Security, or (ii) otherwise will comply with the requirements of CRS 8-17.5-101 (2)(b)(i). The Contractor shall comply with all reasonable requests made in the course of an investigation by the CO Department of Labor and Employment. If the Contractor fails to comply with any requirement of this provision or CRS 8-17.5-101 et seq., the City may terminate this contract for breach and the Contractor shall be liable for actual and consequential damages to the City.

11. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in **Two (2) copies**, each of which shall be deemed an original on the date first above written.

**ATTEST:**

\_\_\_\_\_  
JANELLE SHAVER, CITY CLERK

\_\_\_\_\_  
DATE

**OWNER**

CITY OF WHEAT RIDGE  
7500 WEST 29TH AVENUE  
WHEAT RIDGE, CO 80033  
303-234-5900

\_\_\_\_\_  
JOYCE JAY, MAYOR

(Seal)

**APPROVED AS TO FORM:**

\_\_\_\_\_  
GERALD DAHL, CITY ATTORNEY

**ATTEST TO CONTRACTOR:**

\_\_\_\_\_  
NAME

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

**CONTRACTOR**

\_\_\_\_\_  
COMPANY NAME

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
AUTHORIZED SIGNATURE

\_\_\_\_\_  
PRINT NAME

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

A \* \_\_\_\_\_ hereinafter called "PRINCIPAL", and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto the City of Wheat Ridge, 7500 West 29th Avenue, Wheat Ridge, Colorado 80033, hereinafter called "Owner", in the penal sum of \_\_\_\_\_ **DOLLARS (\$\_\_\_\_\_)** 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 CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_ 2017, a copy of which is hereto attached and made a part hereof for the Project titled, **ITB-17-03, 2017 OVERLAY, PROJECT #S-PM-01-17.**

NOW, THEREFORE, if the Principal shall promptly 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, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed 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 or to the Work to be performed or the Specifications accompanying the same shall in any wise 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 or to the Work or to the Specifications.

\*Insert "a corporation", "a partnership", or "an individual" as applicable.

IN WITNESS WHEREOF, this instrument is executed in **ONE** part, each of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 2017

ATTEST:

**PRINCIPAL**

\_\_\_\_\_  
CORPORATE SECRETARY

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
BY

\_\_\_\_\_

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_

(SEAL)

**SURETY**

**ATTEST:**

\_\_\_\_\_

\_\_\_\_\_  
SURETY

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
BY (ATTORNEY IN FACT)

\_\_\_\_\_

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_

(SEAL)

**Note:** Date of Bond must not be prior to date of Contract. If Contractor is partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the State of Colorado.

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a (\*) \_\_\_\_\_, hereinafter called "PRINCIPAL", and

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

hereinafter called "Surety", are held and firmly bound unto the City of Wheat Ridge, 7500 West 29th Avenue, Wheat Ridge, Colorado 80033, hereinafter called "Owner", in the penal sum of \_\_\_\_\_ **DOLLARS (\$\_\_\_\_\_)** 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 CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the \_\_\_\_\_, a copy of which is hereto attached and made a part hereof for the Project titled, **ITB-17-03, 2017 OVERLAY, PROJECT #S-PM-01-17**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract 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 one year guarantee period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs 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, 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 or to the Work to be performed or the Specifications accompanying the same shall in any wise 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 or to the Work or the Specifications.

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

\*Insert "a corporation", "a partnership", or "an individual" as applicable.

IN WITNESS WHEREOF, this instrument is executed in **ONE** part, each of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 2017.

**ATTEST:**

**PRINCIPAL**

\_\_\_\_\_  
CORPORATE SECRETARY

\_\_\_\_\_  
PRINCIPAL

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
BY

\_\_\_\_\_  
ADDRESS

(SEAL)

**ATTEST:**

**SURETY**

\_\_\_\_\_  
SURETY

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
BY (ATTORNEY IN FACT)

\_\_\_\_\_  
ADDRESS

(SEAL)

**Note:** Date of Bond must not be prior to date of Contract. If Contractor is partnership, all partners should execute bond.

**IMPORTANT:** Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the State of Colorado.



**NOTICE TO PROCEED**

TO:

FROM: **CITY OF WHEAT RIDGE, CO**

RE: **ITB-17-03, 2017 OVERLAY, PROJECT #S-PM-01-17**

You are hereby notified to commence Work in accordance with the Agreement dated \_\_\_\_\_,

2017, on or before \_\_\_\_\_, 2017, and you are to complete the work within **55**

**WORKING DAYS**. The date of completion of all work is \_\_\_\_\_, 2017

Dated this \_\_\_\_ day of \_\_\_\_\_ 2017.

By: \_\_\_\_\_

Title: Engineering Manager

\*\*\*\*\*

**RECEIPT OF NOTICE**

Receipt of the above Notice to Proceed is hereby acknowledged by

\_\_\_\_\_ on this \_\_\_\_ of \_\_\_\_\_, 2017.

Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Title \_\_\_\_\_

**FINAL RECEIPT**

DATE: \_\_\_\_\_

TO: \_\_\_\_\_  
(Contractor)

\_\_\_\_\_  
(Address)

FROM: **CITY OF WHEAT RIDGE, CO**

RE: **ITB-17-03, 2017 OVERLAY, PROJECT #S-PM-01-17**

Received this date, of the Owner, as full and final payment of the cost of the improvements provided for in the Project Contract Documents, the amount of \$ \_\_\_\_\_ in cash, being the remainder of the full amount accruing to the undersigned by virtue of said contract.

Said cash also covers and includes full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto.

The undersigned hereby releases said Owner from all claims whatsoever which may develop from said contract.

These presents are to certify that all persons doing work upon or furnishing materials for said improvements under the foregoing contract have been paid in full.

Printed Name \_\_\_\_\_

Signature \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

**CITY OF WHEAT RIDGE  
GENERAL PROVISIONS**

1. DEFINITIONS:

"City" (also sometimes referred to as "Owner") means the City of Wheat Ridge, Colorado. The City is represented by employees who will assume Project administration, oversight, and inspection responsibilities as further defined in the Contract, the General and Special provisions, and the current edition of CDOT Standard Specifications for Road and Bridge Construction. At the time of the preconstruction meeting, or when requested by the Contractor, the City shall provide an official list of City representatives and their titles as applies to the Project.

"Contractor" means the person, partnership, firm or corporation responsible for the physical accomplishment of the project.

"Subcontractor" means only those having a direct contract with the Contractor and includes one who furnished materials worked to a special design according to the plans or specifications for the work under the Contract, but does not include one who merely furnishes material not so worked.

"Notice" means written demand, instruction or order duly served. Written notice shall be deemed to have been duly served if delivered in person to the Contractor, or if delivered in person or sent by registered mail to the address given in the Contract and shall have been duly served upon the City if delivered to the City Clerk of the City of Wheat Ridge, Municipal Building, Wheat Ridge, Colorado, either in person or by registered mail.

"Work" means performance of the Contractor or Subcontractor including labor and materials and all services incidental thereto.

"Cost" means all charges and expenditures of every kind applicable to the accomplishment of the work.

"Final Completion" means when all items are one hundred percent (100%) complete and when all known defective work has been corrected as certified by the City Representative.

"Substantial Completion Date" is the date on which the City Representative certifies the readiness of the work for beneficial occupancy or use, and is the date for terminating liability for liquidated damages and for determining incentive payments due for early completion.

2. MATERIALS, SERVICES, AND FACILITIES:

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish and pay for all labor, superintendence, material, utilities, machinery, equipment, tools, transportation, facilities, temporary construction of every nature and all other services and facilities of every nature, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work, within the time stated, in accordance with the plans, drawings and specifications covered by the Contract, and any and all supplemental plans, drawings and specifications. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. It will be the responsibility of the Contractor to locate/negotiate a staging area. The City will not provide a staging area on City owned property. Any work necessary to be performed after regular working hours, on Saturdays, Sundays, or Legal Holidays, shall be performed without additional expense to the City.

3. CONTRACTOR'S TITLE TO MATERIALS:

No materials or supplies for the work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work, free from all liens, claims or encumbrances.

4. OBSERVATION AND TESTING:

All work performed and all workmanship, equipment and materials used in the construction shall be subject to Observation, examination and test, at any and all times during construction.

5. WEATHER CONDITIONS:

In the event of temporary suspension of work, or during inclement weather or whenever the City shall direct, the Contractor will, and will cause his Subcontractors to, protect carefully his and their work and materials against damage or injury from weather. If, in the opinion of the City, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his Subcontractors to so protect his work, such materials shall be removed and replaced at the expense of the Contractor.

6. EMERGENCY - PROTECTION OF LIFE AND PROPERTY:

In case of an emergency which threatens loss of injury or property, and/or safety of life, the Contractor is hereby permitted to act at his own discretion and in a diligent manner without prior instructions from the City to prevent the threatened loss or injury. He shall notify the City immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted in writing to the City for approval. The amount of any reimbursement claimed by the Contractor shall be determined in the manner provided in Article 9 of this Contract.

7. REPORTS, RECORDS, AND DATA:

The Contractor shall submit to the City such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as may be requested concerning work performed or to be performed under this Contract.

8. SUPERINTENDENCE BY CONTRACTOR:

At the site of the work, the Contractor shall employ a construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such Representative shall be acceptable to the City and shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll. All directions given to such Representative in the Contractor's absence shall be as binding as if given to the Contractor.

9. CHANGES IN THE WORK:

The City may, at any time, by written order and without notice to the sureties, require the performance of extra work or make changes by altering, adding to, or deducting from the work. The amount of compensation to be paid to the Contractor shall be adjusted accordingly without invalidating the Contract and in accordance with whichever of the following plans the City elects: (1) a price agreed upon, (2) a price based on unit prices of the Contract; or (3) a price determined by adding fifteen percent (15%) to the reasonable cost of the extra work, addition, alteration, or deduction; provided however, that no additions to the Contract Price shall be agreed upon by, or shall be binding upon the City if the effect of said price increase is to increase the Contract amount beyond the amount of money appropriated by the City Council, as specified in Section 2-3 of the Code of Laws of the City of Wheat Ridge.

In giving instructions, the City may authorize minor changes in the work, not involving extra cost and not inconsistent with the purpose of the project. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written approved Change Order or RFI response by the City .

10. COMPLETION TIME; INCENTIVE PAYMENTS; LIQUIDATED DAMAGES:

Completion time for this project shall be within 85 working days. While there are no incentive payments intended for early completion, liquidated damages shall apply as stated in the City Special Provisions modification to CDOT Standard Specification 108.09 Failure to Complete Work on Time.

11. TIME EXTENSIONS:

The Contractor shall, within seven (7) days from the beginning of any delay, notify the City, in writing, of the causes thereof and the City shall ascertain the facts, the extent of the delay and notify the Contractor of the decision in the matter.

The completion time shall be extended when delay in completion of the work by the Contractor is due to unforeseeable causes beyond his control and without his fault or negligence, including, but not restricted to, acts of God or the public enemy, acts or neglect of the City, acts of neglect of any other contractor, fires, floods, epidemics, quarantine restrictions, strikes, riots, civil commotions or freight embargoes. The time of completion of his work shall be extended by such time as shall be fixed by the City.

No such extension of time shall be deemed a waiver by the City of its right to terminate the Contract for abandonment or delay by the Contractor as herein provided or relieve the Contractor from full responsibility for performance of his obligations hereunder. The City's liability for delay shall be limited pursuant to the provisions of Section 2-4 of the Code of Laws of the City of Wheat Ridge and shall be limited to granting a time extension to the Contractor.

12. DEFECTIVE WORK:

The observation of the work by the City shall not relieve the Contractor of any of his obligations to fulfill his Contract as herein prescribed, and defective work shall be made good, and unsuitable materials may be rejected, notwithstanding that such work and material have been previously overlooked by City representative(s) and accepted or estimated for payment or paid for. If the work or any part thereof shall be found defective or at any time before the final acceptance of the whole work, or the final payment therefore, the Contractor shall forthwith make good such defect in a manner satisfactory to the City and if any material brought upon the ground for use in the work, or selected for the same, shall be condemned by the City as unsuitable, the Contractor shall forthwith remove such materials from the vicinity of the work and shall replace, at his own expense, damaged or unsuitable materials with the new materials of satisfactory quality.

Neither the foregoing nor any provision of these Contract Documents, nor any special guarantee time limit, shall be held to limit the Contractor's liability for defects to less than the legal limit of liability in accordance with the law of the place of the construction.

The Contractor shall pay the City all expenses, losses, and damages as determined by the City incurred in consequence of any defect, omission, or mistake of the Contractor or his employees or the making good thereof.

13. UNEXPECTED UNDERGROUND STRUCTURES; CHANGE OF CONDITIONS:

Should the Contractor encounter underground structures at the site materially differing from those shown on the Plans or indicated in the Specifications, he shall immediately give notice to the City of such conditions before they are disturbed. The City will thereupon promptly investigate the conditions, and if it is determined that they materially differ from those shown on the Plans, may authorize changes to be made to the Plan and/or Specifications as may be necessary.

It is understood and agreed that the Contractor has considered in his bid all of the permanent and temporary utility appurtenances in their present or relocated position as shown on the plans and that additional compensation will not be allowed except for any unreasonable delays, or damage sustained by him due to any interference from the said utility appurtenances. Unreasonable delays shall constitute delays caused by a complete shut down of all operations. It is understood that utilities are not owned, operated or controlled or subject to control by the City of Wheat Ridge. Relocations of facilities owned by said utilities are not a matter over which the City has control. The Contractor shall adjust his schedule in anticipation of such delays so that work in other areas may be completed away from the area of utility conflict.

The locations of all utilities shown on the Project plans should be considered approximate. It is therefore the responsibility of the Contractor to notify the appropriate utility and obtain more precise locations. No compensation will be made to the Contractor for any damage, delay or additional cost incurred as a result of failure to obtain utility locations.

Information on the Plans in the Contract Documents referring to the existence of utilities or other underground structures is not guaranteed to be correct or to be a complete representation of all existing data. Every effort has been made, however, to make this information complete and accurate on the basis of all data and information which could be procured by the City. The Contractor shall make his own examination and shall draw his own conclusions as to the underground facilities which will be encountered, and he shall have no claim for damages of any kind on account of any errors, inaccuracies or omission that may be found.

There shall be no adjustment in Contract Price based on changed site conditions. The Contractor is required hereby to make an on-site inspection and investigation, which includes determination of location of utilities and said and other natural conditions. Representations regarding site and soil conditions and utility locations are based on the best information available to the Owner and final determination as to both site and soil conditions and utility locations is left to the Contractor, without recourse to the City. The City shall allow reasonable and necessary access to the site to Contractor and his representatives to make such determination and site review.

14. CLAIMS FOR EXTRA COSTS:

No claim for extra work or cost shall be allowed unless the same was done in pursuance of written order of the City, as provided for in Article 9, and the claim was presented prior to the issuance of the final payment. When work is performed under the "reasonable cost" method as outlined in Article 9 of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost, and when requested by the City, give the City access to accounts relating thereto.

**NO adjustments will be allowed for fuel cost of asphalt cement.**

**15. RIGHT OF CITY TO TERMINATE CONTRACT:**

If (1) the Contractor or any of his Subcontractors shall be adjudged bankrupt or (2) if he shall make a general assignment for the benefit of his creditors or (3) if a receiver shall be appointed of his property, or (4) if the work to be done under this Contract shall be abandoned, or (5) if this Contract or any part hereof shall be sublet, without the previous written consent of the City, or (6) if the Contract or any claim thereunder shall be assigned by the Contractor otherwise than as herein specified, or (7) at any time the City shall certify in writing that the rate of progress of the work or any part thereof is unsatisfactory or (8) that the work or any part thereof is unnecessarily or unreasonably delayed, or (9) that the Contractor, his subcontractors, agents or employees have violated any of the provisions of this Contract, or of the plans and specifications, or construction schedule, the City shall notify Contractor and the Surety, and shall be entitled immediately to terminate the Contract. The Surety shall have the right to take over and perform the Contract, provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the City may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor, and the Contractor and his Surety shall be liable to the City for any excess cost occasioned the City thereby, and in such event the City may take possession of and utilize in completing the work, such materials, machinery, appliances and plant as may be on the site of the work and necessary therefore. The Contractor, by signing this Contract, gives to the City in the event of default, right to use such aforesaid articles to the full extent which they could be used by the Contractor. The City shall not be liable to the Contractor for trespass or conversion.

All expenses charged under this article shall be deducted and paid for by the City out of money then due to become due the Contractor under this Contract or any part thereof, and in such account the City shall not be held to obtain the lowest figures for the work of completing the Contract or any part thereof or for insuring its proper completion, but all sums actually paid hereafter shall be charged to the Contractor and his Surety. In case the expenses so charged are less than the sum which would have been payable under this Contract if the same had been completed by the Contractor, the City shall be entitled to retain the difference and in case such expenses shall exceed the said sum, the Contractor and his Surety shall pay the amount of the excess to the City upon completion of the work without further demand being made therefore.

**16. CONSTRUCTION SCHEDULE:**

Before any work is begun, the Contractor shall provide to the City a written schedule detailing the order and manner of doing the work. Before the first partial payment is made, the Contractor shall deliver to the City an estimated construction progress schedule in form satisfactory to the City, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract. The Contractor shall provide an updated schedule every two weeks.

**NO WORK WILL BE DONE ON THE FOLLOWING DATES.** No lanes shall be milled or construction allowed during these time periods to accommodate for the following events:

Leaves of Hope 5K & 10K walk/run	June 5
2017 Ridge at 38 Criterium bike race	June 11
Carnation Festival/Zoppe Circus	August 11-18
Colorado Classic Circuit – Pro Cycling (32 <sup>nd</sup> ave)	August 12
Farmers 5000	September 17
St Peter & Paul 5K	October

**17. PAYMENTS TO THE CONTRACTOR:**

During the course of construction, the Contractor shall request payment of work actually performed during the preceding month. The City will once each month make a progress payment to the Contractor on the basis of an evaluation of the claim by the City as to amount of work done and that the City has received full value thereof. In

accordance with House Bill 11-1115, the City shall retain five percent (5%) of the value of the completed work. Retainage shall be held until final completion and acceptance of all work, as part security for the fulfillment of the Contract by the Contractor. The amount of the progress payments shall be the balance not retained as aforesaid, after deducting all previous payments and all other sums to be kept or retained under the provisions of this Contract. The Contractor shall have no right to either terminate the Contract or to claim damages if he considers partial payments inadequate.

18. CERTIFICATE OF COMPLETION:

Upon completion of all work whatsoever required including completion of all known defective work, the City shall file a written certificate with the Contractor as to the entire amount of work performed and compensation earned by the Contractor including Extra Work and compensation therefore, and including the date of completion.

19. FINAL PAYMENT:

After the filing of the Certificate of Completion, the City shall pay to the Contractor in accordance with applicable Colorado laws (Article 38, Chapter 26, Section 101 Et. Seq. Colorado Revised Statutes) and upon authorization of funds disbursement by the City Council the amount therein stated, less all prior payments and advances whatsoever, to or for the Account of the Contractor. All prior estimates and payments including those relating to extra work shall be subject to correction by this payment.

20. PAYMENT WITHHELD:

The City, as a result of subsequent discovered evidence, may withhold or nullify the whole or a part of any payment to such extent as may be necessary to protect the City from loss on account of:

- (a) Defective work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claim.
- (c) Failure of the Contractor to make payments properly to Subcontractor or for material or labor, or to comply with laws relative thereto.
- (d) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (e) Damage to another Contractor.
- (f) Damage to the real or personal property of another and failure to repair or replace the same.

When the grounds for withholding payment have been corrected to the satisfaction of the City, the City shall proceed to process any amounts due.

21. FINAL PAYMENT TO TERMINATE LIABILITY OF CITY:

The acceptance by the Contractor of the last payment made as aforesaid under the provisions of Article 19 shall operate as and shall be a release to the City, its officers, or agents from all claims and liability to the Contractor, his vendors, laborers or Subcontractors for anything done or furnished for, relating to, or for any act or neglect of the City or of any persons relating to, or affecting the work, except the claim against the City for the remainder, if any there be, of the amounts kept or retained as provided in Article 17, 19 and 20 of these . Said acceptance shall also operate as a general release of the City by the Contractor.

22. EFFECT OF CERTIFICATION AND PAYMENT:

Neither the certification nor payment made to the Contractor, not partial or entire use or occupancy of the work by the City shall be an acceptance of any work or materials not in accordance with the Contract. The making and acceptance of the final payment shall constitute a bar of all claims by the Contractor, except those previously made in writing and still unsettled.

23. GENERAL WARRANTY:

The Contractor shall guarantee the work against defective materials or workmanship for a period of one (1) year from the final completion date. Upon discovery of any defects including any damage to other work resulting, repair and replacement that is required, in the opinion of the City, shall be done immediately by the Contractor at the Contractor's expense. Should the Contractor fail to repair such defective material and/or workmanship, or to make replacement within five (5) days after written notice by the City, it is agreed that the City shall make such repairs and replacements and the actual cost of the required labor and materials shall be chargeable to and payable by the Contractor.

24. INSURANCE:

The Contractor shall maintain general liability and property damage insurance (the "Liability Policy") to protect the Contractor and the City from any and all claims for damages including but not limited to claims for property damage and bodily injury, including death, which may arise from operations under this Contract, including the operations of subcontractors. The Liability Policy shall state that it is the primary insurance for such claims and shall not contain any "excess" or "other insurance" clauses which limit its application as the primary coverage for those claims. The Contractor shall be individually liable for any and all defects in the Liability Policy. The Liability Policy shall not be terminated or cancelled prior to the completion of this Contract without at least 45 days prior written notice to the City.

For bodily injury	\$500,000 each person/ \$500,000 each accident/ \$500,000 each disease
For property damage	\$1,000,000 for each occurrence
For automobile liability	\$1,000,000 combined single limit

In lieu of the foregoing, a single limit public liability policy for personal injury, property and/or vehicle damage will be accepted in the amount of \$2,000,000.00.

Such insurance shall be without prejudice to coverage otherwise existing, and shall name as additional insured, the City of Wheat Ridge, its officers and employees.

Notwithstanding the naming of additional insured, the said policy shall protect each insured in the same manner as though a separate policy had been issued to each, but nothing herein shall operate to increase the insurer's liability as set forth elsewhere in the policy beyond the amount or amounts for which the insurer would have been liable if only one person or interest had been named as insured. A certificate evidencing such insurance, together with the proper endorsement, shall be filed, subject to approval as to the adequacy of protection.

Fire and Standard Extended Coverage Insurance -- The Contractor shall insure the work for 100 percent (100%) of the replacement value thereof for the life of the Contract against all loss or damage covered by the Standard Extended Coverage Insurance endorsement, including theft, vandalism, and malicious mischief, with an insurance company or companies acceptable to the City. The amount of the insurance may vary with the extent of the work completed but shall at all times be at least equal to the replaceable value of the amount paid for the work and materials installed and delivered plus the replaceable value of the work or materials furnished or delivered, but not yet paid for by the City. The insurance policy or policies shall be held jointly in the name of the City and Contractor as their respective interest may appear.

The issue, if any, shall be made adjustable with and payable to the City as a trustee for whom it may concern. Any payments made under such policy shall insure to the benefit of the City to the extent of balance for replacement of the loss suffered. The policy of insurance shall provide that it shall not be terminated or be canceled prior to the completion of this Contract. The Contractor shall be responsible for all damage to the work under construction, whether from fire, water, high winds or other cause during construction and until final completion and acceptance, even though partial payments or progress payments have been made under the Contract.

Workers' Compensation Insurance -- The Contractor shall provide workers' compensation insurance coverage for all persons employed on the work to be done under the Contract and assure that all workers will receive the compensation for compensable injuries.

Certificates of Insurance shall be attached to the executed Contract Documents and shall become a part of the Contract. These Certificates shall include a provision that thirty (30) days prior to insurance cancellation, written notice shall be given to the City of Wheat Ridge.

Indemnification of City -- Contractor hereby indemnifies and agrees to hold the City and its representatives and agents harmless for and on account of any act or omission in the completion and execution of the project specified herein, which indemnification shall extend to and include any damage of whatever sort or description, suffered by any person or entity, and shall include compensatory, punitive or special damages; and Contractor agrees to defend City hereunder, at Contractor's sole expense and if he fails to do so, to thereafter indemnify City, in addition to the above indemnification, for all court costs and attorneys fees incurred in any defense required to be undertaken by the City.

Notwithstanding the foregoing, nothing contained herein shall be deemed a waiver by the City of any of the protections afforded the City by virtue of the provisions of the Colorado Governmental Immunity Act (Colo. Rev. Stat. 24-10-101).

25. RESPONSIBILITY FOR WORK; PRIORITY OF DOCUMENTS:



- a) Debts and claims: The Contractor shall pay all debts for labor and materials contracted for by him on account of the work herein contemplated. The Contractor shall assume the defense of, and indemnify and save harmless, the City and its officers and agents, from all claims relating to labor and materials furnished for the work; to infringement or alleged infringement of invention patents and patent rights used in, or in connection with the work or however originating from any of the work under this Contractor from conditions created thereby; to injuries to any persons or corporation caused by the acts or negligence of the Contractor or any of his agents or employees, or of any Subcontractor or any agents or employees of any Subcontractors, in doing the work or in consequence of any improper materials, implements or labor used therein; and shall fully reimburse and repay to the City all outlay and expense which the City may incur by reason of his failure to do so. The Contractor shall satisfy all suits and claims against the City arising from the violation of any law, ordinance, regulation, order, or decree on the part of the Contractor or any of his agents or employees, or any Subcontractor, or agent or employees of any Subcontractor; shall fully indemnify and save harmless the City against and from all cost, loss, and damage which the City may suffer by reason of his failure to do so; and shall fully reimburse and repay to the City all outlay and expense which the City may incur in making good any such default. The Contractor shall fully complete the work required to be done under this Contract, free from all liens and claims of any kind whatsoever.
- b) Plans and Specifications: It shall be the duty of the Contractor to carefully study and compare all drawings, specifications and instructions, visit the project site and acquaint himself with all conditions, and call to the attention of the City any discrepancy, error, omission or inconsistency that may exist in the plans or specifications, or between the plans and specifications, or any conflict between existing conditions and requirements of the plans and specifications. The execution or work in accordance with the plans, specifications or other instructions will be considered as evidence that the Contractor is thoroughly familiar with the true intent of the plans, specifications or other instructions. Change orders will not be issued to cover any cost, loss, or expense for additional labor or material required to rectify any discrepancies discovered or reported to the City after the execution of the work, unless the discrepancies are errors in structural, mechanical or electrical design as determined by the City.
- c) Priority of Documents: In case of discrepancy or inconsistency in the terms or conditions of any documents, the Contract Documents shall have the following order of priority such that a statement appearing in the document with the higher priority shall control any inconsistent statement in a document of lower priority. (The following are listed from the highest priority to the lowest priority):
1. The Agreement
  2. Drawings and any notes appearing on the drawings
  3. Project Special Provisions
  4. Current edition of CDOT Standard Specifications for Road and Bridge Construction and all supplements thereto (English Version).
  5. General Provisions of the Contract for construction.

26. NOT USED

27. CARE AND PROTECTION OF PROPERTY:

The Contractor expressly undertakes at his own expense:

To assume full responsibility for the preservation of all public and private property, and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property or on account of any act, omission, neglect or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the City. No representations are made by or on behalf of the City concerning the conditions, locations or state of repair or existing sewers, drains, water mains and other underground structures;

To store his apparatus, materials, supplies, and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work on any other Contractor;

To provide suitable storage facilities for all materials which are liable to injury or exposure to weather, theft, breakage, or otherwise;

To place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work;

To clean up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;

To fully and completely remove all utility markings generated by or as a result of the project from public rights-of-way utilizing a method that is least destructive to the existing improvements, and which method has been approved by the City. Should the contractor propose to remove the markings with pressure washing, all pressure washing runoff and residue shall be contained and collected in accordance with Best Management Practices and Wheat Ridge Ordinance Chapter 20, Stormwater Quality and Control. Removal of all markings shall occur no later than twenty (20) days after completion of work.

To remove all surplus material, false-work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition before final payment;

To affect all cutting, fitting or patching of his work required to make the same to conform to the Plans and Specifications and, except with the consent of the City, not to cut or otherwise alter the work of any other Contractor. The Contractor shall not, except after written consent from proper parties enter or occupy with men, tools, materials or equipment, any privately owned land except on easements provided herein.

28. LANDS FOR WORK AND RIGHT-OF-WAY:

The City will provide land, right-of-way and easements for all work specified in the Contract.

29. NO DAMAGES FOR CERTAIN DELAYS:

The City may delay the commencement of the work, or any part thereof, if the City shall deem it for the best interest of the City to do so. The Contractor shall have no claim for damages on account of such delay, but he shall be entitled to so much additional time in which to complete the whole or any portion of the work required under this Contract as the City shall certify in writing to be just. The Contractor shall have no claim for damages on account of any delay on the part of another Contractor. Contractor expressly acknowledges and accepts the provisions of Section 2-4 of the Code of Laws of the City of Wheat Ridge as controlling this Project.

30. REQUIRED PROVISIONS DEEMED INSERTED:

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the applications of either party, the Contract shall forthwith be physically amended to make such insertion.

31. PROTECTION OF LIVES AND HEALTH:

The Contractor shall take all necessary precautions for the safety of employees of the work, and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the work is being performed. He shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards for the protection of workmen and the public and shall post danger signs warning against the hazards created by the construction such as protruding nails, hod hoists, well holes, elevator hatchways, scaffolding, window openings, stairways, and failing materials.

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL-91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL-19-54).

32. WAGE RATES:

The attention of the bidder is called to the requirements and provisions of all applicable laws and any amendments thereof or additions thereto as to the employment of labor, and to the schedule of any minimum wage rates established

in compliance with such laws. If, after the award of the Contract, it becomes necessary to employ any person in a trade or occupation not classified in the wage determinations, such person shall be paid at not less than such rate as shall be determined by the officials administering the laws mentioned above.

The Contract is subject to the applicable provisions of the Contract Work Hours Standards Act. Public Law 87-581, 87th Congress. No Contractor or Subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in any work week unless such laborer or mechanic received compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight (8) hours in any calendar day or in excess of forty (40) hours in such work week, as the case may be.

**33. EMPLOYMENT OF LABOR:**

The Contractor and each of his Subcontractors shall hire qualified workers for the project who are citizens of the United States or legal resident aliens with first preference being given, insofar as practicable, to those having served in the armed forces of the United States and having been honorably discharged or released from active duty therein.

The Contractor shall employ only competent persons to do the work, and whenever requested in writing by the City Representative, the Contractor shall discharge any person who commits trespass or is, in the opinion of the City Representative, disorderly, dangerous, unfaithful, insubordinate, incompetent or otherwise unsatisfactory.

**34. SANITARY PRECAUTIONS:**

Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such points as shall be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committal of nuisances within, on, or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the City Representative.

The Contractor shall supply sufficient drinking water from approved sources to all of his employees.

The sanitary convenience specified above shall be the obligation and responsibility of the General Contractor until the completion of the work. The facilities shall be made available to all other Contractors and Subcontractors.

**35. SALES AND USE TAXES:**

Do not include sales or use taxes in your bid. House Bill 1451 provides that Contractors shall make application with the Colorado State Department of Revenue for a tax exempt number which will be issued for the duration of the project. This tax exempt number is for State taxes only. The City of Wheat Ridge will issue its own tax exempt number for local sales tax purposes. An affidavit must be signed by the General Contractor for such project before the City tax exempt number can be issued. Please be advised that a supplier is allowed by Colorado law (C.R.S. 39-26-703 (1) to disallow any exemption because the seller is ultimately responsible for the tax. When a supplier exercises this right, please seek a refund of sales taxes paid from the appropriate jurisdiction (city or state).

**36. BUSINESS LICENSE:**

A business license is required for all Contractors performing work in the City prior to beginning work. Please contact the City Sales Tax Division to obtain a license.

### **CDOT STANDARD SPECIFICATIONS**

All work required for the project shall be in accordance with the latest edition of the COLORADO DEPARTMENT OF TRANSPORTATION (CDOT), Standard Specifications for Road and Bridge Construction, 2011 Edition, unless modified by these Specifications.

### **CITY SPECIAL PROVISIONS**

The CDOT Standard Specifications, Standard Special Provisions, Project Special Provisions are modified with the following City Special Provisions.

**REVISION OF SECTION 101  
DEFINITIONS AND TERMS**

Section 101 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 101.10 and replace with the following:

**101.10 Director of Public Works.** The Director of Public Works for the City, or his duly authorized representative, who is responsible for public works activities within the City. The Director of Public Works is responsible for final decisions relating to Contractor claims for change orders, additional compensation, or extensions of contract time. All references to "CDOT Resident Engineer" shall be replaced by "Director of Public Works".

In subsection 101.17 delete the first paragraph and replace with the following:

The written agreement between the City and the Contractor setting forth the obligations of the parties for the performance of the work and the basis of payment.

Delete subsection 101.23 Contractor.

Delete subsection 101.28 and replace with the following:

**101.28 Department.** Department of Public Works. A department with the City.

Delete subsection 101.29 and replace with the following:

**101.29 Engineer.** The Engineering Manager of the Department acting directly or through an authorized representative, who is responsible for engineering and administrative supervision of the project. For the purpose of these specifications, the Engineer is responsible for initial decisions relating to Contractor claims for additional compensation or additional time. The Engineer is the sole City representative who may approve modifications to Contract documents or drawings.

Delete subsection 101.36 and replace with the following:

**101.36 Holidays.** Holidays recognized by the City are:

- New Years Day
- Martin Luther King, Jr. Day
- Presidents' Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans' Day
- Thanksgiving Day
- Day after Thanksgiving Day
- Christmas Day

When New Year's Day, Independence Day, or Christmas Day fall on Sunday, the following Monday shall be considered a holiday.

When New Year's Day, Independence Day, or Christmas Day fall on Saturday, the previous Friday shall be considered a holiday.

Additional legal holidays, when designated by the Governor or the President of the United States will also be recognized by the City.

Delete subsection 101.37 and replace with the following:

**101.37 Inspector.** The Project Engineer's authorized representative assigned to make detailed inspections of contract performance and is responsible for coordinating administration and satisfactory completion of the project with the Project Engineer.

Delete subsection 101.48 and replace with the following:

**101.48 Preconstruction Conference.** A meeting of City project personnel, Contractor project personnel, and other stake holders held prior to the beginning of construction at which topics pertinent to the successful prosecution of the work are discussed.

Delete subsection 101.51 and replace with the following:

**101.51 Project Engineer.** The Engineer's duly authorized representative who may be a City employee or an employee of a consulting engineer (consultant) under contract to the City as defined below:

- (a) *City Project Engineer.* The City employee who is the Engineer's duly authorized representative. The City Project Engineer is in direct charge of the work and is responsible for the administration and satisfactory completion of the project under contract.
- (b) *Consultant Project Engineer.* The consultant employee under the responsible charge of the consultant's Professional Engineer who is in direct charge of the work and is responsible for the administration and satisfactory completion of the project. The Consultant Project Engineer's duties are delegated by the Engineer in accordance with the scope of work in the consultant's contract with the City. The Consultant Project Engineer is not authorized to sign or approve Contract Modification Orders.

Delete subsection 101.58 and replace with the following:

**101.58 Region Transportation Director.** All references to "Region Transportation Director" shall be replaced by "Director of Public Works".

Delete subsection 101.59 and replace with the following:

**101.59 Right of Way.** A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to a highway, street, alley, or other access.

Delete subsection 101.81 Subcontractor.

Add subsections 101.96 – 101.105 as follows:

**101.96 Approved Equal.** A product, component or process whose use in or on a particular project is specified as a standard for comparison purposes only. The "equal" product, component or process shall be the same or better than that named in function, performance, reliability, quality, and general configuration. Determination of equality in reference to the project design requirements will be made by the Engineer. It is the responsibility of the supplier to provide all necessary information for determining equality.

**101.97 Bid Bond.** The security required to be submitted with each proposal as described in Section 101.52 as a Proposal Guaranty.

**101.98 Contract Change Order.** Same as Contract Modification Order, subsection 101.19.

**101.99 Easement.** The right to use a defined area of property for a specific purpose or purposes as set forth in a document which has been made a part of the Contract Documents.

**101.100 Lump Sum.** A method of payment providing for one all inclusive cost for the work or for a particular portion of the work; including any incidental costs necessary to perform that item of work.

**101.101 Notice of Award.** A written notice of acceptance of the bid from the City to the successful bidder.

**101.102 Owner.** The legal entity or contracting agency for which the work is being performed, herein defined as the City. The words City and Owner are used interchangeably within this document.

**101.103 Payment Bond.** Same as Contract Payment Bond, subsection 101.20.

**101.104 Performance Bond.** Same as Contract Performance Bond, subsection 101.21

**101.105 Utility.** Tracks, overhead or underground wires, pipelines, conduits, pipes, ducts or structures, owned, operated or maintained in or across a public right-of-way or easement.

## **REVISION OF SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS**

Subsection 102 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 102.01 and replace with the following:

**102.01 Prequalification of Bidders.** The City does not prequalify bidders. Each Contractor is required to complete the Contractors Qualification Form included in the Bid Package.

Delete subsection 102.04 and replace with the following:

**102.04 Interpretation of Plans and Specifications.** If it should appear to a Bidder that the work to be done or matters relative thereto are not sufficiently described or explained in the Contract Documents or that the Contract Documents are not definite and clear, the Bidder may make written inquiry regarding same to the City Purchasing Agent at least five (5) days before the scheduled closing time for filing bids.

Then, if in the judgment of the City, additional information or interpretation is necessary, such information will be supplied in the form of an addendum. Each addendum will be delivered where possible by FACSIMILE MACHINE (FAX) or ELECTRONIC MAIL (EMAIL) to all individuals, firms and corporations who have acknowledged receipt of Bid Document Sets. Such addendum shall have the same binding effect as though contained in the main body of the Contract Documents. **ORAL INSTRUCTIONS OR INFORMATION CONCERNING THE CONTRACT DOCUMENTS OR THE PROJECT GIVEN OUT BY OFFICERS, EMPLOYEES OR AGENTS OF THE OWNER TO PROSPECTIVE BIDDERS SHALL NOT BIND THE OWNER.** If no request is made in the five days, Bidder waives right to any conflict in the Contract Documents.

Subsection 102.05 shall include the following:

Final determination of underground or other conditions is left to the Bidder without recourse to the City.

Delete subsection 102.06 and replace with the following:

**102.06 Preparation of Proposal.** The bidder shall submit his proposal upon the forms supplied by the Owner. The bidder shall specify a unit price in words or figures, or both if required, for each pay item for which a quantity is given and shall also show the products to the respective unit prices and quantities written in figures in the column provided for that purpose and the total amount of the proposal obtained by adding the amounts of the separate items. All the words and figures shall be in ink or type. In case of a mathematical error, the unit price shall govern.

When an item in the proposal contains a choice to be made by the bidder, the bidder shall indicate his choice in accordance with the specifications for that particular item, and thereafter no further choice will be permitted.

The bidder's proposal must be signed in ink by the individual, by one or more members of the partnership, by two officers of a corporation or by an agent of the contractor legally qualified and acceptable to the City.

If the proposal is made by an individual, his name and post office address must be shown, by a partnership, the name and address of each partner must be shown, by a corporation, the name of the corporation and the business address of its corporate officials must be shown.

In subsection 102.07 delete paragraphs (7) and (9)

Delete subsection 102.09 and replace with the following:

**102.09 Anti-Collusion Affidavit.** Every Proposal (bid) submitted to the City shall contain a statement certifying that the Bidder has not participated in any collusion or taken any action in restraint of free competitive bidding. This statement shall be in the form of an affidavit provided by the City and included in the Bid Form. **The Bidder's Proposal will be rejected if it does not contain the completed Noncollusion Affidavit.**

Add subsections 102.11 – 102.14 as follows:

**102.11 Disqualification of Bidders.** Any of the following reasons may be considered as being sufficient for the disqualification of a bidder and the rejection of his proposal or proposals:

- (1) More than one proposal for the same work from an individual, firm, or corporation under the same or different name.
- (2) Evidence of collusion among Bidders. Participants in such collusion will not receive recognition as Bidders for any future work of the City until any such participant shall have been reinstated as a qualified Bidder.
- (3) If, during a Contract with the City, a Contractor or Subcontractor incurs liquidated damages as described in subsection 108.09, he shall be disqualified for a period of one (1) year from the date of final acceptance of that Contract.

**102.12 Bid Prices.** Bidders must include, in their bid prices, the entire cost of each item of the work set forth in the proposal, and it is understood and agreed that there is included, in each lump sum or unit price bid, the entire cost of materials and labor incidental or necessary to the completion of that portion of the work covered, unless such work is expressly included in other lump sum or unit price bids in the proposal. Since the bid information cannot be guaranteed, the Contractor shall have assumed the risks attendant to successful performance of the work at the amount of the bid.

**102.13 Rejection of Bids.** The Owner reserves the right to reject any or all bids and waive irregularities not affecting substantial rights.

**102.14 City Contract Laws.** Section 2-3 of the City's Code of Laws is presented below:

- (a) FISCAL YEAR. Fiscal year for the City shall commence on January 1 and end on December 31.
- (b) BUDGET CONTAINS APPROPRIATIONS. The City Council shall annually adopt a budget in a manner consistent with the provisions of Chapter X of the Home Rule Charter of the City of Wheat Ridge. Upon the annual adoption by City Council of each year's budget, levels of authorized expenditures from the funds indicated within the annual budget itself and/or the adopting resolution shall constitute the appropriation of the amounts specified therein for the purposes specified therein. During the course of each fiscal year, approval by the City Council of contracts for goods or services, and/or approval of bids for the provision of specified goods or services, shall likewise constitute appropriations of the amounts specified therein for the purposes specified therein.
- (c) NO CONTRACT TO EXCEED APPROPRIATION. During each and any fiscal year, no contract entered into by or on behalf of the City shall expend or contract to expend any money, or incur any liability, nor shall any contract be entered into nor any bid be awarded by on behalf of the City which, by its terms, involves the expenditure of money for any of the purposes for which provision is made either in the adopted budget or adopting resolution is made either in the adopted budget or adopting resolution, including any legally authorized amendments thereto, in excess of the amount appropriated in the budget or the approved contract or bid amount. Any contract or bid award, either verbal or written, made in violation of the provisions of this Section shall be void as to the City and no City monies from any source whatsoever shall be paid thereon.
- (d) AMENDMENTS AND AUTHORIZED EXPENDITURES. Nothing contained herein shall preclude the City Council from adopting supplemental appropriation in a manner consistent with the provisions of Section 10.12 of the Home Rule Charter of the City of Wheat Ridge. Further, nothing contained in this Section shall prevent the making of contracts for governmental services or for capital outlay for a period exceeding one year if such contracts are otherwise allowed by the Home Rule Charter of the City; provided, however, any contract so made SHALL be executory only for the amounts agreed to be paid for such services to be rendered in succeeding fiscal years.
- (e) NOTICE TO PARTIES CONTRACTING WITH THE CITY. All persons contracting with, or selling goods or services to, the City are hereby placed on notice of the provisions of this Section. The provisions of this Section shall become a part of the Merit System Personnel Rules and Regulations of the City of Wheat Ridge; shall be referred to specifically in all public works bid documents and contracts; and shall be incorporated into, or specifically noted within, all other contracts entered into by or on behalf of the City wherein City funds are used to pay for said contract.

Section 2-4 of the City Code of Laws is presented below:



- (a) The City may, by contract, require the contractor awarded a public works contract to waive, release or extinguish its rights to recover costs or damages, or obtain an equitable adjustment, for delays in performing such contract, if such delay is caused, in whole or part, by acts or omissions of the City or its agents, if the contract provides that an extension of time for completion of the work is the Contractor's remedy for such delay. Such a clause is valid and enforceable, any provision of State Law to the contrary notwithstanding.
- (b) The City Council, by this ordinance, declares its local contracting powers to be a matter of purely local concern, and further specifically intends to supersede, pursuant to its powers under Article XX of the Colorado Constitution, the provisions of Sections 24-91-101 and 103.5, C.R.S., insofar as they conflict with the provisions of this Section of the Code of Laws of the City of Wheat Ridge, Colorado.

**REVISION OF SECTION 103  
AWARD AND EXECUTION OF CONTRACT**

Section 103 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 103.01 and replace with the following:

**103.01 Consideration of Proposals.** After the proposals are opened and read, they will be compared on the basis of the summation of the products of the approximate quantities shown in the bid schedule by the unit prices.

The Owner reserves the right to settle bid discrepancies that occur in the low Bidder's proposal at the time the Contract is awarded. Bid discrepancies will be settled with the understanding that the low Bidder waives any claims against the City because of Bidder's mistakes in the Bid Proposal.

In subsection 103.02 change the time of award from 30 calendar days to 60 calendar.

Subsection 103.04 shall include the following:

Failure to execute the Contract and file acceptable bonds within 14 days after the date of award shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the City.

The Director of Public Works may elect to waive forfeiture of the proposal guaranty only if it is determined that the bidder has made a good faith remedial error and that no damages were sustained by the City as a result of the failure by the successful bidder to execute the Contract and file acceptable bonds within the time prescribed. Award may then be made to the next lowest responsible bidder, or the work may be readvertised and constructed under Contract or otherwise as the City may decide.

Add subsections 103.05 – 103.06 as follows:

**103.05 Cancellation of Award.** The City reserves the right to cancel the award of any Contract at any time before the execution of said Contract by all parties without liability against the City.

**103.06 Return of Proposal Guaranty.** All proposal guaranties consisting of bid bonds will be retained by the City. All proposal guaranties in the form of certified checks or cashiers checks will be treated as follows:

For the three lowest Bidders, the proposal guarantee will be held until the Contract is awarded to the successful bidder. Proposal guaranty will then be returned to the other Bidders. The proposal guaranty of the successful Bidder will be returned upon receipt of executed Contract and approved payment and performance bonds.

In subsection 103.02 change all time period references from 15 days to 14 days in Sec. 103.04 Execution and Approval of Contract.

**REVISION OF SECTION 104  
SCOPE OF WORK**

Section 104 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 104.04 shall include the following:

The Contractor shall be responsible for maintaining access to all residences and businesses along the Project areas during construction. Lane widths during construction shall not be less than 10 ft and a minimum clearance of two feet shall be maintained between traffic and the construction work zone.

The Contractor will not be permitted to have construction equipment or materials in the lane(s) open to traffic at any time unless permitted by the Engineer.

The Contractor is cautioned that all personal vehicle and construction equipment parking will be prohibited where it conflicts with safety, access, or the flow of traffic.

**REVISION OF SECTION 105  
CONTROL OF WORK**

Section 105 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 105.02 (b) 4. change the base number of submission sets of shop drawings from six to four.

Subsection 105.02 (f) shall include the following:

1. All Contractors who construct public storm drainage systems, bike paths, sidewalks, streets, or other items within Public property to be maintained by the City must submit an "As Constructed" set of construction drawings for approval as a part of the City's acceptance process. The initial submittal shall be one set of "red-lined" marked up prints, which should be delivered to the Department of Public Works counter at City Hall, attention "Engineering Manager". Written City acceptance of the final As Constructed plan is a condition for final acceptance and release of retainage.

As Constructed plans for construction of irrigation systems within public property to be maintained by the City shall be submitted per subsection 623.25.

2. All As Constructed information shall be red-lined and shown on the original construction drawings. The As Constructed drawings shall clearly show any changes or variations from the approved design. Horizontal variations greater than 1.0 foot should be shown dimensionally or through plus stations. Horizontal variations greater than 10.0 feet should also show the graphic relocation of the object. For construction of public storm drainage systems, vertical elevation variations greater than 0.1 feet shall be provided for all shown design elevations. For construction of all remaining project features, vertical elevation variations greater than 0.25 feet shall be provided for all shown design elevations.
3. The As Constructed Certificate (shown below) shall be signed and sealed by a CO professional land surveyor and shall appear on the cover sheet of the As Constructed plan set. All sheets included in the Contract Drawings set must be submitted in the final As Constructed plan set.

AS CONSTRUCTED CERTIFICATE

I hereby certify that the information shown on this as constructed drawing is an accurate and complete representation of data established from field information obtained under the direction of a Professional Engineer or Professional Land Surveyor, and that the physical dimensions or elevations shown are as-built information and the facility was constructed according to the approved plans, except as otherwise noted hereon.

Name	License #
Title	Date

In subsection 105.03 change the first sentence of the seventh paragraph as follows:

Materials may be sampled and tested at the discretion of the City in accordance with the City Permit Testing and Inspection Requirements Document, available at the City Public Works counter, and CDOT's Field Materials Manual.

In subsection 105.09 (a) change the order of precedence as follows:

1. City General Provisions
2. City Special Provisions
3. Project Special Provisions
4. Standard Special Provisions

Subsection 105.09 shall include the following:

Any discrepancy or error discovered in the Drawings, Specifications, or during field construction shall be immediately called to the attention of the Engineer through submission of a "Request for Information" (RFI) document. Only the Engineer may authorize a modification to the project drawings or specifications via written response to an RFI. Neither the Inspector or Project Engineer may authorize alterations, in-field changes, or modifications to the project, whether orally or written, unless said change is so minor in nature that grades, horizontal geometry, detail, or the original purpose and intent of the drawings are not altered. Concurrence by the Inspector, Project Engineer, or any other City representative in the field or on the daily inspection report does not constitute approval of any element of the project. The Contractor is solely responsible for constructing the project according to the project drawings and specifications.

Subsection 105.10 shall include the following:

Not furnishing a competent superintendence will be grounds for suspension of the Project until such superintendence is furnished by the Contractor. **CONTRACT TIME WILL CONTINUE IN THE EVENT OF A WORK SUSPENSION CAUSED BY LACK OF FURNISHING FULL TIME PROJECT SUPERINTENDENCE SATISFACTORY TO THE CITY.**

Subsection 105.11 shall include the following:

The locations of all utilities shown on the project plans should be considered approximate. It is therefore the responsibility of the Contractor to notify the appropriate utility and/or utility locating service to obtain more precise locations. No compensation will be made to the Contractor for any damage, delay or additional cost incurred as a result of failure to obtain utility locations.

Utilities which are adjusted, removed, or reset for the construction convenience of the Contractor and which would not conflict with the line or grade of the proposed project works, shall be done at the Contractor's expense. This shall include, but not be limited to, sewer service lines, water service lines, telephone, gas and electrical lines.

The Contractor shall coordinate with all affected utility owners for work to be performed on said utility as defined in the Contract documents. Coordination shall include application for permits, licensing, payment of fees, scheduling inspections with each owner, as required. All such costs and/ or time spent for coordination with utility owners shall be paid by the Contractor, and shall not be compensated with a Pay Item or Change Order.

Subsection 105.16 shall include the following:

The Engineering Division of the Public Works Department will provide all inspection during construction. The Inspector will oversee the materials testing.

The Contractor shall keep the Inspector informed of future construction operations to facilitate scheduling of required inspection. The Contractor shall notify the Inspector 24 hours in advance of starting any construction operation that will require inspection. Failure of the Contractor to provide such notice shall relieve the Owner from any responsibility for extra costs or delays caused by such failure.

Inspection of the work or materials by the Owner or conversations made between the Contractor and the Inspector shall not relieve the Contractor of the obligation to fulfill the requirements of the Contract. Work and materials not meeting such requirements shall be made good, and unsuitable work or materials may be rejected, notwithstanding that such work or materials have been previously inspected by the Owner or that payment thereof has been included in a progress estimate.

Inspection and acceptance of work pertaining to utilities not owned by the City shall be made by a representative of the owning utility. The Contractor shall obtain required permits and/ or licenses and notify & schedule an inspection by the owning utility prior to commencing any work so that a representative may be made available to approve the work to be performed.

Subsection 105.21 (a) shall include the following:

The one year guarantee period for the portion or unit of the project partially accepted will not begin until completion of the entire project unless otherwise agreed to by the Engineer.

In subsections 105.22 and 105.24 change all references to CDOT to the City and remove all references to subsection 105.23.

Subsection 105.22 shall include the following:

In accordance with Section 2-4 of the City Code, as provided in subsection 102.14 of the City Special Provisions, the Contractor shall waive, release or extinguish its rights to recover costs or damages, or equitable adjustment, for delays in performing this contract if such delay is caused, in whole or in part, by acts or omissions of the City or its agents unless the Department accepts responsibility. An extension of time for completion of the work shall be the Contractor's remedy for such delay.

The Contractor shall not be entitled to additional monetary compensation for delays caused by the failure of a utility company or special district to relocate its facilities in timely manner. An extension of time for completion of the work shall be the Contractor's remedy for such delay. Relief from failure of utility companies to fulfill their responsibilities is discussed in subsection 105.11 of the Standard Specifications.

In subsection 105.22 (d) delete the last paragraph and replace with the following:

If these meetings do not result in a resolution or the participants mutually agree that they have reached an impasse, the Contractor may file a claim in accordance with subsection 105.24.

Delete subsection 105.23.

In subsection 105.24 change the reference to City and County of Denver and replace with Jefferson County:

In subsection 105.24 (c) delete the reference and address to CDOT Audit Unit and replace with Department:

Add subsections 105.25 and 105.26 as follows:

**105.25 Protection of Survey Markers.** Survey markers shall be protected as follows:

- (a) *Permanent Survey Markers.* Should the Contractor believe that a survey monument, control point, or benchmark will be disturbed by construction activities, the Contractor shall notify the Engineer not less than seven days prior to starting work in order that the Engineer may take necessary measures to insure the preservation of survey monuments, stakes and bench marks. The Contractor shall notify the Engineer and bear the expense of replacing any that may be disturbed without permission. Replacement shall be done by a Registered Land Surveyor at no expense to the Owner.

When a change is made in the finished elevation of the pavement of any roadway in which a permanent survey monument is located, the monument cover or box shall be adjusted to the new grade.

- (b) *Lot Stakes.* Unless otherwise directed by the Engineer or shown in the plans, the Contractor shall preserve existing survey stakes that mark property lines and corners. Any stakes that become lost or disturbed by his operations shall be replaced at the Contractor's expense by a registered land surveyor. Any lot corners marked on sidewalks that are designated for removal by the Contract Documents or the Engineer are not the responsibility of the Contractor for replacement.

**105.26 Maintenance During Free Time.** Maintenance during free time, shall meet the requirements of Sec. 105.19 and shall be considered incidental to the work.

## **REVISION OF SECTION 106 CONTROL OF MATERIAL**

Section 106 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsection 106.03 and replace with the following:

**106.03 Samples, Test, Cited Specifications.** Materials sampling and testing shall be performed at the expense of the Contractor. The Contractor shall employ an independent materials testing company to sample and test the materials or the finished product in accordance with the City Materials Testing Requirements, and the Frequency Guide Schedule of the CDOT Field Services Manual, per Section 720 of the City Special Provisions. All materials sampling, testing and inspection shall be performed by certified field technicians who work under the supervision of a registered professional engineer in the State of Colorado practicing in this field.

Field technicians shall furnish copies of failed test results to the Engineer within two working days of completion and prior to the next phase of construction. On a weekly basis, the Contractor shall furnish the Engineer with copies of all test results taken that week and a cover letter, signed by the supervising registered professional engineer, which summarizes the results and addresses any failed tests or inconsistencies.

Unless otherwise designated, all specifications, standards or policies referenced in Section 720 shall be the latest edition as revised or updated by approved supplements published and issued prior to the date of the advertisement for bids.

Subsection 106.08 shall include the following:

The Contractor will not receive compensation for storage of topsoil or other materials generated on site that are stored either on site or offsite for later disposal or inclusion into the Work.

Add subsection 106.14 as follows:

**106.14 Trade Names, Approved Equals, or Substitutes.** In order to establish a basis of quality, certain processes, types of machinery and equipment, or kinds of materials may be specified either by description or process or by designating a manufacturer by name and referring to that brand or product designation, or by specifying a kind of material. It is not the intent of the specifications to exclude other processes, equipment or materials of equal value, utility or merit.

Whenever a process is designated, or a manufacturer's name, brand or item designation is given, or whenever a process or material covered by patent is designated or described, it shall be understood that the words "or approved equal" follow such name, designation, or description, whether in fact they do so or not.

If it is desirable to furnish items of equipment by manufacturers other than those specified, as a substitute after the contract is executed, the Contractor shall secure approval prior to placing a purchase order or furnishing the same.

If the proposal includes a list of equipment, materials, or articles for which the Contractor must name the manufacturer at the time of submission of the bid, no substitutions therefore will be permitted after a proposal has been accepted without the express consent of the Owner.

#### **REVISION OF SECTION 107 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

Section 107 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 107.12 shall include the following:

Property pins, right-of-way markers and other survey corners shall remain undisturbed until a method of preserving or perpetuating such markers is approved by Owner. Should any such markers be disturbed, destroyed or removed without obtaining said approval, the Contractor shall be assessed for any costs incurred in resurveying, resetting, and registering said markers.

In subsection 107.15 change all references to CDOT to the City.

Subsection 107.15 shall include the following:

Certificates of Insurance shall be attached to the executed Contract Documents and shall become a part of the contract. These certificates shall include a provision that thirty days prior to insurance cancellation, written notice shall be given to the City.

Indemnification of Owner - Contractor hereby indemnifies and agrees to hold the Owner harmless for and on account of any act or omission in the completion and execution of the project specified herein, which indemnification shall extend to and include any damage of whatever sort or description, suffered by any person or entity, and shall include compensatory, punitive or special damages; and Contractor agrees to defend Owner hereunder, at Contractor's sole expense and if he fails to do so, to thereafter indemnify Owner, in addition to the above indemnification, for all court costs and attorneys fees incurred in any defense required to be undertaken by the Owner.

Add subsection 107.18 as follows:

**107.18 Contractor's Responsibility During Warranty.** The Contractor shall, at his sole expense and cost, remedy any defects in the work, and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of work unless a longer period is specified. The Owner will give notice of defects with reasonable promptness upon their discovery.

In subsection 107.25 change all references to Region Environmental to the City.

### **REVISION OF SECTION 108 PROSECUTION AND PROGRESS**

Section 108 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 108.02 delete the last sentence and replace with the following:

The Contractor shall commence work under the Contract within 14 calendar days of the date of the Notice to Proceed.

Subsection 108.05 shall include the following:

Working hours under this Contract shall be between 7:00 am and 5:00 pm. The Contractor shall not operate equipment before 7:00 am and shall schedule all work operations to be completed before 5:00 pm. Work after 5:00 pm will not be allowed except when required for circumstances beyond the Contractor's control and when approved by the Engineer. Work between 5:00 pm and 6:00 pm on more than two consecutive working days will be charged as one-half working day. Work after 6:00 pm on any day will be charged as one-half working day.

Contractor operations in lanes open to traffic are not allowed between the hours of 6:30 am to 8:30 am and 3:30 pm to 6:30 pm, unless otherwise approved by the Engineer. These restrictions apply to temporary delays including ingress and egress of materials, etc.

Subsection 108.08 shall include the following:

An extension of time for completion of the work shall be the Contractor's sole remedy for delays in performing this contract if such delay is caused, in whole or in part, by acts or omissions of the City or its agents unless the Department accepts responsibility.

An extension of time for completion of the work shall be the Contractor's remedy for delays in performing this contract caused by the failure of a utility company or special district to relocate its facilities in timely manner. Relief from failure of utility companies to fulfill their responsibilities is discussed in subsection 105.11 of the Standard Specifications and the City Special Provisions.

Delete subsection 108.09 and replace with the following:

**108.09 Failure to Complete Work on Time.** A daily charge will be made against the Contractor for each working day, including free time, that any Work shall remain uncompleted after elapse of Contract Time. This daily charge, determined by the original Contract amount for the Project from the table below, will be deducted from any money due the Contractor. This deduction will not be considered a penalty but as liquidated damages.

The schedule of liquidated damages set forth below is an amount, agreed to for purposes of this Contract by the Contractor and the City, as reasonably representing the additional costs incurred by the City, both for its time, labor and expenses, and for those damages and inconveniences suffered by the residents of the City as a result of delay in completion of the Project.

Schedule of Liquidated Damages

Original Amount of Contract		Liquidated Damages per Contract Day
For More Than	Up to & Incl.	
\$ 0	\$ 100,000	\$ 200
\$ 100,000	\$ 500,000	\$ 500
\$ 500,000	\$ 1,000,000	\$ 750
\$ 1,000,000	\$ 2,000,000	\$ 1,000

Due account shall be taken of any adjustments of the Contract Time for completion of the Work granted under the provisions of Subsection 108.07.

Permitting the Contractor to continue and finish the Work or any part thereof after the Contract Time has elapsed shall not be construed as a waiver on the part of the City of any of its rights under the Contract.

Deductions assessed as liquidated damages under this Section shall not relieve the Contractor from liability for any damages or costs resulting from delays to other Contractors on the Project or other Projects caused by a failure of the assessed Contractor to complete the Work according to Contract Time.

**REVISION OF SECTION 109  
MEASUREMENT AND PAYMENT**

In subsection 109.01 change all references to CDOT to the City.

In subsection 109.04 (c) 1. delete the formulas for Hourly Rate and Standby Rate (RR and SR respectively). Payment will be made on a flat rate for hourly and standby rental rates plus EOC.

Delete subsection 109.04 (f) and replace with the following:

- (f) The Contractor’s representative and the Inspector shall, on a daily basis, agree in writing on the quantities of labor, equipment and materials used for work, extra work, and/ or force account work.

Subsection 109.04 (h) shall include the following:

Time extension for force account work shall be allowed only if a controlling operation or critical path item of the project is interrupted. Time extension requests shall meet the requirements of subsection 108.08. Force account items shall be completed in a workmanlike manner so as not to cause undue delays.

In subsection 109.06 (a) delete the second sentence and replace with the following:

The amount to be retained will be 10 percent of the value of the completed work to a maximum of 5% of the total contract amount including change orders and contingency.

Subsection 109.06 (a) shall include the following:

At the time of the Preconstruction meeting, the Contractor shall submit to the City a schedule of partial progress payments. This schedule will show the percentage of Work completed and the date and dollar amount of each anticipated progress payment.

The City will pay any monies due the Contractor within 30 days of approval of a Request for Partial Payment.

Delete subsection 109.06 (b) and replace with the following:

- (b) Securities are not acceptable to the City in lieu of standard amount retained.

Add subsection 109.08 as follows:

**109.08 Final Guarantee.** All work shall be and is guaranteed by the Contractor for a specified period of one year from and after the date of **written** final acceptance of all work by the City, unless a longer period is specified. All other current applicable State statutes shall apply.

If within the guarantee period, non emergency repairs, changes, or replacements are required in connection with guaranteed work which, as determined by the City, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the contract, the Contractor shall, within 14 calendar days from receipt of notice from the City, and without expense to the City:

- (a) place in satisfactory condition, in every particular, all of such guaranteed work, correct all defects therein, or proceed with replacement of defective or unsatisfactory work where deemed necessary by the Engineer; and
- (b) make good all damage to the building site, equipment or contents thereof which, in the opinion of the Engineer, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with
- (c) the terms of the contract; and make good any work or material disturbed, or the equipment and contents of any building or structure on the site, in fulfilling any such guarantee.

In the case of emergency repairs, changes or replacements, the Contractor shall promptly upon receipt of Notice from the city and without expense to the City, perform the necessary actions to remediate the situation.



**REVISION OF SECTION 202  
REMOVAL OF STRUCTURES AND OBSTRUCTIONS**

Section 202 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 202.02 shall include the following:

Areas within existing asphalt pavement that are designated for removal or patching shall be sawcut to the full depth of the asphalt or cut by a method approved by the Engineer which leaves a vertical face on the existing pavement and no deformation of the surface at the cut. Limits of cutting for patching shall be as directed by the Engineer. Asphalt sawing or other approved cutting methods shall be incidental to the pay items for HBP (Patching), Removal of Asphalt, or pay items which include removal of asphalt pavement.

All street cuts shall be in straight lines. Irregular shaped cuts with more than four (4) sides or cuts within existing patches shall not be allowed. Street cuts shall have no longitudinal joints within the wheel tracks.

Trees with a specified trunk diameter measured one foot above the ground surface and shrubs that are designated for removal under this section shall be removed in accordance with the requirements of Section 201. Removal of remaining vegetation as required by the project will be paid under Section 201.

Irrigation lines to be abandoned shall be adequately capped at the point of abandonment to prevent leaks or blowouts of the line that is to remain. The irrigation lines that are to be abandoned can remain in place unless removal is necessary to allow other work.

Subsection 202.03 shall include the following:

All inlet castings, manhole rings and covers and other metal items relating to structures to be removed shall remain the property of the City or the owning utility company. This material shall be reused on the project where possible or as directed by the Engineer. Material not reused on the project shall be delivered to the City or owning utility company unless arrangements have been made for it to be picked up by the City or owning utility company.

Subsection 202.07 shall include the following:

Concrete from curbs, gutters, sidewalks and pavements may not be used in fills unless crushed to meet the gradation requirements for Class 4 Aggregate Base Course.

Subsection 202.09 shall include the following:

Planers shall operate moving against traffic in areas being planed in order to ensure that trucks used in hauling removed materials will be able to arrive and depart with the flow of traffic.

Planing shall result in a surface acceptable to the Engineer. Acceptability shall be based upon the following criteria:

1. Free of surface ridges in excess of ¼ inch.
2. Planed surface parallel to lane lines.
3. Surface area free of excess surface fines.
4. All planed surfaces, especially wheel ruts, show scoring by planer teeth.
5. Specified cut depth attained at edges of roadway appurtenances and curb lips.

Vertical cuts adjacent to traffic lanes from rotomilling over 1" depth shall be delineated at 50 foot intervals immediately after removal operations.

The Contractor shall use caution when planing around manholes, water valve boxes and other roadway appurtenances. Manholes, water valve boxes and other similar structures shall either be adjusted to below the bottom of the cut prior to commencing planing operations or cut around using planing equipment. The maximum deviation between the top of the milled pavement and top of the manhole or water valve box shall be no more than ¾ inch in areas open to traffic. This condition may be achieved by placing a temporary wedge of HBP around the structure. This temporary taper shall be removed prior to placement of paving fabric and new HBP.

Subsection 202.11 shall include the following:

Removal of trees will be measured by the actual number of trees removed with specified diameters measured 4.5 feet above the ground surface. Multiple tree trunks from one root structure with one trunk being the specified diameter will be considered one tree. Trees with a diameter less than 4" or when removal of trees is not included as a separate pay item, removal of trees shall be included in clearing and grubbing.

Removal of existing asphalt pavement for patching, to include asphalt sawing or other approved methods of cutting existing asphalt pavement, will not be measured but shall be incidental to the pay item for HBP (Patching).

Abandon irrigation line will be measured by the actual number of point of connections that require capping.

Subsection 202.12 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Removal of Tree (< 12")	Each
Removal of Tree (> 12")	Each
Abandon Irrigation Lines	Each

**REVISION OF SECTION 203  
EXCAVATION AND EMBANKMENT**

Section 203 of the CDOT Standard Specifications is hereby revised for this project as follows:

In subsection 203.03 (a) delete the second and third paragraph and replace with the following:

Embankment imported onto the project will be tested for water soluble sulfates using CP-L 2103 Method B. The average of three consecutive tests shall show that the sulfate content is not greater than that corresponding to the sulfate exposure level specified on the plans. No single test shall have a sulfate content more than 20 percent greater than that corresponding to the sulfate exposure level specified on the plans.

Subsection 203.05 (f) shall include the following:

Potholing consists of locating utilities by removal of pavements, excavation of materials of whatever character required to expose the utilities, replacement and compaction of the excavated material and patching the pavement. The Contractor will coordinate survey activities to document utility locations. The Contractor shall use extreme caution during this work. Any damage to existing utility lines or adjacent facilities shall be promptly repaired at the Contractor's expense.

Subsection 203.06 shall include the following:

Contractor shall use material excavated from the project for embankment to the greatest extent possible. The Engineer shall approve excavated material for placement as embankment on the project. Compaction shall be in accordance with AASHTO T99.

Embankment material imported to the site for inclusion in a pavement structure shall have a resistance value of at least 8 at 300 psi exudation pressure as measured by the Hveem Methodology. The Contractor shall submit test results to the Engineer for approval prior to importing embankment material. Earthen material imported to the site for other fill outside the roadway shall be easily compacted, stable material with zero to less than 2% swell/shrinkage potential, when a surcharge load of 200 psf is applied.

Subsection 203.09 shall include the following:

Proof rolling shall be performed on the finished subgrade and/or the ABC no more than 48 hours prior to placement of the next construction phase. Should inclement weather (any precipitation) occur between the end of the proof rolling and placement of the next construction phase then a second proof rolling shall be required. The Contractor shall notify the City a minimum of 24 hours prior to proof rolling in order to allow the City to observe the proof roll.

Proof rolling of the sub-grades shall be performed with a three axle loaded truck with at least 18,000 pounds per axle load on two of the axles and tire pressures of at least 80 psi. Documentation of these specifications shall be submitted to the City on every truck employed for proof-rolling. The loaded truck shall make a minimum of three complete passes for each area being tested.

Passing density tests shall not constitute passing proof roll. All areas found to be weak and which have failed, as determined by the City, shall be ripped, scarified, moisture conditioned as required, and re-compacted to meet the density specifications. These areas shall be retested for density and re-proof rolled for acceptance. Weak areas shall include, but not be limited to, areas that visually deform under load. All rework and retesting shall be solely at the Contractor's expense.

Delete subsection 203.11 and replace with the following:

**203.11 Earthwork – Rough Grade.** Rough grading shall consist of earthwork necessary to achieve the approximate grades when the excavation or embankment depth is less than 12 inches.

Delete subsection 203.12 and replace with the following:

**203.12 Earthwork – Fine Grade.** Fine grading shall consist of earthwork necessary to achieve the final and sub-grade elevations when the excavation or embankment depth is less than 12 inches.

Delete subsection 203.13 (f) and replace with the following:

(f) *Proof rolling*. Proof rolling will not be measured and paid for separately but shall be included in Section 306.

Add subsections 203.13 (g) and (h) as follows:

(g) *Earthwork – Rough Grade*. Earthwork – rough grade will be measured as the area in square yards that is graded.

(h) *Earthwork – Fine Grade*. Earthwork – fine grade will be measured as the area in square yards that is graded.

Subsection 203.12 shall include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Earthwork – Rough Grade	Square Yard
Earthwork – Fine Grade	Square Yard

**REVISION OF SECTION 210  
RESET STRUCTURES**

Section 210 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 210.02 shall include the following:

Any work performed by the Contractor on a utility facility is subject to inspection and approval by the owning utility company. The Contractor is responsible for coordinating inspection with the owning utility.

The contractor must give written notice to all customers affected by water service outages at least 24 hours before the water is turned off for this work. The Contractor shall give a minimum of 24 hours notice to the owning utility company before any work which will affect their facilities. The Contractor shall not operate any water valves without permission of the owning utility company.

Subsection 210.10 shall include the following:

Any existing manholes, water valves, range boxes, traffic control boxes, etc., which are required to be adjusted shall be adjusted to 1/4 inch below finished grade prior to or immediately following placement of the final lift of asphalt. The intent of this specification is that the freshly placed HMA be compacted around the structure after the structure is adjusted to finish grade. When adjusting valve boxes, the box shall be cleaned of all foreign debris such that the operating nut of the valve is fully accessible to operate. The work shall be subject to inspection by and approval of the owning utility and is incidental to the pay item for adjusting water valves.

Subsection 210.12 shall include the following:

The pay item for resetting, modifying or adjusting meter pits shall include all additional material required to modify, adjust and/or reset the meter pits and curb stops.

Tapping tee, valves, pipe, pipe fittings and other materials required to reset, relocate or extend a fire hydrant assembly will be included in the pay item for Reset Fire Hydrant.

Subsection 210.13 shall include the following:

Pay items shall include, unless otherwise specified, all new hardware and material.

Add subsections 210.14 – 210.16 as follows:

**210.14 Fire Hydrants.** If required on the drawings, before resetting, relocating or extending fire hydrants, the Contractor shall contact the owning utility for inspection of the removed hydrant. The Contractor may be required to excavate the existing tee and remove any pipe or valves at the tee and place a plug at the tee if required by the owning utility company. The new hydrant lead is to be constructed of all new pipe and other material.

**210.15 Water or Sewer Service Line.** This work shall be performed where necessary to remove, relocate, or replace a utility service line caused by a grade and/or line conflict with new construction. Adjustment work may entail complete relocation and replacement of the affected service line. Payment under this item shall include all costs associated with service line relocation. For reset work, the approximate limits of replacement would be the width of the trench. Payment under this item shall include all costs associated with service line restoration within the limits of the excavation.

**210.16 Water Meter Pit.** Adjustment work shall be performed on existing water meter pits. The Contractor will adjust existing water meter pit structures to grade. Adjustment of associated curb stops shall be included under this pay item. For reset work, the contractor shall remove the existing water meter pit and replace the existing structure with new meter pit structure material. Unless otherwise specified, required material will be supplied by the **CONTRACTOR**. The new meter pit will be relocated along the existing water lateral. This pay item also includes all work and additional material required to complete installation of the new meter pit structure to finish grade. Resetting the curb stop shall be included under this pay item. Modification work shall entail the conversion of the existing water meter pit cover to a heavy duty lid and frame adjusted to grade. This pay item shall also include related work on the associated curb stop. Unless otherwise specified, the heavy duty frame and lid will be furnished by the Contractor.

**REVISION OF SECTION 304  
AGGREGATE BASE COURSE**

Section 304 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 304.01 shall include the following:

This work includes the placement of recycled (reclaimed) asphalt produced from milling an existing asphalt street pavement as directed by the Engineer.

Subsection 304.02 shall include the following:

The source of aggregate for Aggregate Base Course is not designated. Approval of the aggregate as a source for the Class(es) of aggregate specified will be contingent on material meeting the appropriate gradation requirements and having a resistance value of at least 72 when tested the Hveem Stabilometer Method.

In general, the use of recycled materials is supported by the City and preference will be given to recycled materials as much as possible.

Recycled asphalt material shall be produced from milling an existing asphalt street or from crushing asphaltic pavement removed from a roadway. The material shall generally meet the gradation requirements of Class 4 or 6 Aggregate Base Course. The maximum size aggregate (material) will be determined by the Engineer in the field.

Recycled Portland cement concrete or asphaltic concrete may be used in lieu of natural or processed natural aggregate if it meets the general size, gradation and resistance requirements of the class of ABC specified and the substitution is approved by the Engineer.

Aggregate material for Stabilization Material (Granular) shall generally meet the requirements of Aggregate Base Course Classes 4, 5 or 6. Stabilization material may be crusher waste, reclaimed asphalt, reclaimed concrete, pit run gravels or other Contractor supplied material (minus 4 inch) acceptable to the Engineer. This material shall be readily compactable with minimal effort and shall be clean and free from contaminating materials such as clay or clay lumps and organic matter. The material shall not be cross mixed with other types of materials such as milled asphalt, non specific gravel materials, rock, etc. Presence of contaminating materials, clay or clay lumps or organic matter will be grounds for rejection by the Engineer.

Aggregate Base Course (Crusher Fines) shall be stabilized, in accordance with the manufacturer's recommendations, with a non-toxic, organic binder that is a colorless and odorless concentrated powder that binds the aggregate. The aggregate shall meet the following requirements:

**CRUSHER FINES (1/4" minus Aggregate Gradation)**

Sieve Size	Percentage passing by Weight
3/8"	100
#4	90 – 100
#8	75 – 80
#16	55 – 65
#30	40 – 50
#50	25 – 35
#100	15 – 20
#200	10 – 15

Subsection 304.04 shall include the following:

Recycled asphalt pavement material, in general, is intended for use in maintaining driveways and other accesses and to improve the subgrade characteristics during construction of the project. The material may be incorporated into the subgrade after the need for it in a particular location expires. Material shall be free of organic materials, clay and clay lumps and shall not be mixed with other materials prior to placement. The presence of contaminating or foreign material will be grounds for rejection by the Engineer.

Aggregate material for Stabilization Material (Granular) shall be placed on a geogrid material in the bottom of the excavation. The geogrid material shall be placed accordance with manufacturer's recommendation in the bottom of the over excavated area in the roadway to be stabilized. After placement of the geogrid material, the granular roadway stabilization material will be placed full depth. The Contractor shall minimize the amount of rubber tired equipment allowed on the stabilization material and shall preferentially use a small tracked dozer or loader to spread the granular material. After placement and rough shaping of the granular material, the surface may be shaped to final cross section with a maintainer. Water for compaction shall be sparingly applied as required. The use of vibratory equipment may be used as long as the subgrade does not show evidence of failure as evidenced by deflection of the aggregate surface.

Aggregate Base Course (Crusher Fines) shall be a placed in a compacted lift of 4 inch depth.

Subsection 304.07 shall include the following:

Recycled Asphalt Pavement will be measured by the ton of material placed as directed by the Engineer.

Stabilization Material (Granular) will be measured by the ton compacted in place and accepted by the Engineer.

Subsection 304.08 shall include the following:

The accepted quantities of Stabilization Material (Granular) will be paid for at the contract price bid per ton of material, as shown in the bid schedule.

The accepted quantities of recycled asphaltic concrete and recycled Portland cement concrete will be paid for at the contract bid price per ton of material as shown in the bid schedule. If no separate bid price is provided, the recycled material will be paid for as Aggregate Base Course or extra work.

<u>Pay Item</u>	<u>Pay Unit</u>
Stabilization Material (Granular)	Ton
Recycled Concrete Pavement	Ton
Recycled Asphaltic Concrete	Ton

**REVISION OF SECTION 403  
HOT MIX ASPHALT**

In subsection 403.01 the last paragraph shall include the following:

This work consists of constructing one or more courses of bituminous pavement on a prepared base in accordance with these specifications, and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established.

Subsection 403.03 shall include the following:

Areas to be patched back shall be saw cut, unless alternative methods of cutting which produce straight lines and vertical cuts are approved by the Engineer. Limits of cutting shall be as specified on the plans or as directed by the Engineer. Jagged edges are unacceptable and shall be replaced at the Contractors expense. Prior to placement of the patch, all exposed sides of the existing pavement shall be thoroughly coated with tack.

All materials excavated from the patch area shall become the property of the Contractor and hauled from the site.



**REVISION OF SECTION 412  
PORTLAND CEMENT CONCRETE PAVEMENT**

Section 412 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 412.03 shall include the following:

Concrete for cross pan and fillet pavement shall be Class "A", "B" or "D".

High Early Concrete shall reach a compressive strength of 3000 psi in 3 days to allow the new concrete pavement may be opened to traffic. Admixtures to decrease curing time shall be non-reactive to steel reinforcement and shall not include calcium chloride unless approved by the Engineer. All other requirements for the class of concrete specified shall be met.

When not specified or required at the direction of the Engineer, High Early Concrete may be used at the option and expense of the Contractor.

In subsection 412.12 delete the paragraph (d)

In subsection 412.14 delete the first sentence of the first paragraph and replace with the following:

Immediately after the finishing operations have been completed, the entire surface, including tined grooves and exposed sides of the newly placed concrete, shall be sprayed uniformly with an impervious membrane curing compound. The impervious membrane compound shall meet the requirements of AASHTO M 148, Type 2 and shall be volatile organic content (VOC) compliant.

Delete subsection 412.17 and replace with the following:

**412.17 Surface Smoothness.** The roadway surface smoothness shall be tested with a 10 foot straight edge as described in the Ten- Foot Straight Edge Method.

Subsection 412.18 shall include the following:

Mastic joint sealer is not considered suitable for joint material in concrete pavement. Joint material will be silicone based and shall be recommended for this usage by the manufacturer.

Subsection 412.23 shall include the following:

Concrete Pavement (High Early) will be paid at the same price as Concrete Pavement unless it is required by the Contract Documents or its use is directed by the Engineer.

Subsection 412.24 shall include the following:

<b>Pay Item</b>	<b>Pay Unit</b>
Concrete Pavement (High Early ____ Inch)	Square Yard

**REVISION OF SECTION 604  
MANHOLES, INLETS AND METER VAULTS**

Section 604 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 604.01 shall include the following:

This work also consists of installing inlet filter baskets as permanent water quality facilities.

Subsection 604.02 shall include the following:

Manholes, inlets and base sections shall be cast-in-place unless otherwise approved by the City in writing. Joints and bases shall be watertight.

*Mortar.* Mortar shall conform to the requirements of ASTM C378, or be proportioned 1 part Portland Cement to 2 parts clean, well graded sand which will pass a 1/8 inch screen. Admixtures may be used not exceeding the following percentages of weight of cement: hydrated lime, 10 percent, diatomaceous earth or other inert materials, 5 percent. Consistency of mortar shall be such that it will readily adhere to the precast concrete if using the standard tongue and groove type joint. If the keylock type joint is used, the consistency shall be such that the excess mortar will be forced out of the groove and support is not provided for the next manhole section to be placed. Mortar mixed for longer than 30 minutes shall not be used.

*Preformed Plastic gaskets.* When approved, preformed plastic gaskets may be used in lieu of mortar type joints and shall meet all the requirements of Federal Specification SS-S-00210.

*Inlet Filter Basket.* Inlet filter baskets shall consist of a fiberglass shelf and mounting system that directs the runoff from the inlet into the basket and positions the basket under the access manhole. The basket shall be made of stainless steel and consist of a three level screen that captures coarse, medium and fine materials. The basket shall also contain a boom that collects hydrocarbons. The system must also allow the runoff to bypass the system if it is full. The inlet basket shall be High Capacity Curb Inlet Basket as manufactured by Suntree Technologies Inc. or a City approved equal.

In Subsection 604.04 (b) delete the second paragraph and replace as follows:

When a manhole is located in the pavement area, the ring and lid casting shall be adjusted to 1/4" below finished grade prior to or during placement of the final lift of asphalt. The intent of this specification is to compact the freshly placed pavement material during rolling of the remainder of the roadway. Rim elevations shown on the plan are approximate. Final elevations will be determined in the field.

In Subsections 604.06 delete all references to payment for manholes and inlets based on depth.

Subsection 604.07 shall include the following:

<b>Pay Item</b>	<b>Pay Unit</b>
Inlet, Type _____	Each
Inlet, WR Curb Inlet (_____)	Each
Inlet, WR Valley Inlet (_____)	Each
Inlet Filter Basket	Each

**REVISION OF SECTION 608  
SIDEWALKS AND BIKEWAYS**

Subsection 608.01 shall also include the following:

This work also consists of the construction of sidewalk chases, raised crosswalks, and patterned concrete in accordance with the Contract Documents. This work includes the installation of detectable warnings on concrete curb ramps at the locations shown in the plans and in accordance with the plans.

Subsection 608.02 shall include the following:

Frame for sidewalk chase shall meet the requirements of ASTM A36 for Carbon Steel, or ASTM B209, B211, B221, or B241 for Aluminum Alloy 6061-T6 or 6063-T6. Top shall be hot dipped galvanized steel.

Pattern concrete shall be Class B, full depth Davis Color "Brick Red", imprinted "Windsor Cobble" pattern by Brickform (or approved equal). Imprinting forms shall be released with Brickform RA-600 Light Gray Antique Release Agent (or approved equal) in accordance with the Brickform Antique Release Agent Technical Information sheet. All antiqued surfaces shall be broom cleaned, pressure washed, and sealed with 2 coats of Brickform Masterseal Sealer (or approved equal), after a curing period of 28 days. Use and application of all products shall be per manufacturer:

Brickform by Rafco Products  
11061 Jersey Blvd  
Rancho Cucamonga, CA 91730  
800-483-9628  
www.brickform.com

Surface applied and cast in place detectable warnings tiles for the ramps shall be red in color and comply with all Americans with Disabilities Act (ADA) requirements. The detectable warnings nominal tile size shall be determined by the location. In general, the minimum size shall be 24" x 36" surface applied for retrofits and 24" x 60" cast in place for new construction. At locations where a ramp is being constructed or reconstructed and a 24" x 60" tile cannot be installed then a 24" x 36" cast in place shall be allowed. The City has the sole determination as to where and what size tile shall be placed.

The detectable warning tiles shall be constructed per CDOT Standard Plan M-608-1 specifications. The tiles shall be manufactured by Armor-Tile® or a City approved equal, "Brick Red" in color. Unless otherwise stated, all manufactures' recommendations and specifications shall be strictly adhered to.

In subsection 608.03 (b) delete the last sentence.

Subsection 608.03 (e) shall include the following:

Expansion Joint material shall be considered incidental to the sidewalk pay item.

Subsection 608.03 (f) shall include the following:

Only clear VOC compliant curing compound shall be used to cure colored concrete. Only white VOC compliant curing compound shall be used to cure grey concrete.

Add subsections 608.03 (g) and (h) as follows:

- (g) *Structures.* Meter pits and manholes shall be installed or adjusted such that the frame and cover rest flush with the sidewalk. Cover shall not move within the frame and shall be reinforced as necessary to prevent deflection under light vehicle wheel loads (pickup truck).
- (h) *Cleanup of residual colored concrete or Release Agent.* Release Agent powder or residual colored concrete shall be removed from job site in a manner to avoid the material being washed offsite or into curb flowlines and the City storm drainage system. All materials collected shall be disposed of properly. All residual colored concrete or release agent powder shall be removed from the work area by sweeping & dustpan, vacuuming, and/ or power washing & containment methods. Following the application of patterned concrete, should

evidence exist that residual colored concrete or release agent powder has been transported to adjacent curb flowlines or into the City storm drainage system, the Contractor shall clean all affected facilities to the satisfaction of the Engineer. Through actions of the Contractor, should any deleterious construction material reach the City storm drainage system and discharge into local waterways, the Contractor shall perform necessary environmental cleanup per the satisfaction of the Engineer, and the State of Colorado Department of Public Health and Environment.

Delete subsection 608.05 and replace with the following:

**608.05.** Concrete curb ramps will be measured by the unit. The colored concrete portion (if any) of concrete curb ramps and raised crosswalks will not be measured for payment but shall be included in the price for ramps and crosswalks.

Pattern concrete will be measured by the square yard of finished surface complete in place and accepted.

Sidewalk chase will be measured by each chase installed.

Subsection 608.06 shall also include the following:

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete Curb Ramp (Type ___)	Each
Pattern Concrete (___" thick)	Square Yard
Raised Crosswalk	Linear Feet
Sidewalk Chase	Each

Add subsection 608.07 as follows:

**608.07 Pattern Concrete.** The following specifications are intended to be general specifications. The actual construction work shall be performed in accordance with the appropriate manufacturer's recommendations as modified by these specifications. The Contractor shall:

- (a) Provide product data and installation instructions for imprinting tools, release agent, sealing agent, and joint sealants to the Engineer at the Preconstruction Conference.
- (b) Perform all pattern concrete work per manufacturer specifications and supply a foreman or supervisor who has completed at least three previous pattern concrete installations.
- (c) Supply a finished jobsite sample of at least 4' by 4' of the pattern and coloring specified for approval by the Engineer prior to start of construction. The sample may, if approved by the Engineer, be incorporated into the work.
- (d) Concrete shall be wooden float finished prior to applications of coloring agents and pattern imprinting.

The subgrade in areas to receive pattern concrete shall be prepared in the same manner as sidewalk. Concrete shall be placed in the same manner as sidewalk concrete and shall be a minimum of 4 inches thick prior to application of the patterning devices.

**REVISION OF SECTION 609  
CURB AND GUTTER**

Section 609 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 609.03 (b) shall include the following:

All curb, gutter faces shall be formed. The terminal ends of all work shall be formed to maintain a true vertical edge. Forms shall be straight, true and in good condition. The Engineer reserves the right to order forms which he deems unsatisfactory removed from use in the Work. In the event curb and gutter are to be contiguous but not monolithic, and the sidewalk slopes to the curb head, the top of the curb head shall be finished to slope to the street side of the curb.

Subsection 609.03 (d) shall include the following:

All upper edges of each section shall be tooled. Sidewalk joints shall line up with curb and gutter joints when contiguous. Tooled contraction joints shall be placed where form joint templates are placed. In the event the tooled joint and the form joint template do not coincide and a random crack appears outside the tooled joint, the Contractor will be required to remove the improperly cracked joint. Removal limits will be 1/3 the distance to the next joint on either side of the unsatisfactory joint. In the event contiguous joints are unsatisfactory, the entire stone between the joints will be removed to the outside of the unsatisfactory joint. Concrete sawing will be required to provide a clean joint.

Subsection 609.03 (e) shall include the following:

Expansion material or approved bond breaker material shall be installed between curb and gutter type 2 and abutting sidewalk for the full depth and length if the pour is not monolithic.

**REVISION OF SECTION 614  
TRAFFIC CONTROL DEVICES**

Section 614 of the CDOT Standard Specifications is hereby revised for this project as follows:

Delete subsections 614.08 (b) – (c) and replace with the following:

- (b) *Traffic Signal Controller*. The traffic signal cabinet shall be an Econolite ASC/3. No equal or equivalent will be considered.
- (c) *Controller Cabinets*. The traffic signal cabinet shall be an Econolite TS2 T1 PNG CAB ASSY (system ready) with a slide out tray. No equal or equivalent will be considered

1. *Cabinet Shell*. The cabinet shell shall meet or exceed the requirements of NEMA 3R rating with the following additions:

The cabinet shell shall be 0.125 inch thick aluminum Type 5052-H32. External welds shall be made using heliarc welding method, whereas internal welds shall be made by the wire or heliarc method. All welds shall be neatly formed and free of cracks, blow holes and other irregularities. All inside and outside edges of the cabinet shall be free of burrs. The exterior surface shall be polished graffiti free aluminum.

The cabinet shall be designed with a sloped top to prevent the accumulation of water on its top surface.

The door opening shall be double flanged on all four sides. A door restraint shall be provided to prevent door movement in windy conditions. The cabinet door shall be a minimum of 80% of the front surface of the cabinet and hinged on the right side when facing the cabinet. The hinges shall be continuous and bolted to the cabinet door using 1/4-20 stainless steel carriage bolts and ny-lock nuts. The hinges shall have a 0.120 inch diameter stainless steel hinge pin capped top and bottom to render it tamper proof. The door latching mechanism shall be a 3-point draw roller type with push rods of 0.250 inch by 0.750 inch steel, minimum. Rollers shall have a minimum diameter of 0.875 inch and be made of nylon with a 0.140 inch steel center. An outside door opening handle will be furnished and shall be stainless steel with a 3/4 inch diameter shank. The latching handle shall have a provision for locking in the closed position. The cabinet shall be provided with louvered vents on the main door. The inside of the main door shall have a washable metal mesh air filter held firmly in place by bottom and top brackets and a spring loaded upper clamp.

The inside of the main door shall be provided with a brace at least 15 inches long, 6 inches high and 1/2 inch deep. A print envelope of at least 15 inches by 12 inches and 10 mil thickness shall be mounted to this brace, with washers to prevent ripping.

A switch (police door) compartment with removable back panel shall be supplied on the outside of the cabinet main door.

The switch compartment and main door shall be furnished with a gasket that satisfies the physical properties as found in UL508 Table 21.1 and will form a weather tight seal between cabinet and door.

The switch compartment door lock shall be Corben R357SGS series or equal and have a key hole cover. The main door shall have a Corben #1548-1 or equal lock with cover. Two keys of each type shall be supplied with each cabinet.

Exhaust air will be vented out between the top of the cabinet and door. The exhaust area shall be screened with material having a maximum hole diameter of 0.125 inch. A removable fan plate shall be furnished with a 100 CFM ball bearing fan controlled by an adjustable thermostat. An incandescent light shall also be mounted to this plate.

Eight (8) phase cabinets shall be "P" type and supplied with 2 shelves as manufactured by Econolite.

A "P" type shell will be approximately 56 inches high, 38 inches wide and 26 inches deep excluding the door.

2. *Cabinet Wiring*. All conductors used shall be 19 strand #22 AWG or larger Type B nylon jacketed polyvinyl chloride or irradiated cross linked polyethylene. Conductors that are # 14 AWG or larger as an option shall be UL type THHN. The cabinet ground conductor feeding the ground point within the cabinet shall have the same

amperage as the main breaker. A single #14 AWG conductor shall supply no more than 3 load switches. If each load switch is wired separately, then # 16 AWG or larger conductor shall be used.

The signal common ground buss (AC-) shall not be grounded to the cabinet and shall provide at least 10 terminals. An earth ground buss shall be provided and have at least 6 terminals. Wiring within the cabinet shall be neatly arranged and laced or enclosed in a protective sleeve. All crimp style connectors shall be applied with a proper tool which prevents opening of the handles until the crimp is completed.

3. *Cabinet Components.* Each cabinet shall be supplied with a surge arrestor comprised of at least a metal oxide transient suppressor and a dual gas tube suppressor.

The metal oxide suppressor shall have:

Recurrent Peak Voltage:	150 VDC
Energy Rating, Maximum:	20 Joules
Power Dissipation, Average:	0.85 Watts
Peak Current for Less than 7 Microseconds:	1250 amperes

The dual gas tube shall have:

Breakdown:	300-500 VDC
Impulse Breakdown:	Less than 1000V in less than 1.1 microseconds at 10KV/USEC
Operating Delay:	Less than 0.1 US when measured by applying 1500 VDC in less than 0.1 US.
Energy Application:	Withstands 20 AMP AC for 1 second applied 10 times at 3 minute intervals on either side
Current Rating:	40,000 amp (8/20 impulse)
Capacitance:	6 Picofarads, line to GND

A radio interference suppressor (RIS) shall be supplied and be hermetically sealed in a substantial metal case filled with a suitable insulating compound. Four phase cabinets shall have RIS rated for 30 AMP minimum, 8 phase cabinets shall have RIS rated at 60 AMP minimum.

Three circuit breakers shall be provided which are UL approved and of the magnetic type. Breakers shall be quick-break type on either manual or automatic operation. The operating mechanism shall be enclosed and shall be trip-free from the operating handle on overload and be trip-indicating. The main breaker on a 4 phase cabinet shall be 30 AMP and on an 8 phase cabinet shall be 50 AMP. A 15 AMP breaker shall be used to power the controller, conflict monitor, and detectors. A 15 AMP breaker shall be wired from incoming AC power and supply the fan, cabinet light, and ground fault interrupter outlet.

The fan located on the vent panel shall be fused at 125% of its motor amperage. A mercury contactor shall be used to switch AC power to the load switches and its amperage shall match or exceed the main breaker amperage.

The switch compartment located on the outside of the main door shall have an auto/flash and signal lights on/off switch. The police panel auto/flash switch shall restart the controller when switched from the flash to the auto position. This switch shall also stop time the controller in the flash position if the stop time switch is in the flash stop timing position.

A panel located on the inside of the main door shall have a fuse holder and fuse for the vent panel's fan, controller on/off switch, auto/flash switch, stop time /on/off/flash stop timing switch, and a ground fault interrupter outlet. As an option, the ground fault interrupter outlet may be supplied on the load switch panel. The conflict monitor shall stop time the controller regardless of the switch positions.

Detector test switches shall be provided on the inside door panel and shall be momentary type push button switches used to place manual calls into the controller during actuated operation. These switches shall be in parallel with detector amplifier relay closure circuits. One switch will be provided for each vehicle phase and pedestrian phase.

Door switches of the push button type shall be provided to turn off the cabinet light and controller display when the door is closed.

The load bay panel shall be designed to allow access to the back plane for servicing. Wing nuts or other threaded fastening devices which are hand loosened or hand tightened shall be provided. The panel shall be

designed to separate from the cabinet without the need to remove any internal cabling. Unsoldering wires to remove this panel is unacceptable. Connections to all load bay components can be crimped or push-on connectors.

A system interface panel, with necessary cables, shall be installed on the left side wall of the cabinet. This interface panel shall have all termination points to effect all inputs and outputs of the latest version of the Econolite Zone Monitor Closed Loop Signal System. At a minimum, all monitoring functions are to be installed. System detectors will be installed as called for on the plans.

4. *Detection.* Eight phase cabinets shall be supplied with a permanently fixed 7 slot card rack. A power supply plug-in module capable of supplying +24 VDC power to each slot shall be provided with the card rack.
5. *Flasher.* The cabinet shall be equipped for alternating flashing operation of signal lights with a 2 circuit solid state flasher in accordance with latest NEMA specifications (15 AMP per circuit).
6. *Load Switches.* The load switches shall be in accordance with the latest NEMA specifications and shall have 3 input and 3 output L.E.D. indications on the front panel. The load switches shall contain 3 separate cube type solid state relays and shall have triacs rated for 25 AMPS but de-rated to 10 AMP when used in the load switch assembly. Cabinets shall be supplied with the correct number of load switches necessary to accomplish the phasing as shown on the plans.
7. *Flash Transfer Relay.* Flash transfer relays shall be as manufactured by Midtex Model #136-62T3A1, 120 VAC, DPDT, 30 AMP with Jones plug base and dust cover or approved equal. One flash transfer relay shall be provided for every two vehicular traffic phases (including overlaps).
8. *Conflict Monitors/Malfunction Management Unit (MMU).* The conflict/voltage monitor shall comply to Part 6 of NEMA Standard TS-1, 1983. Bidders will be required to supply documentation with their bid from an independent laboratory that the conflict monitors they propose to furnish have passed all NEMA certification and environmental tests. In addition, the unit must also be capable of detecting the following error conditions:
  - A. Simultaneous sensing of active yellow and green inputs on a channel.
  - B. Simultaneous sensing of active red and green or yellow inputs on a channel.

If either of these conditions exist for less than 200MS, the unit shall not trigger. If either of these conditions exist for more than 500MS, the unit shall trigger.
  - C. Absence of a 2.8 second period of an active yellow input on a channel during red to green to yellow to red sequence.

Functions #1 and/or #2 and #3 shall be enabled on a per channel basis via front panel accessible programming devices. One or both of the above dual combinations (#1 & #2) shall be selectable via front panel accessible programming devices.
  - D. Absence of a logic input transition from the cabinet controller watchdog circuitry for 1500MS (+/- 100MS) shall cause the unit to trigger. This function shall be enabled via a front panel accessible programming device.
  - E. Absence of or an improperly seated programming card shall cause the unit to trigger.

Should one of these conditions exist which triggers the unit, it shall cause the output relay contacts to transfer. These contacts shall remain in this state until the unit is reset by activation of front panel control of the external reset input. AC+ power interruption shall not reset the unit once it has been triggered. Upon restoration of AC+ power to the unit, all display indications shall return to their original state before the interruption.
  - F. A voltage monitor latch function shall be provided which will sense an improper voltage level at the controller voltage monitor input or either of the +24 V monitor inputs and cause the unit to trigger. If this function is enabled via a front panel accessible programming device, restoration of proper voltage levels will not reset the unit. Only a manual reset or external reset will reset the unit.
  - G. When the AC+ line voltage is below the drop-out level of 92VRMS for 475MS (+/-25MS), the unit will suspend all fault monitoring functions, de-energize the output relay, and de-energize the start relay. The power indicator on the front panel will blink at a rate of 2HZ to indicate the brown-out status.



When the AC+ line voltage returns above the restore level of 100 VRMS for 100 MS (+/-16 MS), the monitor will resume normal operation and the power indicator on the front panel will remain illuminated. After a 2.5 second (+/-1 second) delay, the start relay will be energized. After a programmable delay determined by front panel accessible programming device, the output relay will be energized. The delay shall be programmable from 4 seconds to 15 seconds in 1 second increments. A 0.5 second delay shall be provided for test purposes.

- H. An internal watchdog shall be provided to assure continuous operation of internal microprocessor device. Failure of this circuitry to detect a logic input transition from the microprocessor device for 100 MS or a DC supply voltage sufficient to assure proper operation shall cause the unit to trigger.
- I. If a reset command is received from either the front panel control or the external reset input for a continuous duration of more than 120 seconds, the unit will ignore the reset command and begin normal monitoring functions.
- J. A real time clock shall be provided to mark the date and time when the unit is triggered by an error condition. Backup power to the real time clock shall allow it to maintain timing accuracy during interruptions of AC+ power to the unit. Automatic adjustments should be made to the time of day and date to accommodate leap years and daylight savings time.
- K. In addition to displaying the fault status and field output status for an error condition which may have the monitor unit currently triggered, the unit shall maintain a complete record of at least the last 9 faults which caused the monitor to trigger. These events should be able to be reviewed at any time via activation of a front panel control. This fault record shall not be lost due to AC+ power interruptions.
- L. All critical timing functions shall be accomplished by digital methods and shall utilize either the power line frequency or a quartz crystal based timer. All monitoring functions except conflict monitoring shall have a dedicated timer unique to each channel being monitored.
- M. A field input monitoring function (BND) shall be provided to sense improper input wave forms on the field signal inputs. Improper inputs may result from irregularly rapidly blinking (flickering) inputs, constant extraneous noise, or dimming operations other than half-waved suppressed.
- N. The monitor unit shall be capable of verifying the program card information by displaying the channels programmed as permissive in a sequential fashion for each channel monitored via front panel control.
- O. The monitor unit shall be capable of displaying the fault timing values being used to trigger the monitor for conflicts, red failures, controller voltage monitor (CVM) and 24V monitor (24 V-I & 24 V-II) conditions, dual indications, clearance failures and controller watchdog failures (if enabled) via front panel control. If any fault monitoring functions are disabled by control inputs, red enable or +24V monitor inhibit, this shall be indicated. Channels which are selected for dual indication and clearance monitoring via the front panel accessible programming devices shall also be displayed.
- P. An infrared LED output shall be provided to transfer to a hand held printer all internal settings and previous faults. The printer is not required at this time.
- Q. The power, fault, and monitor fail indicator shall be LED type. All other displays and indications shall be LCD type. The minimum display indicators are required as follows:
  - i. Triggering of the conflict monitoring portion of the unit.
  - ii. Triggering of the red monitoring portion of the unit.
  - iii. Triggering of the sequence monitoring portion of the unit.
  - iv. Triggering of the dual monitoring portion of the unit.
  - v. Triggering of the controller voltage monitoring or controller watchdog monitoring portion of the unit.
  - vi. Triggering of the +24V monitor #1 portion of the unit.
  - vii. Triggering of the +24V monitor #2 portion of the unit.
  - viii. Triggering of the program card monitoring portion of the unit.
  - ix. Triggering of the internal watchdog portion of the unit.
  - x. Time of day and date display.
  - xi. Four indications per channel which display an active red, yellow, or green input for each channel monitored.
  - xii. AC+ power indicator which is flashing when AC+ power is below 92 VRMS and illuminated when AC+ line voltage returns above 100 VRMS.

- xiii. One indicator per channel which identifies a channel as being involved in an error condition which has triggered the unit.
- xiv. Triggering of the field input monitoring (BND) portion of the unit.

Eight (8) phase cabinets shall be supplied with a Malfunction Management Unit (MMU).

9. *Documentation.* Two paper copies of the cabinet prints shall be accurate and complete and shipped with each cabinet. An additional copy shall be supplied in digital format (DXF) on 3.5 inch high density diskette. If additions or deletions are necessary to the cabinet as supplied, a new print will be supplied. Corrections to an existing print will not be accepted. A quality assurance sheet shall be supplied stating the following:
- A. The date of the test.
  - B. The duration of the test.
  - C. The method of testing.
  - D. If the testing involved components, the manufacture and model number of the devices used.
  - E. The technician's signature (not initials).
  - F. Quality control supervisor's signature (not initials).
  - G. The serial number or other unique identifier of the cabinet.

Subsection 614.08 (d) shall include the following:

Detector units shall be card rack mounted plug-in type 3M Canoga 400 4-channel units.

Subsection 614.08 (e) shall include the following:

Micro Detector shall be as supplied by 3M Micro Probes.

Subsection 614.08 (f) shall include the following:

The push-button assembly shall meet the requirements for accessible pedestrian signals as outlined in the latest edition of the "Manual of Uniform Traffic Control Devices" Chapter 4E. Installation shall be done in accordance with the manufacturer's specifications.

Subsection 614.08 (g) shall include the following:

Traffic signal poles, pedestals, and mast arms shall be of the general configuration shown on Standard Drawings. All traffic signal poles and mast arms shall be designed to meet the requirements outlined in the latest edition of "Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals", published by AASHTO, for a wind velocity of 90 mph with a 1.3 gust factor. Signal poles shall be supplied with a 16.5 inch bolt pattern for mast arms 35 feet and less or with a 20 inch bolt pattern for mast arms in excess of 35 feet. Hand holes are to be supplied at the base and across from the mast arm fitting.

Subsection 614.08 (h) shall include the following:

(h) *Traffic Signal Faces.*

1. *Traffic Signal Units.* All signal units shall be of the individual section, adjustable type, black polycarbonate. Signal units shall be supplied by Eagle, IDC or Econolite.

Programmable heads shall be Cast Aluminum frame units supplied by 3M.

Visors shall be detachable, 12 inch tunnel type, open at the bottom; be black in color on the outside and flat black on the inside.

Reflector shall be silvered glass or Alzak type units.

Lenses shall be in accordance with Institute of Transportation Engineers (ITE) Specifications.

Sockets shall be fixed focus.

Doors on the signal heads for the installation of lamps and lens replacement or other maintenance shall not require use of any tool to be opened. Doors and lenses shall be equipped with neoprene weather proof gaskets to ensure against infiltration of moisture, road film and dust. Each three-color signal unit shall have the socket leads from all signal sections connected to a terminal board stamped identifiable with terminals. There shall be

a terminal for color indication plus a common terminal where one lead from each socket shall terminate. The terminal board shall be mounted in the middle section and be properly insulated. All openings, top and bottom, shall be for 1 ½ inch pipe or pipe mounting brackets. Gaskets shall be supplied for top and bottoms openings.

2. *Pedestrian Signal Units.* 18 inch one-way ICC pedestrian signal head as specified on the plans. The specifications are the same as subsection 614.08 (h) with the following exceptions:

- A. Walk/Don't Walk Indications shall be symbolized and side by side.
- B. Visors shall be egg crate type and heads shall be black.

3. *Countdown Pedestrian Signal Units.* Single, self-contained retrofit module for clamshell housing.

Two message overlay combining Portland Orange LED for the "Hand" and White LED for "Walking Man."

Double digit display for countdown made of Red LED's.

Timing is derived directly from the controller and no timing shall be programmed, or otherwise initiated.

Countdown numerals shall be illuminated continuously during countdown and not alternating.

Pedestrian signal head shall blank out countdown portion if the countdown is different than the controller.

Hand/Man indications shall be solid style, not outline.

Countdown pedestrian signals shall consist of Portland orange numbers that are at least 150 mm (6-inch) in height on a black opaque background. The countdown pedestrian signal shall be located immediately adjacent to the associated UPRAISED HAND (symbolizing DONT WALK) pedestrian signal head indication.

The display of the number of remaining seconds shall begin only at the beginning of the pedestrian change interval. After the countdown displays zero, the display shall remain dark until the beginning of the next countdown.

The countdown pedestrian signal shall display the number of seconds remaining until the termination of the pedestrian change interval. Countdown displays shall not be used during the walk interval, or during the yellow change interval of a concurrent vehicular phase.

4. *LED Traffic Signal Faces.* All traffic signal faces (vehicular and pedestrian) shall be Light Emitting Diode (LED) type, unless otherwise specified by the City. The LED traffic signal faces shall conform to the requirements of subsection 713.11.

Subsection 614.08 (i) shall include the following:

All back plates are to be of aluminum. Back plates shall provide a minimum 8 inch border for all 8 and 12 inch signal heads.

Delete subsection 614.08 (k) and replace with the following:

(k) *Traffic Signal Electrical Conductors and Control Cable.* Conductors and cables shall conform to subsection 713.11.

1. *Signal Cable.* #14 AWG multi-conductor stranded copper wire manufactured to meet IMSA 19-1 specifications or approved equivalent. Each conductor in the cable will be individually insulated and rated at 600 volts. There shall be a minimum of 4 and a maximum of 9 strands per conductor. As a minimum, one spare conductor shall be provided for each cable run.
2. *Telephone Interconnect Cable.* The telephone interconnect wire shall be #19 AWG, 6 twisted pairs, shielded cable, with petrolatum-polyethylene gel filling compound. The cable shall meet R.E.A. Specification PE-39 (Clifford of Vermont Catalog #6P19-B1-BJFC or approved equal).

No splicing of the interconnect cable will be allowed. The cable shall be installed between two adjacent controller cabinets in continuous runs.

All telephone interconnect cable pairs will be connected to either active or spare terminal points provided in the controller cabinet. The Contractor shall identify and label all terminal points.

All interconnect wires shall be checked after installation to determine their resistance and residence to ground. Each pair shall be shorted together at one end and a resistance check will be made at the other end. Resistance will be checked between each conductor and ground. All resistance readings shall be recorded showing value, color and location of wire. Data is to be supplied to the City within 30 days of completion of the project.

At the terminal points the jackets shall be stripped and the ends taped. Gel filling compound shall be removed using filled cable cleaner.

3. *Fiber Optic Interconnect Cable.* Where specified on the plans, interconnect wire connecting traffic signal controller cabinets shall be fiber optic type. Fiber optic cable runs consist of a main cable, which runs the length of the project, and connects to the individual local controller cabinets.

Fiber optic cable shall be loose tube non-armored outdoor cable consisting of 24 single mode fibers and 12 multi-mode fibers and complying with the following specification for fiber optic cable. Fiber optic cable for installation in conduit shall meet the applicable portions of I.M.S.A. Specification 60-2 or approved equal. A 16 gauge (minimum) stranded trace wire shall be installed in the conduit with the fiber cable.

- A. *General Considerations.* The fiber optic cable shall meet all requirements stated in the specification. The cable shall be an accepted product of the United States Department of Agriculture Rural Electrification Administration (REA) as meeting requirements of 7CFR1755.900.

The cable shall be new, unused and of current design and manufacture.

Connectors shall be "ST" single mode type.

- B. *Fiber Characteristics.* All fibers in the cable must be usable fibers and meet this specification:

All optical fibers shall be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical and environmental requirements of this specification.

Each optical fiber shall consist of a doped silica core surrounded by a concentric silica cladding.

The single-mode fiber utilized in the cable specified herein shall conform to the following specifications:

Typical Core Diameter:	8.3 $\mu\text{m}$ .
Cladding Diameter:	125.0 $\pm$ 1.0 $\mu\text{m}$ .
Core-to-Cladding Offset:	$\leq$ 0.8 $\mu\text{m}$ .
Cladding Non-Circularity:	1.0%.
	Defined as: [1-(min. Cladding dia. + max. Cladding dia.)] X 100
Coating diameter:	245 $\pm$ 10 $\mu\text{m}$ .
Colored Fiber Diameter:	nominal 250 $\mu\text{m}$ .
Attenuation Uniformity:	No point discontinuity greater than 0.10 dB at either 1310 nm or 1550 nm.
Attenuation at the Water Peak:	The attenuation at 1383 $\pm$ 3 nm shall not exceed 2.1 dB/km.
Cutoff Wavelength:	The cabled fiber cutoff wavelength shall be $\leq$ 1250 nm.
Mode-field Diameter (Petermann II):	9.30 $\pm$ 0.50 $\mu\text{m}$ at 1310 nm 10.50 $\pm$ 1.00 $\mu\text{m}$ at 1550 nm
Zero Dispersion Wavelength:	( $\lambda_0$ )-1301.5 nm $\leq$ ( $\lambda_0$ ) $\leq$ 1321.5 nm.
Zero Dispersion Slope:	( $S_0$ )- $\leq$ 0.092 ps/(nm <sup>2</sup> -km)

The coating shall be a dual layered, UV cured acrylate applied by the fiber manufacturer. The coating shall be mechanically strippable without damaging the fiber.

- C. *Fiber Specification Parameters.* All fibers in the cable shall meet the following requirements:

When tested in accordance with FOTP-3, "Procedure to Measure Temperature Cycling Effects on Optical Fiber, Optical Cable and Other Passive Fiber Optic Components", (single-mode only), the average change in attenuation at extreme operational temperatures (-40°C to +70°C) shall not exceed 0.05 dB/km at 1550 nm. The magnitude of the maximum attenuation change of each individual fiber shall not be greater than 0.15dB/km at 1550 nm.

Required Fiber Grade - Maximum Individual Fiber Attenuation

The maximum dispersion for single mode optical fibers shall be  $\leq 3.3\text{ps}/(\text{nm}\cdot\text{km})$  for 1285 nm through 1330 nm and shall be  $\leq 18\text{ps}/(\text{nm}\cdot\text{km})$  at 1550 nm.

Specifications for Outdoor Cables:

- i. Optical fibers shall be placed inside a loose buffer tube.
- ii. Each buffer tube shall contain up to 6 fibers.
- iii. The fibers shall not adhere to the inside of the buffer tube
- iv. Each fiber shall be distinguishable from others by means of color coding or numbers according to the following:
  - a. Blue
  - b. Orange
  - c. Green
  - d. Brown
  - e. Slate
  - f. White

The above colors shall meet EWTIA-598, "Color Coding of Fiber Optic Cables".

- v. Buffer tubes containing fibers shall also be color coded or numbered with distinct and recognizable colors or numbers according to the following:

1. Blue	6. Red
2. Orange	7. Black
3. Green	8. Yellow
4. Brown	9. Violet
5. Slate	10. Rose

The above colors shall meet EMIA-598, "Color coding of Fiber Optic Cables".

- vi. In buffer tubes containing multiple fibers, the colors or numbers shall be stable during temperature cycling and not subject to fading or smearing onto each other or into the gel filling material. Colors shall not cause fibers to stick together.
- vii. Buffer tubes shall be of a dual-layer construction with the inner layer made of polycarbonate and the outer layer made of polyester.
- viii. Fillers may be included in the cable core to lend symmetry to the cable cross-section where needed.
- ix. The central anti-buckling member shall consist of a glass reinforced plastic rod. The purpose of the central member is to prevent buckling of the cable.
- x. Each buffer tube shall be filled with a non-hygroscopic, non-nutritive to fungus, electrically non-conductive, homogenous gel. The gel shall be free from dirt and foreign matter. The gel shall be readily removable with conventional nontoxic solvents.
- xi. Buffer tubes shall be stranded around a central member using the reverse oscillation, or 'TZ', stranding process.
- xii. The cable core interstices shall be filled with a water-blocking compound. The compound shall be a thixotropic gel containing a Super Absorbent Polymer (SAP) material. The gel shall be non-nutritive to fungus, electrically non-conductive and homogenous. The gel shall be free from dirt and foreign matter and shall be readily removable with conventional nontoxic solvents.
- xiii. Binders shall be applied with sufficient tension to secure the buffer tubes to the central member without crushing the buffer tubes. The binders shall be non-hygroscopic, non-wicking (or rendered so by the flooding compound), and dielectric with low shrinkage.
- xiv. The cable shall contain at least one ripcord under the sheath for easy sheath removal.
- xv. Tensile strength shall be provided by high tensile strength aramid yarns, fiberglass yarns, or both.

- xvi. The high tensile strength aramid yarns and/or fiberglass yarns shall be helically stranded evenly around the cable core.
- xvii. All-dielectric cables (with no armoring) shall be sheathed with medium density polyethylene. The minimum nominal jacket thickness shall be 1.4mm. Jacketing material shall be applied directly over the tensile strength members and flooding compound. The polyethylene shall contain carbon black to provide ultraviolet light protection and shall not promote the growth of fungus.
- xviii. The jacket or sheath shall be free of holes, splits and blisters.
- xix. The cable jacket shall contain no metal elements and shall be of a consistent thickness.
- xx. Cable jackets shall be marked with sequential meter or foot markings, year of manufacture and a telecommunication handset symbol, as required by Section 350G of the National Electrical Safety Code (NESC). The actual length of the cable shall be within -0/+1% of the length markings. The marking shall be in contrasting color to the cable jacket. The height of the marking shall be approximately 2.5 mm.
- xxi. The maximum pulling tension shall be 2700 N (608 lbf) during installation (short term) and 890 N (200 lbf) long term installed.
- xxii. The shipping, storage and operating temperature range of the cable shall be -40°C to +70°C. The installation temperature range of the cable shall be -30°C to +70°C.

- D. *General Cable Performance Specifications.* The un-aged cable shall withstand water penetration when tested with a one meter static head or equivalent continuous pressure applied at one end of a one meter length of filled cable for 24 hours. No water shall leak through the open cable end. When a one meter static head or equivalent continuous pressure is applied at one end of a one meter length of aged cable for one hour, no water shall leak through the open cable end. Testing shall be done in accordance with FOTP-82, "Fluid Penetration Test for Filled Fiber Optic Cable".

When tested in accordance with FOTP-81, "Compound Flow (Drip) Test for Filled Fiber Optic Cable", Method A; the cable shall exhibit no flow (drip or leak) of filling or flooding compound at 80°C. If material flow is detected, the weight of any compound that drips from the sample shall be less than 0.05 grams (0.002 ounce).

The cable shall withstand a minimum compressive load of 220 N/cm (125lbf/in) for non-armored cables applied uniformly over the length of the compression plate. The cable shall be tested in accordance with FOTP-41 "Compressive Loading Resistance of Fiber Optic Cables", except that the load shall be applied at the rate of 3 mm to 20 mm per minute and maintained for 10 minutes. The magnitude of the attenuation change shall be within the repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 1550 nm (single-mode). The average increase in attenuation for the fibers shall be  $\leq 0.02$  dB at 1300 nm (multimode). The repeatability of the measurement system is typically  $\pm 0.05$  dB or less. No fibers shall exhibit a measurable change in attenuation after load removal.

When tested in accordance with FOTP-104, "Fiber Optic Cable Cyclic Flexing Test", the cable shall withstand 25 mechanical flexing cycles at a rate of  $30 \pm 1$  cycles per minute, with a sheave diameter not greater than 20 times the cable diameter. The magnitude of the attenuation change shall be within the repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 1550 nm (single-mode). The repeatability of the measurement system is typically  $\pm 0.05$  dB or less. The cable jacket shall exhibit no cracking or splitting when observed under 5X magnification.

When tested in accordance with FOTP-25, "Repeated Impact Testing of Fiber Optic Cables and Cable Assemblies", the cable shall withstand 25 impact cycles. The magnitude of the attenuation change shall be within the repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 1550 nm (single-mode). The repeatability of the measurement system is typically  $\pm 0.05$  dB or less. The average increase in attenuation for fibers shall be  $\leq 0.04$  dB at 1300 nm (multimode). The cable jacket shall not exhibit evidence of cracking or splitting at the completion of the test.

When tested in accordance with FOTP-33, "Fiber Optic Cable Tensile Loading and Bending Test", using maximum mandrel and sheave diameter of 560 mm, the cable shall withstand a tensile load of 2700 N (608 lbf) applied for one hour (using "Test Condition II" of the procedure). In addition, the cable sample, while

subjected to a minimum load of 2660 N (600 lbf), shall be able to withstand a twist of 360 degrees in a length of less than 3 meters. The magnitude of the attenuation change shall be within the repeatability of the measurement system of 90% of the test fibers. The remaining 10% of the fibers shall not experience an attenuation change greater than 0.1 dB at 1550 nm. The repeatability of the measurement system is typically  $\pm 0.05$  dB or less. The average increase in attenuation for fibers shall be  $\leq 0.40$  dB at 1300 nm (multimode). The cable shall not experience a measurable increase in attenuation when subjected to the rated residual tensile load, 890 N (200lbf).

When tested in accordance with FOTP-85, "Fiber Optic Cable Twist Test", a length of cable no greater than 2 meters will withstand 10 cycles of mechanical twisting. The magnitude of the attenuation change will be within the repeatability of the measurement system for 90% of the test fibers. The remaining 10% of the fibers will not experience an attenuation change greater than 0.1 dB at 1550 nm. The repeatability of the measurement system is typically  $\pm 0.05$  dB or less. The average increase in attenuation for fibers shall be  $\leq 0.40$  dB at 1300 nm (multimode). The cable jacket will exhibit no cracking or splitting when observed under 5X magnification after completion of the test.

When tested in accordance with the proposed FOP-181, "Lighting Damage Susceptibility Test for Fiber Optic Cables with Metallic Components", the cable shall withstand a simulated lighting strike with a peak value of the current pulse  $\geq 105$  kA. The test current used shall be damped oscillatory with a maximum time-to-peak value of 15 $\mu$ s (which corresponds to a minimum frequency of 16.7 kHz) and a maximum frequency of 30 kHz. The time of half-value of the waveform envelope ( $t_2$ ) shall be from 40 - 70 $\mu$ s. In addition to the analysis criterion set forth in FOTP-181, the integrity of the buffer tubes (or analogous loose tube, i.e., core tube) and strength members must be intact after removal of the cable specimens from the test box.

- E. *Quality Assurance Provisions.* All optical fibers shall be proof tested by the fiber manufacturer at a minimum load of 100 ksi.

All optical fibers shall be 100% attenuation tested. The attenuation of each fiber shall be provided with each cable reel.

- F. *Packaging.* The complete cable shall be packaged for shipment on non-returnable wooden reels.

Top and bottom ends of the cable shall be available for testing.

Both ends of the cable shall be sealed to prevent the ingress of moisture.

Each reel shall have a weatherproof reel tag attached identifying the reel and cable.

Each cable shall be accompanied by a cable data sheet that contains significant information on the cable.

- G. *Miscellaneous.* The cable manufacturer shall provide installation procedures and technical support concerning the items contained in this specification.

- H. *Testing.* When fiber optic cable is installed, the fiber optic cable test shall consist of the testing of both multimode and single mode fiber optic cable. The testing procedures involve an OTDR test and an Optical Power Meter Test.

The guidelines for fiber optic cable testing include:

- i. Test jumpers and patch cords must be of the same fiber core size and connector type as the cable system:
  - (1) Multimode fiber 62.5/125  $\mu$ m
  - (2) Singlemode fiber 8.3/125  $\mu$ m
- ii. The light source and OTDR must operate within the range of 850 $\pm$ 30 nm or 1300 $\pm$ 20 nm for multimode testing in accordance with ANSI/EIA/TIA-526-14.
- iii. The light source and OTDR must operate with the range of 1310 $\pm$ 10 nm or 1550 $\pm$ 20 nm for singlemode testing in accordance with ANSI/EIA/TIA-526-7.
- iv. The power meter and the light source must be set to the same wavelength during testing.

- v. The power meter must be calibrated and traceable to the National Institute of Standards and Technology (NIST).
  - vi. All system connectors, adapters and jumpers must be cleaned as per manufacturer's instructions before measurements are taken.
4. *Service Cable.* 2 #THHN-8, 7 strands tinned soft drawn copper wire, 1/16 inch neoprene insulation, black and white in color. Conductors shall be twisted.
  5. *Loop Wire.* Single conductor #14, stranded THHN as supplied by Detect-A-Duct.
  6. *Pedestrian Push-button Cable.* One 3 conductor #14 seven strands tinned soft drawn copper wire, 1/16 inch neoprene insulation, conductors to be twisted. Color coded, 1 white, 1 red, and 1 black.
  7. *Loop Lead-In Cable.* 2 conductor, Canoga CC3003.
  8. *Ground.* Single conductor, AWG #6, soft drawn bare solid copper wire.

Add subsections 614.08 (m) – (s) as follows:

(m) *Video Detection.* Where specified on the plans, video detection shall be installed. The following describes the minimum requirements for providing a complete Video Detection System. Initially, the system shall be capable of providing presence vehicle detection at selected intersections. The video system shall be expandable without removing or replacing existing units.

Acceptable systems include that of any manufacturer, provided such equipment meets all qualifying specifications identified herein. Using standard image sensor optics and in the absence of occlusion, the system shall be able to detect vehicle presence with 98% accuracy under normal conditions (days and nights), and 96% accuracy under adverse conditions (fog, rain, snow).

All items and materials furnished shall be new, unused, current production models installed and operational in a user environment and shall be items currently in distribution. The products algorithms shall have a proven record of field use at other installations for at least two (2) years of service i.e., not including prototype field trials prior to installation.

1. *General.* These technical specifications describe the minimum physical and functional properties of a video detection system. The system shall be capable of monitoring all licensed vehicles on the roadway, providing video detection for areas outlined in the construction drawings. The entire video detection system shall consist of the following:
  - A. Video Image processing unit(s)
  - B. Video Camera(s) with IR filter, enclosure, and sunshield
  - C. Camera Lens
  - D. Surge suppresser
  - E. All other necessary equipment for operation
2. *Video Image Processing Unit.* The Video Image Processing Unit shall be Traficon Model VIP3.1 or VIP3.2, the second releases of the VIP3 board. The new boards shall fit directly into the 170 and NEMA racks without an interface box. The VIP3.1 shall monitor one camera and the W3.2 shall monitor two (2) separate cameras. Video inputs to either unit shall enter through the input file or detector rack edge connector. The Video Image Processing Unit shall be located on one module, daughter PC cards connected through ribbon cables shall not be allowed.

On each camera the presence is detected on 24 zones. Counting data can be stored for up to 6 different lanes. The up to 4000 records stored on board can be retrieved via a RS232 port on the front. All probes (24 for two cameras) can be combined in different relationships (AND, OR, NOT) to 24 outputs. 20 digital inputs to allow to expand the conditional output with external equipment. Also conditional count is possible. All probes and parameters can be changed without stopping the detection. For example: when one probe is modified all probes continue to work, including the one that is being modified. When the new position is confirmed, the new probe will enter a learning phase. Once the new probe is in function, it will take over the job of the old one. In this way, the detector is always fully operational with no interrupt on any probe, even during modification.

Four detector configurations can be stored on board. Software download from PC via serial port is possible.



Specifications:

- A. 1 or 2 camera inputs
- B. 24 digital outputs
- C. 20 digital inputs
- D. Fits direct into the 170 and NEMA rack without additional adapter
- E. 24 direction sensible detector probes per camera, including up to 6 counting probes per camera
- F. Stores counts for 4000 intervals
- G. Detection results of all detection probes can be combined with the inputs to the related outputs. AND, OR, NOT
- H. 4 configurations stored on board
- I. Modifications with no interruption on all probes
- J. Setup via keypad and monitor (no pointing device needed)
- K. Software update via RS232

The video detection board will have only 4 outputs and will use expansion boards for additional input and output. The video detection (Main) board will have the following on the front:

- A. One Male DB9 for connection with the first expansion board
- B. One Female DB9 for setup with keypad (Service port)
- C. LEDs for outputs on board (2 for cam 1 and 2 for camera 2), power, Video Cam 1 and Video Cam2, Communication with expansions
- D. One video output for setup via keypad
- E. A switch to select which image to be on the service output

The input/output expansion board will have the following on the front:

- A. LED's for power, Expansion communication, In/output activity
- B. 2 DB9 ports for communication with Master or other expansion boards
- C. An 8-dipswitch device to select the following:
  - i. Input or Output Range: 1-12 or 13-24
  - ii. Input or Output number (see example for more info)

- (n) *On Street Master Controller.* The traffic signal master controller shall be an Econolite ASC 2 or ASC 2M master controller with most recent software version. No equal or equivalent will be considered.

The master controller shall be wired into a cabinet assembly which also includes a local intersection equipment configuration. The cabinet shall be wired complete with master connecting cables in accordance with applicable portions of the local controller cabinet specifications. The incoming power service and interconnect terminals shall be adequately equipped with surge arrestors to protect against high energy transients.

- (o) *Miscellaneous Hardware.*

- 1. Aluminum pedestal mounts (Type ITT) shall be either of two types as called for in the plans specifications:
  - A. Center mount with two side ports plain
  - B. Offset mount separated with one side port
- 2. Covers for valve pull boxes shall have the word "Traffic" cast into them to avoid confusion with water valve boxes.

- (p) *Instructions and Wiring Diagrams.* All equipment shall be provided with complete installation instructions, including a complete chart of field connections, as well as manuals for the controller containing service instructions including wiring diagrams, troubleshooting procedures, etc. Each and every component used shall be clearly referenced in the service manual and its value, ratings and manufacturer's part number shall be given.

- (q) *Emergency Vehicle Detectors.* Optical Communication Detectors for emergency vehicle pre-emption shall be the 3M Model 711, 712 or 722 Optical Detector or approved equivalent as specified in the construction plan notes. Placement of the Detectors shall be determined by the Engineer. Optical phase selector modules for emergency vehicle pre-emption shall be 3M Model M752 or approved equal.

- (r) *Uninterruptible Power Supply (UPS)*. A UPS shall be incorporated in all new traffic signals and where otherwise specified in the plans. UPS shall be "SH1200UR TRAFFIC UPS" as manufactured by Signal Sense or approved equal and shall be installed per manufacturer's specifications.

All UPS equipment shall be housed either entirely in the traffic signal cabinet or entirely in a separate cabinet, which matches the requirements of the traffic signal cabinet, as specified in the plans.

The UPS equipment shall include the following hardware:

1. Manual bypass switch to by which the UPS unit is bypassed and runs off utility power.
2. Generator receptacle accessible from the exterior of the cabinet with the UPS equipment.
3. Automatic sensor to detect generator power.
4. The UPS equipment shall include a display with the following indications, alarms, and faults:
  - A. Battery charge level.
  - B. UPS load level.
  - C. Presence or absence of a critical UPS fault.
  - D. Presence or absence of utility power.

The UPS equipment shall meet the following operational specifications:

1. Source input: 120 Vac, 60 Hz, single phase with input surge suppression.
2. Output: 120 Vac  $\pm$  3%, 60 Hz, single phase pure sine wave
3. Operating voltage range: 85 Vac – 135 Vac
4. Include the following user definable settings:
  - A. Full run time prior to the UPS transitioning to flash operation.
  - B. Battery level flash.
  - C. Trigger options to notify owner of critical events and/or failures.

The UPS equipment shall meet the following operational characteristics:

1. Installed in series with the utility power such that the UPS powers the entire traffic signal cabinet and all associated equipment.
2. Provide an automatic bypass by which the UPS unit is bypassed and runs off utility power if a critical internal UPS fault occurs.
3. Provide full signal operation for a minimum of one hour, with additional flash time for a minimum of two hours.
4. Operate in an always on condition continuously monitoring the input and shall provide continuous frequency and voltage regulation at the output. Upon loss of power, the UPS shall transfer to full UPS operation in < 5 ms.
5. Remain in or automatically transfer to flash operation when utility power AND the UPS battery levels are below, or fall below, the battery level flash setting.
6. Restore the signal to full operation when utility power is restored.
7. Operate under generator power under the following conditions:
  - A. Full signal operation regardless of the UPS battery charge levels.
  - B. Recharge the UPS batteries.
  - C. Bypass utility power.
  - D. If generator power fails, operates outside acceptable signal tolerances, or is disconnected, the UPS unit shall automatically revert back to either utility power or UPS battery power based on availability.
8. Recharge the UPS batteries within 10 hours.
9. Low battery cutout to prevent critical discharge of, and damage to, the UPS batteries.

- (s) *Thermal Detection*. Where specified on the plans, thermal detection shall be installed. The following describes the minimum requirements for providing a complete Thermal Detection System. Initially, the system shall be capable of providing presence vehicle detection at selected intersections. The thermal system shall be expandable without removing or replacing existing units.

Acceptable systems include that of any manufacturer, provided such equipment meets all qualifying specifications identified herein. Using standard thermal sensors and in the absence of occlusion, the system shall be able to detect vehicle and cyclist presence with 98% accuracy under normal conditions (days and nights), and 96% accuracy under adverse conditions (fog, rain, snow).

All items and materials furnished shall be new, unused, current production models installed and operational in a user environment and shall be items currently in distribution. The products algorithms shall have a proven record of field use at other installations for at least two (2) years of service i.e., not including prototype field trials prior to installation.

3. *General.* These technical specifications describe the minimum physical and functional properties of a thermal detection system. The system shall be capable of monitoring all licensed vehicles on the roadway, providing thermal detection for areas outlined in the construction drawings. The entire thermal detection system shall consist of the following:
  - A. Thermal Image processing unit(s)
  - B. Thermal Camera(s) with enclosure and sunshield
  - C. Camera Lens
  - D. Surge suppresser
  - E. All other necessary equipment for operation
4. *Thermal Image Processing Unit.* The Thermal Image Processing Unit shall be compatible with the Video Detection equipment specified in Sub-section 614.08 (m). The new boards shall fit directly into the 170 and NEMA racks without an interface box. Inputs shall enter through the input file or detector rack edge connector. The Thermal Image Processing Unit shall be located on one module, daughter PC cards connected through ribbon cables shall not be allowed.

On each camera the presence is detected on 24 zones. Counting data can be stored for up to 6 different lanes. The up to 4000 records stored on board can be retrieved via a RS232 port on the front. All probes (24 for two cameras) can be combined in different relationships (AND, OR, NOT) to 24 outputs. 20 digital inputs to allow to expand the conditional output with external equipment. Also conditional count is possible. All probes and parameters can be changed without stopping the detection. For example: when one probe is modified all probes continue to work, including the one that is being modified. When the new position is confirmed, the new probe will enter a learning phase. Once the new probe is in function it will take over the job of the old one. In this way, the detector is always full operational with no interrupt on any probe, even during modification.

Four detector configurations can be stored on board. Software download from PC via serial port is possible.

Specifications:

- L. 1 or 2 camera inputs
- M. 24 digital outputs
- N. 20 digital inputs
- O. Fits direct into the 170 and NEMA rack without additional adapter
- P. 24 direction sensible detector probes per camera, including up to 6 counting probes per camera
- Q. Stores counts for 4000 intervals.
- R. Detection results of all detection probes can be combined with the inputs to the related outputs. AND, OR, NOT
- S. 4 configurations stored on board
- T. Modifications with no interruption on all probes
- U. Setup via keypad and monitor (no pointing device needed)
- V. Software update via RS232

The thermal detection board will have only 4 outputs and will use expansion boards for additional input and output. The thermal detection (Main) board will have the following on the front:

- F. One Male DB9 for connection with the first expansion board
- G. One Female DB9 for setup with keypad (Service port)
- H. LEDs for outputs on board (2 for cam 1 and 2 for camera 2), power, Thermal Cam 1 and Thermal Cam2, Communication with expansions
- I. One video output for setup via keypad
- J. A switch to select which image to be on the service output

The input/output expansion board will have the following on the front:

- D. LED's for power, Expansion communication, In/output activity
- E. 2 DB9 ports for communication with Master or other expansion boards
- F. An 8-dipswitch device to select the following:
  - i. Input or Output Range: 1-12 or 13-24
  - ii. Input or Output number (see example for more info)

Subsection 614.10 (a) shall include the following:

1. *Intersection Power.* The contractor shall notify the Engineer 2 weeks prior to the signal turn-on so that orders may be issued to Xcel Energy for power connection to the intersection on the specified turn-on date.
2. All traffic signal equipment which is removed shall remain the property of the City. Such property shall be removed from the work site and returned by the Contractor to the City Maintenance Facility, 11220 West 45th Place. Work relating to the salvage and delivery of salvage material to the City Shops Yards will be incidental to the Project.
3. When existing traffic signal installations are modified or completely rebuilt, the Contractor shall work around existing traffic signal equipment until the new or modified traffic signal system has been installed and put into operation. If the existing traffic signal equipment must be removed to accommodate the new construction, the contractor shall, if directed by the Engineer, install temporary overhead traffic signal equipment. The contractor shall at all times maintain a minimum of 2 12 inch, three-section (red, yellow, green) traffic signal heads for each roadway approach. If, during construction, a traffic signal must be turned off so that there are no indications in one or more directions, the contractor shall, if so directed by the Engineer, provide a uniformed traffic officer to direct traffic. Provision of temporary signal equipment or uniformed traffic control will be paid for at contract unit prices or paid for as extra work
4. During construction, if traffic signal heads have been installed, but are not ready for actual electrical connection, such heads will be totally covered. If the covering material should come loose, the contractor must replace or repair covering within 6 hours of notification.
5. *Equipment List and Drawings.* The contractor shall submit with his Bid a list of equipment and material which he proposes to furnish, including all equipment and material as identified on the plans or in the specifications by the manufacturer's name which is necessary or customary in the trade to identify such equipment and material. The list shall be complete as to name of manufacturer, size and catalog number of unit, and shall be supplemented by such other data as may be required.

Inspection or sampling of any material other than those already approved according to the material specifications will be made by the Engineer or his designee prior to installation.

If the Contractor proposes a substitution of equipment called for in the plans or specifications, he shall provide additional information to prove the substitution item is of equal or superior quality. Any material and/or equipment installed by the Contractor that is not in conformance with the City's specifications will be removed or changed at the contractor's expense.

Upon completion of the work, the contractor shall submit "record drawings" or corrected plan showing in detail all construction changes, including, but not limited to, wiring, cable, and location and depth of conduit. This information is in addition to wiring diagrams and other required information.

Subsection 614.10 (b) shall include the following:

A common neutral conductor, separate from the signal light circuit neutral, shall be used for all low voltage circuits, including the detectors and pedestrian push-button circuit.

A small permanent tag with permanent markings on which the direction and phase is printed, in the order named, using the codes given in "Cable Schedule", shall be securely attached near the end of each conductor at each controller, standard, or pull box where conductors are separated. Where direction and phase are not clearly indicated by conductor insulation, additional tags shall be used.

#### Cable Schedule

PHASE	COLOR OF TAPE	WIRE TAG
1- Northbound Left Turn	Red/White	NBLT
2- Northbound	Red	NB
3- Northbound Left Turn	Green/White	SBLT
4- Southbound	Green	SB
5- Eastbound Left Turn	Orange/White	EBLT
6- Eastbound	Orange	EB
7- Westbound Left Turn	Blue/White	WBLT
8- Westbound	Blue	WB
9- Pedestrian	Yellow	PED

NOTE: This is a typical cable schedule and shall be used for the wiring of all signal installations. A new cable schedule will be noted on the plans at each intersection where different phasing and/or special equipment is required. It should be noted that a band of white is used to indicate a left turn and yellow for a pedestrian movement. This is in addition to directional tape for the phase. For cable size and number of conductors, see Traffic Signal Material Specifications and/or Standard Drawings.

In subsection 614.10 (b) delete the seventh paragraph and replace with the following:

In no case shall any shellac compounds be used. All connections shall be wire nut connectors. Connections shall be DIAPERED and sealed with non-conducting silicone at all splices. Splices in underground systems shall be waterproofed. A minimum of 12 inches of slack shall be left at each splice except within handholes where 24 inches shall be left.

Subsection 614.10 (c) shall include the following:

Interconnect cable shall be grounded only at one end. Bonding and grounding jumpers shall be solid copper wire, #6 AWG for all systems.

The ground electrode shall be driven into the ground so as the top is 2 inches above the bottom of the pull box. The ground rod connector will be placed so that the bare solid copper wire (#6) can be pulled into a pole, pedestal, or attached to the control cabinet ground buss.

Subsection 614.10 (d) shall include the following:

Excavations, other than for conduit, shall be backfilled with Structure Backfill (Class 1). The surface of the backfill material will be placed to the bottom of the pavement repair or to 6 inches below surface in unpaved areas. The final layer of material will be identical to the material surrounding the backfilled section.

When excavations must remain open overnight, they shall be properly marked to warn motorists and/or pedestrians according to the most recent revision of Part VI in the "Manual on Uniform Traffic Control Devices for Streets and Highways".

Subsection 614.10 (e) shall include the following:

All foundations shall be Portland cement concrete, class BZ.

The exposed portions shall be formed with "Sonotube" to present a neat appearance. Sonotube forms shall not extend below finished grade more than 1 foot.

Precast traffic signal pole footings shall be installed in drilled holes, with tamped sand backfill material. Precast signal footings are not to be used with poles with mast arms.

Anchor bolts shall conform to the specifications of the manufacturer of the poles and mast arms and each individual bolt shall have 2 flat washers, 1 lock washer and 2 nuts. Shims or other similar devices for plumbing or raking will not be permitted. Threaded portions of the anchor bolts shall be protected from contamination with concrete or other damage.

Forms shall not be removed until the concrete has thoroughly set.

Any abandoned foundation shall be removed to 18 inches below finish sub-grade and disposed of by the contractor. Any conduit runs associated with an abandoned foundation shall be extended or abandoned as called for on the plans. When a foundation is removed, the hole shall be backfilled in accordance with subsection 614.10 (d).

Subsection 614.10 (f) shall include the following:

Each individual detector loop is to be terminated within a pull box or water valve housing as specified on the construction drawings and each loop shall consist of one continuous wire, without splicing, to this termination point. Any required series or parallel connections are to be at the termination point.

Detector loops are to be constructed using DETECTADUCT 14 gauge one conductor IMSA Spec #51-5. The loop run shall go through the water valve pull box unspliced to the Quazite pull box located off the roadway. Canoga lead in wire between the Quazite box and the controller cabinet shall be continuous through intermediate pull boxes without splices. All field wires shall be tagged and color coded with permanent markings in the cabinet.

All loops shall have a tag attached to the leading clockwise lead of the loop. This tag shall be marked to indicate the relative location of the loop. This marking shall correspond directly to the loop designations on the intersection drawing provided in the contract.

Detector loop roadway slots shall be sealed to the surface level of the original roadway with 3M Loop Sealant or approved equal. This sealant is to be used whether or not the roadway is to be overlaid.

All presence detector loops shall be quadrapole type, dimensioned as shown on the plans or located in the field, and shall be installed with 2-4-2 turns.

Subsection 614.10 (j) shall include the following:

The contractor shall have full maintenance responsibility of the traffic signal installation from the date of the written Notice to Proceed to the Final Inspection and written approval of the work performed under the contract.

Prior to the functional test, the system shall be operated on flash for 7 calendar days.

The functional test for each traffic signal system shall consist of not less than 14 calendar days of continuous, satisfactory operation.

During the seven day signal flash time and the fourteen day functional test period, the contractor will maintain the system or systems. The cost of any maintenance necessary, except electrical energy, shall be borne by the contractor and will be considered as included in the price paid for the contract items involved and no additional compensation will be allowed therefore.

In subsection 614.10 (j) 4. change all time period references from 5 days to 14 days.

Add subsections 614.10 (k) – (n) as follows:

- (k) *Conduits.* All metal conduit referred to in the specifications and shown on the plans shall be rigid and adequately galvanized, or approved equal. All PVC conduit will be of schedule 80 or heavier. Galvanized rigid conduit shall be used only for installations above grade.

All signal cable conduit shall be not less than 3 inches inside diameter. Conduit for low voltage conductor (pedestrian and vehicle detector) shall not be less than 2 inches inside diameter. Conduit between power pole and controller cabinet used for Xcel Energy feed and interconnect cable (where not supplied by Xcel Energy) shall be 2 inches inside diameter.

The contractor, at his sole expense, may use larger conduit if desired. Where larger conduit is used, it shall be for the entire length of the run from outlet. No reducing couplings will be permitted underground.

The ends of all metal conduit, existing or new, shall be well reamed to remove burrs and rough edges. Ends shall be capped or otherwise closed off until cable is pulled. Field cuts of existing or new conduit shall be made square and true, and the ends shall butt together for the full circumference thereof. Slip joints of running thread will not be permitted for coupling metal conduit. When a standard coupling cannot be used, an approved threaded union coupling shall be used. All couplings shall be screwed up until the ends of the metal conduits are brought together. Joints for PVC pipe shall be cut square and true and the ends shall butt together for the full circumference. All Joints shall be solvent welded unless otherwise approved. Slip joints may be used to joint two separate runs of conduit.

Where a "stub-out" is called for on the plans, a sweeping "ell" shall be installed in the direction indicated and properly capped. The ends of all conduits in structures or terminating at curbs shall be marked by a "Y" at least 3 inches high, cut into the face of the curb, gutter or wall directly above the conduit.

Conduit bends, except factory bends, shall have a radius of not less than 6 times the inside diameter of the conduit. Where factory bends are not used, conduit shall be bent without crimping or flattening, using the longest radius practical.

Conduit shall be laid at a depth of not less than 24 inches below the curb gutter grade in the sidewalk areas and to a depth of not less than 24 inches below the finished sub-grade in all other areas. Conduit under railroad tracks shall be not less than 48 inches below the bottom of the tie or as directed by the owning railroad company.

Trench excavations for conduit shall be 2 inches wider than the outside diameter of the conduit. Backfilling of conduit trenches shall be accomplished by placing Structure Backfill (flowfill) up to the bottom surface of the

roadway pavement material. The remaining portion of the excavation shall be backfilled with the same type of material used to construct the existing roadway surface. Care shall be taken during placement of multiple conduit runs in one trench to ensure Structure Backfill (flowfill) completely surrounds the conduit.

Conduit shall always enter a pedestal base, pull box, or any other type structure from the direction of the run only.

Conduit terminating in a standard or pedestal shall extend approximately 2 inches above foundation vertically. The conduit shall be installed in such a way that it will slope toward the handhole opening.

All conduit runs that exceed 10 feet in length shall have a continuous 1/4 inch diameter nylon line pulled into the conduit along with the specified electrical cables. The line shall be firmly secured at each end of the conduit run with a minimum slack of 3 feet. The purpose of this line is to be able to pull future electrical cable through the existing conduit runs.

Existing underground conduit to be incorporated into a new system shall be cleaned with a mandrel or blown out with compressed air.

New conduit runs shown on the plans are for bidding purposes only and may be changed with approval of or as directed by the Engineer.

All conduit connections at pull boxes shall be tightly secured and waterproofed. Conduit entering controller cabinets shall be sealed by the use of paraffin or other approved sealing compound or as directed by the engineer.

- (l) *Pull Boxes.* A pull box shall always be installed in combination with a steel strain pole and at all other locations shown on the plans and at such additional points as ordered by the engineer. The contractor may install, at his own expense, any additional pull box he may desire in order to facilitate the work and as approved by the engineer.

Special pull boxes and extensions which are required shall be fabricated and installed in general conformance with the size and details shown on standard drawings.

Pull boxes installed in finished areas shall be designed for such installations and shall be stackable and manufactured of a pre-cast polymer concrete material such as Quazite or an approved equal. Pull boxes shall be installed so that the covers are level with curb or sidewalk grade or level with the surrounding ground when no grade is established. The bottoms of all pull boxes shall be bedded in six (6) inches of crushed rock.

When a new conduit run enters an existing pull box, the Contractor shall remove the pull box or tunnel under the side at no less than 18 inches and enter from the direction of the run. No new conduit will be allowed to enter a new or existing pull box in any other manner than that shown on the standard drawings.

Traffic valve pull boxes installed in the street shall be placed according to the plans or as directed by the engineer. The lids shall have the word "Traffic" cast into them.

New pull boxes will not be paid for separately, but shall be included in the cost of conduit.

- (m) *Controller and Cabinet.* A controller shall consist of a complete electrical mechanism for controlling the operation of traffic control signals, including the timing mechanism and all necessary auxiliary equipment.

Each control cabinet shall be mounted on a concrete base as shown on the drawings. All electrical conduits running to the control cabinet shall enter from the bottom. No holes shall be drilled in any part of the cabinet other than the bottom unless otherwise called for on the drawings.

All controller cabinets and control equipment shall be factory wired, ready for operation; field work will be limited to placing cabinets and equipment and the connecting of field wiring to field to field terminal strips. All cabinet wiring shall be neat and firm and all harness and cabinet wiring shall be brought out to a backboard and terminated.

The model and/or serial number shall appear on the controller and cabinet. All auxiliary equipment shall be of the most current design.

At the Contractor's request, the Engineer will provide, during the construction period, an additional external lock for the controller cabinet to maintain security of the controller cabinet.

Flashing operation shall be set for flashing yellow on main street approaches and flashing red on all other approaches in accordance with the "Manual on Uniform Traffic Control Devices". The flashing mechanism shall remain operational during removal of the controller.

(n) *Traffic Signals and Mast Arms.* Traffic signal heads requiring backboards shall be drilled for rivets or self tapping screws. If the manufacturer fails to supply as described, it will be the contractor's responsibility to do so.

Mast arm brackets shall be Astro Brackets or the equivalent and shall be installed 90 degrees to the roadway.

Subsection 614.13 shall include the following:

Traffic signs will be measured by unit including all materials included in the steel sign post and sign panel and other work necessary to complete the item.

Traffic loops will be measured by unit including all materials and other work to complete the item.

Pedestrian flashing sign assemblies will be measured by the unit including the two sign assemblies, conduit and cables, pedestrian push buttons, solar panels, batteries and chargers, and all other materials and work to complete this item.

Radar speed display signs will be measured by the unit including the cabinets, displays, radar unit, solar panels, battery and charger, and all other materials and work to complete the item.

Subsection 614.14 shall include the following:

<b>Pay Item</b>	<b>Pay Unit</b>
Traffic Sign	Each
Traffic Loop	Each
Pedestrian Flashing Sign Assembly	Each
Radar Speed Display Sign	Each

Add subsections 614.15 – 614.16 as follows:

**614.15 Sign Illumination or Illuminated Signs.** (Added subsection)

The pedestrian flashing sign consists of two school crosswalk warning assemblies located at each end of the crosswalk. Each assembly consists of a S1-1 with 5 LED lights located at the corners of the sign and a supplemental panel W16-7p below the main sign panel.

The flashing LED lights will be the latest generation high intensity yellow colored LEDs. The lights will be pedestrian actuated with a pedestrian push button that conforms to the requirements of subsection 614.08 (f). Both assemblies will be actuated from either push button on each end of the crosswalk. The lights will flash for 45 seconds after actuation.

The sign shall be solar powered with an 80 watt solar panel, backup battery, and charger mounted on the pole with the sign. The pole will be a 14 foot long aluminum pole with a minimum outside diameter of 4 ½ inches, base, collar, and all other mounting hardware included.

**614.16 Radar Speed Display Signs.** (Added subsection)

The radar speed display sign consists of a pole mounted radar sign with a 0.125 inch thick welded aluminum cabinet, white powder coat paint inside and out, a shielded display with a smoked, non-glare finish that is readable in direct sunlight, a K-band single directional radar unit, and a "Your Speed" sign above the display.

The characters will be 18" high full matrix (rounded) LED lights will be the latest generation high intensity yellow colored LEDs. The lights will have automatic intensity adjustment for ambient light conditions. In addition to the "Your Speed" characters, the sign shall also include "Slow Down" and red/blue flashing bars violator alerts.

The sign shall be solar powered with an 80 watt solar panel, backup battery, and charger mounted on the pole with the sign. The pole will be a 14 foot long aluminum pole with a minimum outside diameter of 4 ½ inches, base, collar, and all other mounting hardware included.



**REVISION OF SECTION 627  
PAVEMENT MARKING**

Section 627 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 627.02 shall include the following:

Pavement marking material shall be paint and pre-formed plastic conforming to the requirements of Section 708 and 713 respectively. Contractor shall submit product data for approval by the Engineer.

Subsection 627.08 shall include the following:

Application of pre-formed plastic pavement marking materials shall be in accordance with the manufacturer's written specifications. Contractor shall submit manufacturer's pavement surface preparation and application specifications, for each type of marking material, for approval by the Engineer.

Pre-formed plastic pavement marking materials shall be inlaid into fresh pavement when the pavement temperature is between 135 degrees and 150 degrees.

Delete subsection 627.12 (e) and replace with the following:

(e) Pavement word and symbol markings, transverse and longitudinal crosswalk lines, and stop lines will not be measured, but shall be the number of symbols placed or the linear feet of tape, color and width as specified, placed.

Subsection 627.13 shall include the following:

<b>Pay Item</b>	<b>Pay Unit</b>
Epoxy Pavement Marking	Linear Foot
Preformed Pavement Marking (Handicap)	Each
Preformed Pavement Marking (Type – ____ SF)	Each

**REVISION OF SECTION 630  
CONSTRUCTION ZONE TRAFFIC CONTROL**

Section 630 of the CDOT Standard Specifications is hereby revised for this project as follows:

Subsection 630.10 shall include the following:

If the Contract Documents do not include a Traffic Control Plan (TCP), the Contractor shall submit a method for handling traffic (MHT). The MHT must utilize the Manual on Uniform Traffic Control Devices (MUTCD) or Standard Plans S-630-1 and S-630-2 for devices that are proposed. Approval of the MHT does not relieve the Contractor of traffic control liability specifically assigned to him under this Contract. A copy of the approved MHT shall be available at the project site at all times in order that Division personnel may verify compliance with the specified traffic control requirements.

The Contractor's MHT shall also include the following:

- (1) The number of flag persons to be used.
- (2) The number of authorized 24-hour days a traffic control supervisor will be required.

The Contractor shall erect and maintain warning lights, signs, barricades and sufficient safeguards around all excavations, embankments and obstructions.

Subsection 630.13 shall include the following:

The Contractor shall provide an inventory of all existing pavement marking to be disturbed to the Engineer prior to beginning work.

All warning and construction zone traffic control devices shall bear the name, address and phone number of the barricade company that owns them. The phone number shall be a 24 hour a day dispatched hot line in the event an emergency situation occurs where additional devices are needed or existing devices must be removed.

The Contractor shall install construction zone traffic control devices in locations where they do not block or impede sidewalks for pedestrians, disabled persons, bicyclists or other existing traffic control devices. A minimum four foot wide, unobstructed sidewalk area is to be maintained where possible. In the event that a minimum four foot wide sidewalk area with a minimum overhead clearance of 7 feet 6 inches cannot be maintained, a pedestrian/bicycle detour plan shall be submitted in conjunction with the traffic control plan.

All existing traffic control devices including traffic signals, signs, and pavement markings that are compatible with the construction zone traffic control shall remain visible and fully operational. If these devices are incompatible with the temporary construction, they shall be covered, relocated or removed.

Whenever the Contractor removes, obliterates or covers in any way, any pavement markings including lane lines and crosswalks, he shall replace them on a daily basis. Prior to opening affected areas to traffic, all pavement marking shall be placed in accordance with the Plans and Specifications or as directed by the Engineer.

The Contractor shall equip all vehicles operating within the moving lanes with flashing amber lights visible from all directions.

Subsection 630.15 shall include the following:

Signs, barricades, traffic channelizing devices, flashing beacons (portable), method of handling traffic, traffic control supervisor, flagging, and all other requirements of Subsection 630 are included in the pay item for Traffic Control Management unless they are identified in the Bid Schedule as separate pay items.

Subsection 630.16 shall include the following:

No payment will be made under Section 630 until the method of handling traffic (MHT) has been submitted and accepted.

**Pay Item**

**Pay Unit**

Traffic Control Management

Lump Sum

**SECTION 720  
MATERIALS SAMPLING AND TESTING**

Section 720 is hereby added for this project as follows:

**DESCRIPTION**

**720.01** Materials sampling and testing shall be performed under the Contract by an independent materials testing company. This work shall include all necessary labor, equipment and material required for sampling and testing materials or finished products in accordance with the specifications of this section. Unless otherwise designated, all referenced specifications, standards or policies shall be the latest edition as revised or updated by approved supplements published and issued prior to the date of the advertisement for bids

**CONSTRUCTION REQUIREMENTS**

**720.02** All materials sampling and testing shall be performed by certified, experienced and qualified materials testing technicians who work under the supervision of a registered professional engineer in the State of Colorado, practicing in this field. At the request of the Engineer, the Contractor shall require the materials testing company to replace any technician who cannot satisfactorily perform the testing duties.

**720.03** All materials sampling and testing equipment shall be serviceable and have been currently calibrated. At the request of the Engineer, the Contractor shall require the materials testing company to replace any testing equipment that is not satisfactory.

**720.04** Retesting the density of subgrade and base course materials shall be required at the Contractor's expense, if they are reworked or weather causes the materials to become wet, dry or frozen.

**720.05** Materials testing technicians shall furnish copies of failed test results to the Engineer within two working days of completion of testing and prior to the next construction phase. On a weekly basis, the Contractor shall furnish the Engineer with copies of all test results taken during that week and a cover letter, signed by the supervising registered professional engineer, which summarizes the results and discusses any failed tests or inconsistencies.

**720.06** The City materials testing requirements are provided in Table 720-1. All testing procedures, point of verification and central lab requirements shall be as specified in the Frequency Guide Schedule of the Colorado Department of Transportation Field Materials Manual. Without increasing the total number of tests or samples required, the Engineer or Inspector may change the test locations from the frequency spacing shown in Table 720-1. One test is required for any fraction of the specified frequency.

**Table 720-1**

**City of Wheat Ridge Materials Testing Requirements**

Type of Test	Frequency	Remarks
Soil Survey (Classification), AASHTO M 145	1 per 500 feet of roadway or pipe trench	Surveys for roadway and trench may be combined
Moisture-Density Curve, AASHTO T 99	1 per on-site soil type 1 per import material source	AASHTO method determined by soil or materials type
Embankment in-place density, Colorado Procedures	1 per 250 feet per lane per 6 inch loose lift	Minimum density per soil classification, Section 203.07
Roadway subgrade in-place density, Colorado Procedures	1 per 250 feet per lane	Minimum density per soil classification, Section 203.07
Sidewalk subgrade in-place density, Colorado Procedures	1 per 250 feet of sidewalk	Minimum density per soil classification, Section 203.07
Pipe trench in-place density, Colorado Procedures	1 per 200 feet of trench per 18 inch vertical interval	Minimum density per soil classification, Section 203.07
Aggregate base course in-place density, Colorado Procedures	1 per 250 feet per lane	Minimum 95% of maximum density, T 180
Lime treated subgrade in-place density, Colorado Procedures	1 per 250 feet per lane	No less than 95% of standard dry density and optimum moisture, T99
Cement treated base in place density, Colorado Procedures	1 per 250 feet per lane	Density in accordance with contract documents, T 134
Hot Bituminous Pavement asphalt content and gradation	1 per 1000 tons	Within specifications of approved mix design: Binder PG 64-22
Hot Bituminous Pavement in-place density, Colorado Procedures	1 per 100 tons	92 - 96% of maximum density, T 209
Concrete compressive strength, AASHTO Procedures	1 set per 50 cubic yards	PCC pavement, structural concrete, sidewalks, and curbing
Concrete air content and slump, AASHTO Procedures	1 per 25 cubic yards	PCC pavement, structural concrete, sidewalks, and curbing

**BASIS OF PAYMENT**

**720.07** Payments for materials sampling and testing will be lump sum.