# AGENDA ITEM or FINAL CONTRACT REVIEW SUBMITTAL FORM

**Agenda Item:** Construction Agrmt; Multi Agency Paving Project

**Action Requested:** Board of County Commissioners' Signature

**Parties to the Agreement:** Gunnison County and United Companies

**Term Begins:** March 3, 2020 **Term Ends:** 11/30/2020 **Grant Contract #:**

**Summary:**

This is the multi-agency agreement between the City, CB South and Gunnison County

**Fiscal Impact:** $381,089.38

**Submitted by:** Marlene D. Crosby **Submitter's Email Address:** mcrosby@gunnisoncounty.org

**Finance Review:** (●) Required ( ) Not Required

Comments:
No concerns, costs included in the 2020 adopted budget. ln

Reviewed by: GUNCOUNTY1\lNienhueser Discharge Date: 2/25/2020

**County Attorney Review:** (●) Required ( ) Not Required

Comments:
ok db 2/27/20

Reveiwed by: GUNCOUNTY1\dBaumgarten Discharge Date: 2/27/2020 Certificate of Insurance Required Yes (●) No ( )

**County Manager Review:**

Comments:

Reveiwed by: GUNCOUNTY1\mbirnie Discharge Date: 2/28/2020

( ) Consent Agenda (●) Regular Agenda ( ) Worksession Time Allotted: DCM Report

Agenda Date: 3/3/2020

*Revised April 2015*

## Elizabeth Mense

**From:** Marlene Crosby
**Sent:** Thursday, February 27, 2020 7:17 AM
**To:** Elizabeth Mense
**Subject:** Lf Asphalt Bid

Good Morning,
I submitted a document for the contract for asphalt paving. I have been able to negotiate a lower price. Please amend the submittal and use the following numbers:

| | |
|---|---|
| Bid from United | $348,475.50 |
| Mobilization | 4,950.00 |
| Total | $353,425.50 |

Thank you,
Marlene

# Multi-Agency Paving and Street Rehabilitation Project 2020

**For City of Gunnison, Gunnison County, and Crested Butte South Metro District**

**Gunnison County, CO**

**CONTRACT DOCUMENTS**
**&**
**SPECIFICATIONS**

**December 2019**


Prepared By

SGM, Inc.
103 W. Tomichi Ave., Suite A
Gunnison, CO 81230
970.641.5355

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# Multi-Agency Paving and Street Rehabilitation Project 2020

**For City of Gunnison, Gunnison County, And Crested Butte South Metro District**

**Gunnison County, Colorado**

**Bid Documents**

**ADVERTISEMENT FOR BIDS**
**Multi-Agency Paving and Rehabilitation Project 2020**

City of Gunnison
P.O. Box 239
Gunnison, CO 81230
Office Phone: (970) 641-8020

Sealed BIDS for Multi-Agency Paving and Street Rehabilitation Project will be received at the City of Gunnison Public Works Department at 1100 West Virginia Avenue, Gunnison, CO 81230 until **February 4, 2020 at 1:30 P.M**. Following the submittal deadline, bids will be publicly opened at 2:00 P.M., verified for completeness and, if determined complete they will be read aloud. All interested parties are invited to attend.

Bids received after this time will not be accepted and will be returned unopened.

This project will include rehabilitation for portions of identified streets and roads in the City of Gunnison, Gunnison County and Crested Butte South Metro District (the Owners). Work for each entity may include paving and rehabilitation of identified streets and roads, curb and gutter and/or valley pan, replacement and drainage improvements for each entity. As a multi-agency project, a notice of award and contract will be with one selected contractor.

A bid bond security made to the City of Gunnison, Contract Liaison in an amount of five (5%) of the Bidder's Bid Price is required.

Performance and Payment Bonds for 100% of the bid will be required.

All work of this project shall be completed no later than October 9, 2020.

A **MANDATORY PRE-BID MEETING** will be held at City of Gunnison City Hall meeting room, 201 West Virginia Ave., Gunnison, CO 81230 on **January 14, 2020 at 11:00 A.M.**

Copies of bidding documents are located and **only available on BidNetDirect.com.** These bidding documents can be accessed from the City of Gunnison's Solicitation section on the Finance department webpage at the following web address. www.gunnisonco.gov/rfp.

Contract Documents may be examined at the City of Gunnison Public Works Department, 1100 West Virginia Avenue, Gunnison, CO (970-641-8020).

Each Bidder shall file with his Bid a Bid Security in the form of a certified check or a bidder's bond payable to the City.

Bidders on this Work will be requested to comply with the provisions of the laws of Colorado and the Federal Government, and all local laws and all regulations made which are pertinent to the proposed work and shall comply with the same.

December 11, 2019
Date

/s/ Cody Tusing, P.E.
City of Gunnison

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# Instructions to Bidders

## 1. Defined Terms.

Terms used in these Instructions to Bidders are defined in the Standard General Conditions of the Construction Contract, NSPE-ACEC Document EJCDC C-700 (2002 editions). The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom Owner (on the basis of' Owner's evaluation as hereinafter provided) makes an award.

## 2. Copies of Bidding Documents.

2.1. Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement or Invitation may be obtained from Engineer.

2.2. Complete sets of Bidding Documents shall be used in preparing Bids: neither Owner nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3. Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

## 3. Qualifications of Bidders.

To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five days of Owner's request written evidence such as financial data, previous experience and evidence of authority to conduct business in the jurisdiction where the Project is located. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract. Project engineer will provide written recommendation of winning bidder based on contractor qualifications to Owner representatives.

## 4. Examination of Contract Documents and Site.

4.1. Before submitting a Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work; and (d) study and carefully correlate Bidder's observations with the Contract Documents.

4.2. There will a mandatory pre-bid meeting January 14, 2020 at 11:00 A.M. at the City of Gunnison Hall meeting room, 201 W. Virginia, Gunnison, CO 81230. Any questions shall be directed to Ron Nies of SGM at 720-979-8666 or ronn@sgm-inc.com.

4.3. The lands upon which the Work is to be performed, rights-of-way for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents or Drawings.

4.4. The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

## 5. Interpretations.

All questions about the meaning or intent of the Contract Documents shall be submitted to Engineer in writing. Replies will be issued by Addenda on BidNet.com. Questions received until January 17, 2020 at 5:00 pm. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

## 6. Bid Security.

6.1. Bid Security shall be made payable to Owner, in an amount of five percent (5%) of the Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond (on form attached, if a form is prescribed) issued by a Surety.

6.2. The Bid Security of the Successful Bidder will be retained until such Bidder has executed

the Agreement and furnished the required Contract Security. Whereupon it will be returned; if the successful Bidder fails to execute and deliver the Agreement and furnish the required Contract Security within 10 days of the Notice of Award, Owner may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh Day after the "effective date of the Agreement" (which term is defined in the General Conditions) by Owner to Contractor and the required Contract Security, is furnished or the sixty-first day after the Bid opening. Bid Security of other Bidders will be returned within seven days of' the Bid opening.

**7. Contract Time.**

All work shall be completed by October 9, 2020. A tentative construction schedule is to be submitted with bid.

**8. Liquidated Damages.**

Provisions for liquidated damages, if any, are set forth in the Agreement and the Supplementary General Conditions.

**9. Substitute Material and Equipment.**

The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the "effective date of the Agreement".

**10. Subcontractors, etc.**

10.1. If required the identity of certain Subcontractors and other persons and organizations to be submitted to Owner in advance of the Notice of Award. The apparent Successful Bidder, and any other Bidder so requested, will within seven days after the day of the Bid opening submit to Owner a list of all Subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the Work as to which such identification is so required. Such list shall be accompanied by an experience statement with pertinent information as to similar projects and other evidence of qualification for each such Subcontractor, person and organization if requested by Owner. If Owner or Engineer after due investigation has reasonable objection to any proposed Subcontractor, other person or organization. Either may before giving the Notice of Award request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price. If the apparent Successful Bidder declines to make any such substitution, the contract shall not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Any Subcontractor, other person or organization so listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer.

10.2. No Contractor shall be required to employ any Subcontractor, other person or organization against whom he has reasonable objection.

**11. Bid Form.**

11.1. The Bid Form is attached hereto; additional copies may be obtained from Engineer.

11.2. Bid Forms must be completed in ink or by typewriter. The Bid price of each item on the form must be stated in words and numerals; in case of a conflict, words will take precedence.

11.3. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant

secretary. The corporate address and state of incorporation shall be shown below the signature.

11.4. Bids by partnerships must be executed in the partnership name and signed by a partner whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.5. All names must be typed or printed below the signature.

11.6. The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

11.7. The address to which communications regarding the Bid are to be directed must be shown.

**12. Submission of Bids.**

Bids shall be submitted at the time and place indicated in the invitation to Bid and shall be included in an opaque sealed envelope, marked with the Project title and name and address of the Bidder and accompanied by the Bid Security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face thereof.

In addition to the Bid form, Bidders shall also include a preliminary schedule and the methodology for the sequencing of the project.

**13. Modification and Withdrawal of Bids.**

13.1. Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

13.2. If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw his Bid and the Bid Security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work.

**14. Opening of Bids.**

Bids will be received at the City of Gunnison Public Works Department 1100 W. Virginia, Gunnison, CO 81230 February 4, 2020 at 1:30 pm. Bids will be opened and read aloud at 2:00 pm, if they are determined to be complete.

14.1. When Bids are opened an abstract of the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids and verification of bid amounts.

**15. Bids to Remain Open.**

All Bids shall remain open for 60 days after the day of the Bid opening, but Owner may, in his sole discretion, release any Bid and return the Bid Security prior to that date.

**16. Award of Contract.**

16.1. Owner reserves the right to reject any and all Bids, to waive any and all informalities and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, non-responsive or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

16.2. In evaluating Bids, Owner shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements and alternates, unit prices requested in the Bid forms and construction schedule. It is Owner's intent to accept alternates (if any are accepted) in the order in which they are listed in the Bid form but Owner may accept them in any order or combination.

16.3. Owner may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations must be submitted as provided in these instructions. Operating costs, maintenance considerations, performance data, and guarantees of materials and equipment may also be considered by Owner.

16.4. Owner may conduct such investigations as he deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Bidders, proposed Subcontractors and other persons and organizations to do the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

16.5. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.

16.6. If the contract is to be awarded it will be awarded to the lowest Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project.

16.7. If the contract is to be awarded. Owner will give the Successful Bidder a Notice of Award within thirty days after the day of the Bid opening.

**17. Performance and Other Bonds.**

Paragraph 8 of the Construction Agreement set forth Owner's requirements as to performance and other Bonds. When the Successful Bidder delivers the executed Agreement to Owner it shall be accompanied by the required Contract Security.

**18. Signing of Agreement.**

When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by unsigned counterparts of two copies of the Agreement for each municipality and all other Contract Documents. Within 10 days the Contractor shall, sign and deliver the Agreements to Owner with all other Contract Documents including Bonds and Stormwater Management Permit. Within ten days thereafter Owner will deliver all fully signed counterparts to Contractor. Engineer will identify those portions of the Contract Documents not fully signed by Owner and Contractor and such identification shall be binding on all parties.

# BID FORM

**FOR CONSTRUCTION OF**:

MULTI-AGENCY PAVING AND REHABILITATION 2020

**DATE:** _____

**FOR:** Multi-Agency Paving and Rehabilitation Project 2020
P.O Box 239/1100 W Virginia Ave.
Gunnison, CO 81230
Office Phone: (970)641-8020

**Attn: Cody Tusing, P.E.**

**BIDDER:** Name of Bidder _____

Address of Bidder _____

_____

Phone Number _____

Contact Name _____

THE UNDERSIGNED BIDDER, having familiarized himself with the Work required by the Contract Documents, the site and conditions where the Work is to be performed, local labor conditions, and all laws, regulations, and other factors affecting performance of the Work, and having satisfied himself of the expense and difficulties attending performance of the Work,

HEREBY PROPOSES and agrees, if this Bid is accepted, to enter into Agreement with the Owner to perform all work, including the assumption of all obligations, duties, and responsibilities necessary to the successful completion of the contract and the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the Work; tools, equipment, supplies, transportation, facilities, labor, superintendence, and services required to perform the Work; and bonds, insurance, submittals; and all fees as indicated or specified in the Contract Documents to be performed or furnished by BIDDER for the amount identified and detailed in the BID SCHEDULE and further totaled below ("Bid Proposal Amount"):

_____Dollars ($_____)
(written) (numeric)

<u>DOCUMENTS AND ADDENDA</u>:

The BIDDER submits that he has carefully examined the site of the proposed work and the existing conditions, as well as the drawings and specifications.

Also, he has thoroughly reviewed the proposal form, Instructions to Bidders, General Conditions, Supplementary Conditions, and the Specifications and Drawings, and acknowledges that the following addenda covering revisions to the drawings and/or specifications, and the cost, if any, of such revisions has been included in the lump sum price quoted.

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

CHANGES TO THE WORK:

BIDDER agrees to perform all the WORK for the total bid price identified in the "Bid Proposal Amount." If circumstances arise during construction of this project which dictate a change in quantity, then the pricing for that particular portion of the job will be adjusted up or down with the BIDDER'S unit price as included in this Bid Form to the revised quantity required by the construction circumstances or any situation not now anticipated within the design considerations of these plans. Final payment will be based upon count or measurement of items in place upon completion of the project at the units of measure and units prices, with the exception of lump sum items.

For changes not covered by a contract unit price, BIDDER proposes that all such changes ordered to the work which increase the Scope of Work shall be priced in advance of the work and such unit prices will be approved by the Owner prior to commencement of work.

PERFORMANCE AND LABOR & MATERIAL PAYMENT BONDS:

By signing and submitting this Bid Proposal, the BIDDER certifies that upon demand, Performance and Labor & Material Payment Bonds can be furnished in amounts sufficient to cover the total proposed cost of the Work.

TIME OF COMMENCEMENT, COMPLETION, AND DAMAGES:

The BIDDER agrees that, if awarded the Contract, the Work will be substantially complete, ready for occupancy by Owner, according to the schedule submitted by BIDDER or within the indicated construction durations specified within the construction documents except for delays caused by Acts of God, neglect of the Owner or the representative of the Owner or other causes beyond the BIDDER's control, and allows for no time due to labor disputes or strikes. Weather (unless severe) is not considered as an excuse for delay of the work.

Time is expressly declared to be of the essence in completion of the Work covered by the Contract Documents. Where additional time is allowed under the Agreement for the Completion of the work, the new time limits shall be of the essence of the Agreement.

GENERAL AGREEMENTS:

The BIDDER agrees to the following:

The BIDDER has had an opportunity to examine the Site of the work and has examined the Contract Documents therefore.
The BIDDER has carefully prepared the bid proposal upon the basis thereof and has carefully examined and checked the Bid Proposal and the materials, equipment and labor required thereunder, the cost thereof, and figures therefore, and hereby states that the amount or amounts set forth in the Bid Proposal is, or are, correct and that no mistake or error has occurred in the Bid Proposal or in the BIDDER's computations upon which the Bid Proposal is based and the BIDDER agrees that no claim for reformation, modification, rescission or correction of the Bid Proposal will be made after the scheduled closing time for the receipt of Bid Proposals.

The BIDDER understands that the Owner reserves the right to reject any or all Bids for any or no reason and to waive any informalities in the bidding.

The BIDDER understands that this Bid shall not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving bids.

In preparing the Bid Proposal, the BIDDER has verified and is reasonably assured of the availability of all labor, materials, and products in this document.

The BIDDER has carefully reviewed the Bid Documents in their entirety and has agreed to meet these requirements.

DOCUMENT EXECUTION:

DATED this _____ day of _____, 202__

_____
(Name of Firm)

_____
(Street Address)

_____
(City, State, Zip)

_____
(Signature)

_____
(Printed Signature)

_____
(Title)

Please check as appropriate:

_____ An individual

_____ A Partnership Between:

_____ A Corporation organized under the laws of the State of _____

END OF PROPOSAL FORM

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## Multi-Agency Paving and Rehabilitation Project 2020
## Combined Mobilization/Demobilization

| Item # | Estimated Quantity | Unit | Description | Unit Price | Total Price |
|---|---|---|---|---|---|
| 1 | 1 | LS | Mobilization / Demobilization | | |
| | | | BID PROPOSAL AMOUNT | | |

## Multi-Agency Paving and Rehabilitation Project 2020
## City of Gunnison Road Improvements

| Item # | Estimated Quantity | Unit | Description | Unit Price | Total Price |
|---|---|---|---|---|---|
| 2 | 13,311.0 | LF | REMOVAL CURB & GUTTER | | |
| 3 | 217.0 | LF | REMOVAL CROSS PANS/VALLEY GUTTERS | | |
| 4 | 4.0 | EA | REMOVAL STORM DRAIN INLET & BOXES | | |
| 5 | 500.0 | SY | ASPHALT REMOVAL -SAW CUT | | |
| 6 | 5,029.0 | SY | LANDSCAPE: 4IN TOPSOIL & SOD | | |
| 7 | 40.0 | CY | STRUCTURAL AND SUBGRADE REPAIRS | | |
| 8 | 501.0 | CY | REMOVAL AND PREP BASE | | |
| 9 | 26,706.0 | SY | FULL DEPTH RECLAMATION 4IN TO 6IN | | |
| 10 | 2,100.0 | TON | AGGREGATE BASE COURSE (CLASS 6) | | |
| 11 | 27,429.0 | SY | HOT BITUMINOUS ASPHALT SX75 PG58-28 (20% RAP) 2.5IN | | |
| 12 | 4,100.0 | SY | HOT BITUMINOUS ASPHALT 3IN | | |
| 13 | 20.0 | LF | STORM PIPE 8 IN PVC | | |
| 14 | 200.0 | LF | STORM PIPE 10 IN PVC | | |
| 15 | 440.0 | LF | STORM PIPE 12 IN PVC | | |
| 16 | 6.0 | EA | STORM DRAIN BOX 36IN X 24IN X 48IN ID | | |
| 17 | 6.0 | EA | STORM DRAIN INLETS | | |
| 18 | 4.0 | EA | STORM DRAIN INLETS CAST IRON IFG-1927 C.I. | | |
| 19 | 1.0 | EA | STORM DRAIN INLETS CAST IRON IFG-13 C.I. | | |
| 20 | 7.0 | EA | STORM INLET: CONCRETE APRON 8FT X 8FT X 0.5FT | | |
| 21 | 4.0 | EA | STORM CONCRETE BOX 3.5FT X 3.0FT X 3.5FT O.D. | | |
| 22 | 1.0 | EA | STORM MANHOLE: 48IN ID X 72IN | | |
| 23 | 1.0 | EA | STORM CONCRETE BOX 4.0FT X 3.0FT X 3.5FT O.D. | | |
| 24 | 9.0 | EA | UTILITY POTHOLING | | |
| 25 | 5.0 | EA | VALVE COVER: INSTALLED | | |
| 26 | 16.0 | EA | MANHOLE RING: INSTALLED | | |
| 27 | 20.0 | EA | CURB STOP COVER: INSTALLED | | |
| 28 | 11,683.0 | LF | CURB & GUTTER: TYPE IIB | | |
| 29 | 38.0 | LF | CONCRETE VALLEY PAN 4FT | | |
| 30 | 540.0 | LF | CONCRETE VALLEY PAN 5FT | | |
| 31 | 40.0 | LF | CONCRETE VALLEY PAN 6FT | | |
| 32 | 193.0 | SY | ALLEY ENTRANCE APRON | | |
| 33 | 1,005.0 | SY | CONCRETE DRIVEWAY AND SIDEWALK EXTENSIONS | | |
| 34 | 990.0 | SF | CONCRETE APRON 8IN | | |
| 35 | 1.0 | LS | PUBLIC COMMUNICATIONS | | |
| 36 | 1.0 | LS | TRAFFIC CONTROL | | |
| 37 | 1.0 | LS | SWMP/EROSION CONTROL | | |
| | | | BID PROPOSAL AMOUNT | | |

Initial:_____

## Multi-Agency Paving and Rehabilitation Project 2020
## Gunnison County Road Improvements

| Item # | Estimated Quantity | Unit | Description | Unit Price | Total Price |
|---|---|---|---|---|---|
| 38 | 25,813.0 | SY | HOT BITUMINOUS ASPHALT 2IN | | |
| | | | | | |
| | | | | BID PROPOSAL AMOUNT | |

## Multi-Agency Paving and Rehabiliation Project 2020
## Crested Butte South Metro District Road Improvements

| Item # | Estimated Quantity | Unit | Description | Unit Price | Total Price |
|---|---|---|---|---|---|
| 39 | 1.0 | LS | TRAFFIC CONTROL | | |
| 40 | 100.0 | CY | STRUCTURAL AND SUBGRADE REPAIRS | | |
| 41 | 469.0 | SY | HOT BITUMINOUS ASPHALT 3IN | | |
| | | | | | |
| | | | | BID PROPOSAL AMOUNT | |

_____

**TOTAL BID (written)**

Initial:_____

## Multi-Agency Paving and Rehabiliation Project 2020

**Submitted by:** _____

company

_____

authorized personnel

_____ / _____

typed/printed title

**Date of Bid:** _____

Initial:_____

# BID BOND

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

_____

as Principal, and _____

held and firmly bound unto _____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 _____, 2020. The condition of the above obligation is such that whereas the Principal has submitted to _____, a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the

_____

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 said Bid) and shall furnish a Bond for his faithful performance of said contract, and for the payment of all persons performing labor of 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 any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

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

_____
Principal

_____
Surety

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.**

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**NOTICE OF AWARD**
**MULTI-AGENCY PAVING AND REHABILITATION PROJECT 2020**

Dated_____, 2020

TO: _____
Bidder

PROJECT: for **City of Gunnison, Gunnison County, and Crested Butte South**

CONTRACT FOR: for **Multi-Agency Paving and Rehabilitation Project 2020**

You are hereby notified that your Bid dated _____, 2020 for the above Contract has been considered. You are the apparent successful Bidder and have been awarded a contract for the Multi-Agency Paving and Rehabilitation Project 2020.

Contract Price of your Contract is _____

_____Dollars $_____

You must comply with the following conditions precedent within fifteen days of the date of this Notice of Award.

1. Deliver to the Owner two fully executed counterparts of the Agreement, including all the Contract Documents,

2. Deliver with the executed Agreement the Contract Security (Bonds) as specified in the Instructions to Bidders and General Conditions and Supplementary Conditions.

3. Other conditions precedent: You must deliver with the executed Agreement, proof of insurance coverage as specified in the General Conditions and Supplementary General Conditions.

Failure to comply with these conditions within the time specified will entitle OWNER to consider you in default, annul this Notice of Award and to declare your Bid Security forfeited.

Within ten days after you comply with those conditions, OWNER will return to you one fully executed counterpart of the Contract Documents.

Contract Liaison

_____
Cody Tusing, P.E.
City of Gunnison

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# Multi-Agency Paving and Rehabilitation Project 2020

**For City of Gunnison, Gunnison County, And Crested Butte South Metro District**

**Gunnison County, Colorado**

## Agreement Documents

# CONSTRUCTION AGREEMENT

THIS CONSTRUCTION AGREEMENT is made this ___ day of _____, 20__, by and between _____ (hereinafter referred to as "Contractor"), and the City of Gunnison, a Colorado home-rule municipality ("City"), the Board of County Commissioners of the County of Gunnison ("County"), and Crested Butte South Metro District, a special district of the State of Colorado ("CB South"), hereinafter collectively referred to as "Owners".

**WITNESSETH:**

WHEREAS, the Owners desires that Contractor perform the duties of general contractor for the construction of certain improvements, namely the Multi-Agency Paving and Rehabilitation Project 2020 (hereinafter the "Project"); and

WHEREAS, Contractor desires to perform such duties pursuant to the terms and conditions provided for in this Agreement; and

WHEREAS, the parties hereto desire to set forth certain understandings regarding the Project in writing.

**NOW, THEREFORE**, for and in consideration of the mutual promises and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Statement of Work. Contractor agrees to manage and supervise the construction of the Multi-Agency Paving and Rehabilitation Project 2020 located in Gunnison County, Colorado, as directed by the Owners and pursuant to the individual owners Municipal Codes and according to the bid schedule and attached paving and street rehabilitation specification. Contractor shall (a) furnish all tools, equipment, supplies, superintendence, transportation and other construction accessories, services and facilities; (b) furnish all materials, supplies, and equipment specified to be incorporated into and form a permanent part of the complete work; (c) provide and perform all necessary labor in a substantial and skillful manner and in accordance with the provisions of this Agreement; and (d) execute, construct and complete all work included in and covered by this Agreement.

2. Time of Commencement and Completion. Construction under this Agreement shall be completed by October 9, 2019 (Completion Date"). The Completion Date may, at the Owner's sole discretion, be extended if approved by the Owner in writing. If, due to misconduct or neglect, Contractor fails to complete the Project on or before the Completion Date, the Owner may deduct liquidated damages in the amount of $500.00 from the contract price per day for each day Contractor works beyond this date. It is understood by Contractor and the Owner that actual damages caused by Contractor's failure to complete this Agreement on time are impracticable or extremely difficult to fix, and that the per diem deduction from the contract

price will be retained by the Owner as payment by Contractor of liquidated damages, and not as a penalty.

3. Compensation. Owner shall pay and Contractor shall receive the contract price of **$_____** as stipulated in the Notice of Award, attached to this contract as Exhibit B and incorporated herein by this reference, as FULL compensation for everything furnished and done by Contractor under this Agreement, including all loss or damage arising out of the work or from the action of the elements; for any unforeseen obstruction or difficulty encountered in the prosecution of the work, including increased prices for or shortages of materials for any reason, including natural disasters; for all risks of every description associated with the work; for all expenses incurred due to the suspension or discontinuation of the work; and for well and faithfully completing the work as provided in this Agreement.

4. Draw Requests. Contractor agrees to perform all work on the Project according to the schedules set forth in the approved Bid Proposal attached hereto as Exhibit B and incorporated herein by this reference. Contractor shall submit weekly progress reports to the Owners, Maintenance Supervisor or his designee showing actual costs incurred and work completed. Upon review and approval of the progress reports and draw requests by the Maintenance Supervisor or his designee, the Owner agrees to pay Contractor the amounts shown on all draw requests, minus a five percent (5%) retainage, no later than the fifteenth ($15^{th}$) business day following the date the draw request was submitted and approved. Payments may be withheld if:

A. Work is found defective and not remedied;

B. Contractor fails to meet schedules as agreed to, as may be amended by the actual construction commencement date.

C. Contractor does not make prompt and proper payments to subcontractors;

D. Contractor does not make prompt and proper payments for labor, materials, or equipment furnished;

E. Another contractor is damaged by an act for which Contractor is responsible;

F. Claims or liens are filed on the job; or

G. In the opinion of the Owner, Contractor's work is not progressing satisfactorily.

The Owner shall disburse the total retainage and the final draw request submitted by Contractor upon acceptance of the Project as described in Paragraph 12 below.

5. Liability for Damages. The Owner its officers, agents or employees, shall not in any manner be answerable or responsible for any loss or damage to the work or to any part of the work; for any loss or damage to any materials, building, equipment or other property that may be

used or employed in the work, or placed on the worksite during the progress of the work; for any injury done or damages or compensation required to be paid under any present or future law, to any person, whether an employee of Contractor or otherwise; or for any damage to any property occurring during or resulting from the work. Contractor shall indemnify the Owner, its officers, agents and employees, against all such injuries, damages and compensation arising or resulting from causes other than the Owner's neglect, or that of its officers, agents or employees.

6. Inspection of Work and Materials.

A. The Owner or his designee may appoint and employ such persons as may be necessary to act as inspectors or agents for the purpose of supervising in the interests of the Owner materials furnished, and work done as the work progresses.

B. The Owner shall at all times have unrestricted access to all parts of the work and to other places where or in which the preparation of materials and other integral parts of the work are being carried on and conducted. Contractor shall fully cooperate with the Owner's staff and appointed inspectors during the course of the work.

C. Contractor shall provide all facilities and assistance required or requested to carry out the work of supervision and inspection by the Owner, including soil, concrete, hot mix asphalt and other material tests.

D. Inspection of the work by the above-mentioned authorities or their representatives shall in no manner be presumed to relieve in any degree the responsibility or obligations of Contractor.

E. No material of any kind shall be used in the work until it has been inspected and accepted by the Owner. All rejected materials shall be immediately removed from the premises. Any materials or workmanship found at any time to be defective shall be replaced or remedied at once regardless of previous inspection. Inspection of materials shall be promptly made, and, where practicable, at the source of supply.

F. Whenever the specifications, the instructions of the Owner or the laws, ordinances or regulations of any public authority require work to be specially tested or approved, Contractor shall give the Owner timely notice of its readiness for inspection, and if the inspection is by another authority, of the date fixed for the inspection.

7. Insurance. Contractor shall not commence work under this Agreement until Contractor has obtained all insurance required under this section and the insurance has been approved by the Owner Manager or his designee. Similarly, Contractor shall not allow any approved subcontractor to commence work on his

or her subcontract until all similar insurance required of subcontractor has been so obtained and approved. The following insurance shall be required:

A. Commercial General Liability Insurance: At a minimum, combined single limits of $1,000,000 per occurrence and $1,000,000 for general aggregate for bodily injury and property damage, which coverage shall include products/completed operations, independent contractors, and contractual liability each at $1,000,000 per occurrence.

B. Workers' Compensation and Employer's Liability: Workers' compensation insurance for all of Contractor's employees engaged in work at the site of the project including occupational disease coverage in accordance with scope and limits as required by the State of Colorado.

C. Comprehensive Automobile Liability Insurance: Including coverage for all owned, non-owned, and rented vehicles with $1,000,000 combined single limit for each occurrence.

The Owner shall be named as an additional insured. All insurance policies must be written in a manner consistent with the requirements of the Standard Form Agreement. Certificates of insurance shall be issued prior to execution of the Notice to Proceed.

8. Performance Bond. To secure performance of Contractor's obligations under this Agreement, the Contractor shall provide the Owner with a Performance Bond in the amount of the full contract price. Prior to execution of this Agreement, the Contractor shall provide the form of the Performance Bond to the Owner for its review and approval. The Owner shall be authorized to draw upon the Performance Bond to correct any default by Contractor under this Agreement, which default shall be determined and substantiated by an Affidavit of Default signed by the Owner Manager. The Performance Bond shall be held by the Owner through the one-year warranty period specified in Paragraph 13 below.

9. Payment of Labor and Materials Bond. To secure performance of Contractor's obligations under this Agreement to its subcontractors and suppliers, Contractor shall provide the Owner with a Payment of Labor and Materials Bond in the amount of the full contract price. Prior to execution of this Agreement, the Contractor shall provide the form of the Payment of Labor and Materials Bond to the Owner for its review and approval. The Owner shall be authorized to draw upon the Payment of Labor and Materials Bond to correct any default by Contractor under this Agreement, which default shall be determined and substantiated by an Affidavit of Default signed by the Owner Manager. The Payment of Labor and Materials Bond shall be held by the Owner through the one-year warranty period specified in Paragraph 13 below.

10. Notice to Proceed. Notice to Proceed shall be issued within ten (10) calendar days of the execution of this Agreement by all parties. If the Owner fails to issue such Notice to Proceed within that time limit, Contractor may terminate the Agreement without further liability

on the part of either party. Such notice of termination must be tendered in writing to the Owner. Additionally, the parties may mutually agree that the time for the Notice to Proceed may be extended.

11. Compliance with Laws. Contractor and every subcontractor or person doing or contracting to do any work contemplated by this contract shall keep himself or herself fully informed of all national and state laws and all municipal ordinances and regulations in any manner affecting the work or performance of his or her contract or any extra work, and shall at all times observe and comply with such laws, ordinances and regulations, whether or not the laws, ordinances or regulations are mentioned in this contract, and shall indemnify the Owner, its officers, agents and employees, against any claim or liability arising from or based on the violation of any such laws, ordinances or regulations.

12. Certificates and Permits. Contractor shall secure at Contractor 's own expense all necessary certificates, licenses and permits from municipal or other public authorities required in connection with the work contemplated by this Agreement or any part of this Agreement, and shall give all notices required by law, ordinance or regulation. Contractor shall pay all fees and charges incident to the due and lawful prosecution of the work contemplated by this Agreement, and any extra work performed by Contractor.

13. Termination. The Owner may, at its sole discretion, terminate this Agreement without liability in the event that Contractor fails to provide the Performance Bond and/or Payment of Labor and Materials Bond, Certificates of Insurance required by Paragraph 7, or otherwise fails to meet the conditions precedent to issuance of the Notice to Proceed set forth in Paragraph 10 above. The Owner may also, at its sole discretion, on one week's notice to Contractor, terminate this Agreement without liability before the completion date, and without prejudice to any other remedy the Owner may have, when Contractor defaults in the performance of any provision, or fails to carry out the construction of the Project in accordance with the provisions of this Agreement.

14. Substantial Completion/Acceptance. The date of substantial completion of the Project shall be a date mutually agreed upon by the Owner and Contractor. In the event that the Owner and Contractor do not reach an agreement as to the date of substantial completion, the Owner Council shall determine such date. Upon the date of substantial completion, Contractor or its engineer shall certify in writing that the improvements have been completed in conformance with the plans and specifications and submit to the Owner a completed acceptance checklist utilizing a form approved by the Owner. Thereafter, and within thirty (30) business days after a request for final inspection by Contractor, the Owner shall inspect the Project and notify Contractor in writing and with specificity of their conformity or lack thereof to the plans and specifications. Contractor shall make all corrections necessary to bring the Project into conformity with the plans and specifications. Once any and all corrections are completed, the Owner shall promptly notify Contractor in writing that the Project is in conformance with the approved plans and specifications, and the date of such notification shall be known as the Acceptance Date. The Acceptance Date shall coincide with the commencement of the one-year warranty period described in Paragraph 15 below. Within thirty (30) days of the Acceptance

Date, the Owner shall pay Contractor the amount shown on the final draw request; provided, however, that the amount of funds left from the contract price specified in the Notice of Award are sufficient to cover this amount.

15. Warranty. Contractor shall warrant any and all improvements constituting the Project constructed for the Owner pursuant to this Construction Agreement for a period of twelve (12) months from the Acceptance Date as set forth in Paragraph 14 herein. Specifically, but not by way of limitation, Contractor shall warrant that:

A. Any and all improvements constituting the Project shall be free from any security interest or other lien or encumbrance; and

B. Any and all improvements and structures so conveyed shall be free of any defects in materials or workmanship for a period of one (1) year, as stated above. Additionally, the culvert backfill, road base and paving shall be warranted for a period of 2 years from the time of completion.

16. Corrections to Project. If, within one (1) year after the date of substantial completion, any of Contractor's work on the Project is found to be not in accordance with the standards set forth in the preceding Paragraph 15, Contractor shall, at Contractor's expense, correct it promptly after receipt of a written notice from the Owner to do so unless the Owner has previously accepted such condition. Such notice shall be either delivered personally or be overnight express courier, or sent by registered or certified mail, postage prepaid, return receipt requested, and must be received by Contractor as soon as practicable after the Owner discovers the defect or the loss or damage caused by such defect, but in no event later than the date that the warranty given hereby expires.

17. Modifications. The Owner may modify this Agreement with respect to the arrangement, character, alignment, grade or size of the work or appurtenances whenever in its opinion it shall deem it necessary or advisable to do so. Contractor shall accept such modifications when ordered in writing by the Owner Manager or his designee. Any such modifications shall not subject Contractor to increased expense without equitable compensation, which compensation may be approved by the Owner pursuant to its Purchasing Policy. If any modification results in a decrease in the cost of work involved, an equitable deduction from the contract price shall be made. These deductions shall be determined by the Owner Manager or his designee. The determination of any such additional compensation or deduction shall be based on the bids submitted and accepted. No modifications in the work shown on the plans and described in the specifications shall be made, unless the nature and extent of the modifications have first been certified by the Owner in writing and sent to Contractor.

18. Attorneys' Fees; Survival; Costs of Collection. Should this Agreement become the subject of legal action to resolve a claim of default in performance by any party, including the collection of past due amounts, the non-prevailing party shall pay the prevailing party's reasonable attorneys' fees, expenses, and court costs. All rights concerning remedies and/or attorneys' fees shall survive any termination of this Agreement.

19. Governing Law. The laws of the State of Colorado shall govern the validity, performance, and enforcement of this Agreement.

20. Assignment. This Agreement may not be assigned without the prior written consent of the non-assigning party.

21. Amendment. This Agreement shall not be amended, except by subsequent written agreement of the parties.

22. Entire Agreement. This Agreement, **along with any addendums and attachments hereto**, constitutes the entire agreement between the parties. The provisions of this Agreement may be amended at any time by the mutual consent of both parties. The parties shall not be bound by any other agreements, either written or oral, except as set forth in this Agreement.

23. Captions. The captions in this Agreement are inserted only for the purpose of convenient reference and in no way define, limit, or prescribe the scope or intent of this Agreement or any part thereof.

24. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, successors, and assigns.

25. Invalid Provision. If any provisions of this Agreement shall be determined to be void by any court of competent jurisdiction, then such determination shall not affect any other provision hereof, all of which other provisions shall remain in full force and effect. It is the intention of the parties hereto that, if any provision of this Agreement is capable of two constructions, one of which would render the provision void, and the other of which would render the provision valid, then the provision shall have the meaning which renders it valid.

26. Notices. Written notices required under this Agreement and all other correspondence between the parties shall be directed to the following and shall be deemed received when hand-delivered or three (3) days after being sent by certified mail, return receipt requested:

If to the Owners:

Cody Tusing, P.E. – City of Gunnison
Marlene Crosby – Public Works Director – Gunnison County
Ronnie Benson – Crested Butte South Metro District

If to Contractor:

27. Authority. Each person signing this Agreement represents and warrants that he is fully authorized to enter into and execute this Agreement, and to bind the party it represents to

the terms and conditions hereof.

28. Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which, when taken together, shall be deemed one and the same instrument.

29. Contractor's Employee Requirements By its signature on this Agreement, Contractor certifies that, as of the time of its signature, it does not knowingly employ or contract with an illegal alien and that, in order to confirm the employment eligibility of all employees who are newly hired for employment in the United States, the Contractor has participated or attempted to participate in the E-Verify program ("E-Verify Program") created in Public Law 208, 104th Congress, as amended, and expanded in Public Law 156, 108th Congress, as amended, administered by the United States Department of Homeland Security, and the Social Security Administration or the Department Program (Department Program) established pursuant to §8-17.5-102(5)(c), C.R.S.

Contractor agrees that it shall not knowingly employ or contract with an illegal alien to perform work under this Agreement; and that it shall not enter into a contract with a subcontractor that fails to certify to the Contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this contract.

Contractor has confirmed or attempted to confirm through participation in the E-Verify or Department Program the employment eligibility of all employees who are newly hired for employment in the United States. Contractor shall not use E-Verify or Department Program procedures to undertake pre-employment screening of job applicants while work under this Agreement is being performed.

If Contractor obtains actual knowledge that a subcontractor performing work under this Agreement knowingly employs or contracts with an illegal alien, the Contractor shall: (1) notify the subcontractor and the Owner within three days that the Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and (2) terminate the subcontract with the subcontractor if, within three days of receiving the notice required herein, the subcontractor does not stop employing or contracting with the illegal alien; except that the Contractor shall not terminate the contract with the subcontractor if during such three days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

The Contractor shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation that the Department is undertaking pursuant to the authority established in C.R.S. Section 8-17.5-101(5).

If Contractor violates a provision of this Illegal Alien Addendum, the Owner may terminate this Agreement for breach of contract. If the Agreement is so terminated, the Contractor shall be liable for actual and consequential damages to the Owner. Contractor understands that, in the event of such a termination, Owner is required to notify the office of the Colorado Secretary of

State.16. Counterparts. The parties hereto may execute any number of counterparts to this Agreement, each of which shall be deemed to be an original, and all of which together shall constitute one and the same agreement.

WHEREFORE, the parties hereto have executed duplicate originals of this Construction Agreement on the day and year first written above.

**CONTRACTOR:**

By _____

Name _____

Title _____

ATTEST:

_____
Name

**OWNERS:**
**CITY OF GUNNISON,**
a Colorado home-rule municipality

Attest:

_____ _____

By: Cody Tusing, P.E. By: Erica Boucher, City Clerk

**BOARD OF COUNTY COMMISSIONERS**
**OF THE COUNTY OF GUNNISON COUNTY**

Attest:

_____ _____

By: Marlene Crosby, Deputy County Manager By: Deborah Ferchau, Administrative Asst.

**CRESTED BUTTE SOUTH METROPOLITAN DISTRICT,**
a Colorado Special District

Attest

_____ _____

By:_____ By:_____

Title:_____ By:_____

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**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership, Individual)

and _____
(Name of Surety)

_____
(Address of Surety)

Hereinafter called Surety, are held and firmly bound unto _____

_____
(Name of Owner)

_____
(Address of Owner)

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 _____, _____, a copy of which is hereto attached and made a part hereof for the construction of:

_____

_____

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 or 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 there under or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to 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.

IN WITNESS WHEREOF, this instrument is executed in _____
(number)

counterparts, each one of which shall be deemed an original, this _____ day of _____ _____, _____.

_____
Principal

ATTEST:

_____ By: _____(s)
(Principal) Secretary

_____
(Address)

Witness as to Principal:

_____

_____ _____
(Address) (Surety)

By: _____
(Attorney-In-Fact)

_____
(Address)

ATTEST:

_____
Witness as to Surety

_____
(Address)

_____

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 where the WORK is located.

## PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that

_____
Name of Contractor

_____
Address of Contractor

a _____
Corporation, Partnership or Individual

Hereinafter called Principal, and _____
Name of Surety

_____
Address of Surety

Hereinafter call Surety, are held and firmly bound unto _____

_____
Name of Owner

_____
Address of Owner

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 _____, _____, a copy of which is hereto attached and made a part hereof for the construction of:

_____

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 if he shall satisfy all claims and demands incurred under such contract, and shall full 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 terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby

waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to 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.

IN WITNESS WHEREOF, this instrument is executed in _____
(number of copies)
counterparts, each one of which shall be deemed an original, this ____ day of _____, _____.

_____
Principal (signature)

By: _____
Type/print

_____

ATTEST:

_____
Address

_____
(Principal) Secretary

(SEAL)

_____
Witness as to Principal

_____

_____
Address

SURETY: _____

By: _____
Attorney-in-Fact

ATTEST:

_____

_____
Witness as to Surety

_____

_____
Address

_____
Address

**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 where the WORK is located.**

**NOTICE TO PROCEED**

To: _____ Date: _____

Project: Multi-Agency Paving and Rehabilitation Project 2020

_____

You are hereby notified to commence WORK in accordance with the Agreement

Dated _____ On or Before _____

By: _____

Owner

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged

By _____

this the _____ day of _____ , 20 ___ .

By: _____

Title: _____

This page has intentionally been left blank.

# Multi-Agency Paving and Rehabilitation Project 2020

**For City of Gunnison, Gunnison County, And Crested Butte South Metro District**

**Gunnison County, Colorado**

## Standard General Conditions

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly by

AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
*A Practice Division of the*
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by

CONSTRUCTION SPECIFICATIONS INSTITUTE


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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*—The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.


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12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*—See Paragraph 11.01 for definition.

17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*—The individual or entity named as such in the Agreement.

20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*—Sections of Division 1 of the Specifications.

22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.


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27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*—Polychlorinated biphenyls.

31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.

37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.


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40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.

46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.

47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.

48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

49. *Unit Price Work*—Work to be paid for on the basis of unit prices.

50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.


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51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents; or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).


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E. *Furnish, Install, Perform, Provide:*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

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


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2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of


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the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

## ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*


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1. *Contractor's Review of Contract Documents Before Starting Work*: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work*: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

   a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or


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3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

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

3.06 *Electronic Data*

A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

## ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the


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Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or


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3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

   a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

   b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

   a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

   b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

   c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other


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professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

   a. reviewing and checking all such information and data;

   b. locating all Underground Facilities shown or indicated in the Contract Documents;

   c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and

   d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price


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or Contract Times, Owner or Contractor may make a Claim therefore as provided in Paragraph 10.05.

4.05 *Reference Points*

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

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by


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Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefore as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefore as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.


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I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.


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B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

   b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:


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1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

6. include completed operations coverage:

    a. Such insurance shall remain in effect for two years after final payment.

    b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:


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1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;

2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property


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insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery


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against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.


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## ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

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

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.


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6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and

3) it has a proven record of performance and availability of responsive service.

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.


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2. *Substitute Items:*

   a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

   b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

   c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.

   d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

      1) shall certify that the proposed substitute item will:

         a) perform adequately the functions and achieve the results called for by the general design,

         b) be similar in substance to that specified, and

         c) be suited to the same use as that specified;

      2) will state:

         a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,

         b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

         c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

      3) will identify:

         a) all variations of the proposed substitute item from that specified, and

         b) available engineering, sales, maintenance, repair, and replacement services; and


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4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. *Engineer's Cost Reimbursement*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or


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other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.


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6.07 *Patent Fees and Royalties*

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

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

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

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all


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court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

6.10 *Taxes*

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

6.11 *Use of Site and Other Areas*

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

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.


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C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.


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D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.


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1. *Shop Drawings:*

    a. Submit number of copies specified in the General Requirements.

    b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

    a. Submit number of Samples specified in the Specifications.

    b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

    a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

    b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

    c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

    d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop


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Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:


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1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor,


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Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.


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## ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefore, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefore as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.


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7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.

C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

## ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

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

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

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

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.


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8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

## ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

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

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits


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and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.


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B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

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

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.


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B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

## ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefore as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.


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10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

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

10.05 *Claims*

A. *Engineer's Decision Required*: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The


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opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action*: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part;

2. approve the Claim; or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay


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applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

    c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

    d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

    e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.


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f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.


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D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:*

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.


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D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;


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c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefore as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the


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control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

## ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

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

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.


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C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05.

D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.


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13.05 *Owner May Stop the Work*

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

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute


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resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and


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equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefore as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

## ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the


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Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or


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b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or


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d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefore. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities


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pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefore. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

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


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14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

   b. consent of the surety, if any, to final payment;

   c. a list of all Claims against Owner that Contractor believes are unsettled; and

   d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due:*


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1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

## ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:


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1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's repeated disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.


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F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.


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## ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or

2. agrees with the other party to submit the Claim to another dispute resolution process; or

3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

## ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.


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17.03 *Cumulative Remedies*

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

17.04 *Survival of Obligations*

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

17.05 *Controlling Law*

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

17.06 *Headings*

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


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# Multi-Agency Paving and Rehabilitation Project 2020

**For City of Gunnison, Gunnison County, And Crested Butte South Metro District**

**Gunnison County, Colorado**

## Supplementary General Conditions

# SUPPLEMENTARY GENERAL CONDITIONS

## 1.00 GENERAL

These Supplementary General Conditions amend or supplement the Standard General Conditions of the construction contract and other provisions of the contract documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms in these Supplementary General Conditions which are defined in the Standard General Conditions of the construction contract have the meaning assigned to them in the Standard General Conditions.

**1.01** Amend Section 1.01 *Defined Terms* as follows:

*Engineer*—The individual or entity named as such in the Supplementary General Conditions

## 2.00 INSURANCE

The contractor shall provide and maintain adequate workmen's compensation insurance for all labor on the work under this contract. Protection under said policies shall extend to the owner and contractor. Certifications of such insurance shall be filed with the owner prior to commencement of operations. Proof of carriage of insurance by subcontractors shall also be furnished.

**2.01** Amend Section 5.06 as follows:

5.06 Unless otherwise provided in these Supplementary General Conditions, contractor shall purchase and maintain property insurance upon the work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in these Supplementary General Conditions or required by law). This insurance shall include the interests of owner, contractor and subcontractor in the work, shall insure against the perils of fire and extended coverage, shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in these Supplementary General Conditions, and shall include damages, losses and expenses arising out of, or resulting from, insured loss or incurred in the repair or replacement of any insured property (including fees and charges of engineers, architects, attorneys and other professionals). If not covered under the "all risk" insurance, or otherwise provided in these Supplementary Conditions, contractor shall purchase and maintain similar property insurance on portions of the work stored on or off the site or in transit when such portions of the work are to be included in an *Application for Payment*. Such coverage shall be provided until the issuance of a certificate of substantial completion. The policies of insurance required to be purchased and maintained by contractor in accordance with paragraphs 5.06 and 5.07 shall contain a provision that the coverage afforded will not be cancelled or materially changed until at least thirty (30) days prior written notice has been given to owner.

**2.02** With reference to Section 5.07, the owner need not carry such insurance. All equipment shall be covered under the insurance requirements of the contractor as stated under 2.01 above.

**2.03** Amend Sections 2.01, 5.08, 5.09, and 5.10 to conform in meaning to the changes as outlined in 2.01 and 2.02 above.

**2.04** Coverage Required (minimum):

A. General Liability

1. Limits

a. Bodily Injury - $1,000,000 each person
$2,000,000 each occurrence

b. Property Damage - $1,000,000 each occurrence
$2,000,000 aggregate

2. Coverages
x Comprehensive Form
x Premises-Operations
x Explosion and Collapse Hazard
x Underground Hazard
x Products/Completed Operations Hazard
x Contractual Insurance
x Broad Form Property Damage
x Independent Contractors
x Personal Injury

B. Automobile Liability

1. Limits

a. Bodily Injury - $1,000,000 each person
- $2,000,000 each accident
b. Property Damage - $1,000,000 each occurrence
c. Combined - $1,000,000 each occurrence

2. Coverages
x Comprehensive Form
x Owned
x Hired
x Non-Owned

**3.00 TAX EXEMPTION**

Owner's tax exempt number, when applicable, to be used as part of this project, will be provided to the successful bidder.

**4.00 FINAL PAYMENT**

Lien waivers from all prime contractors and subcontractors to be provided prior to issuance of final payment.

**5.00 CONTRACT TIME**

Contract work shall be completed by October 9, 2020
,

**6.00 LIQUIDATED DAMAGES**

Liquidated damages will be **Five Hundred Dollars ($500.00)** per calendar day beyond the authorized time of completion.

**7.00 ENGINEER'S REPRESENTATIVE**

Unless provided for otherwise in writing by the engineer, any on-site inspector or representative of the engineer shall not have the authority to render any binding decisions nor make any binding judgments to the contractor pertaining to any work which may change the contract price or time of completion, or to the quality of work, or to the manner in which the work is being performed. The representative of the engineer shall serve as a means of communication between the engineer/owner and the contractor and shall monitor the work for the engineer/owner. Any communication given to the representative of the engineer by the contractor shall be considered as being given to the engineer.

**8.00 SAFETY REQUIREMENTS**

Nothing in the Contract Documents shall be construed as relieving the contractor from protecting all property and persons or from strictly adhering to all applicable local, state and federal safety requirements. Where there is a conflict between the Contract Documents and any applicable safety requirement, the safety requirement shall take precedence.

**9.00 LAWS AND ORDINANCES**

The contractor shall at all times observe and comply with all federal, state and local laws, ordinances and regulations which in any manner affect the contract or work, and shall indemnify and save harmless the owner and the owner's agents against any claim arising from the violations of any such laws, ordinances and regulations, whether by the contractor or his employees.

If the contractor performs any work knowing it to be contrary to such laws, ordinances, rules or regulations, and without notice to the engineer, he shall bear all costs arising therefrom.

**10.00 WAIVER**

It is expressly understood and agreed that any waiver granted by the engineer or owner of any term, provision or covenant of this contract shall not constitute a precedent nor breach of the same or any other terms, provisions or covenants of this contract. Neither the acceptance of the work by the owner nor the payment of all or part of the sum due the contractor hereunder, shall constitute a waiver by the owner of any claim which the owner may have against the contractor or otherwise.

**11.00 PROTECTION OF PUBLIC UTILITIES AND OTHER ADJOINING PROPERTY**

The contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury, or loss to other property at the site or adjacent thereto, and shall be liable for any and all claims for such damage on account of failure to fully provide such protection. The contractor shall notify all public utility companies at least seventy-two (72) hours prior to commencement of any work in the vicinity of the utilities. No work shall commence until the utilities have been located and staked by the utility company or written consent to proceed has been given by the engineer.

**12.00 PROJECT PHOTOGRAPHS/VIDEOS**

It is the contractor's responsibility to take a sufficient number of pre-construction photographs/videos to resolve any disputes, which may arise regarding the conditions prior to and subsequent to construction. The contractor shall provide copies of the pre-construction photographs/videos to the engineer prior to the start of work. Any potential problems should be identified at that time.

Progress and record photographs/videos shall be provided by the contractor as appropriate to resolve any disputes and to completely document the work performed as a supplement to the record drawings. In general, the photographs/videos should be sufficient to show that all work was properly completed in accordance with the plans and specifications.

**13.00 DAMAGE TO CONSTRUCTION**

The contractor shall safeguard, until all work embraced by this contract is formally accepted, all construction, both complete and incomplete, against damage and destruction, and should damage result will be required to reconstruct or repair it at his expense in a manner conforming to the plans and specifications, reconstruction shall be in a manner suitable to the engineer.

**14.00 PRE-CONSTRUCTION CONFERENCE**

A pre-construction conference shall be held within ten (10) days after the *Notice To Proceed*, at the owner's place of business. The purpose of such meeting shall be to explain as required to the contractor, the requirements of the contract documents, the procedures to be used in the administration of the contract, the requirements of any funding agencies, and to discuss any item of concern to the Work. The contractor, owner and engineer, or authorized representative of each, shall be required to attend such meeting as a condition of the contract.

**15.00 BIDDER EXPERIENCE**

Bidder experience will be considered in the award of contract.

**16.00 PERFORMANCE AND PAYMENT BONDS**

Payment and performance bonds are required. (See Section 5.01 of the General Conditions).

**17.00 WARRANTY INSPECTION**

At the owner's discretion, a warranty inspection will be held during the sixty (60) calendar days prior to the expiration of the **1-year** general warranty period. Contractor agrees to provide an authorized representative at such inspection to represent contractor's interests. All defects identified during the inspection shall be corrected at contractor's expense at direction of owner in a timely manner. Corrective work shall be commenced within ten (10) calendar days after written notice to contractor.

**18.00 PRE-QUALIFICATION**

See Section 00100, Instruction to Bidders.

**19.00 JOB SITE RESTRICTIONS**

**19.01** Salvage. All materials to be removed from the project site or demolished on site shall be disposed of by the contractor off the project site in a legal manner.

**19.02** Disposal Area. Owner's property is not available for a contractor disposal area for any other material with the exception of the City of Gunnison they will accept non-hazardous waste but no material with rebar or wire at the City Tree Dump, 2 miles north of the City.

**19.03** Working Hours. Work will normally be permitted Monday - Friday after 7:00 a.m. and prior to 5:00 p.m. Other work hours must be approved by the owner in writing. For work to be permitted on Saturday and Sunday, a 48-hour prior written notice must be given to the owner to allow for public notification.

**20.00 ARBITRATION**

Anything in the General Conditions of the contract documents, not withstanding the choice to submit any dispute to binding arbitration, shall be solely that of the owner. No other party to this contract shall have the right to submit any controversy to binding arbitration.

**21.00 PAYMENT RETAINAGE**

Retainage on pay estimates shall be ten percent (10%). If the project is substantially complete by completion date, or in the judgment of the engineer, the amount of remaining work justifies a reduction in retainage, then retainages may be reduced on the recommendation of the engineer and at the sole discretion of the owner.

**22.00 REFERENCE TO OWNER**

Each Municipality will be the owner of their portion of this project and will be referred to as owner in the Agreement. Each Municipality will assume operation and maintenance of the pavement and, therefore, reserves the right to inspect the project under the conditions of these current documents.

**23.00 PRECEDENCE OF CONTRACT DOCUMENTS**

The order of precedence of contractor documents is as follows:

1. Addenda
2. Drawings
3. Technical Specifications
4. Reference Technical Specifications
5. Supplementary General Conditions
6. Bid Documents, Agreement Documents
7. Standard General Conditions of the Construction Documents

**24.00 DEFINITION OF THE ENGINEER**

The Engineer for this project will be the Owners or an individual or entity they designate.

END OF SECTION

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# Multi-Agency Paving and Rehabilitation Project 2020

**For City of Gunnison, Gunnison County, And Crested Butte South Metro District**

**Gunnison County, Colorado**

## Technical Specifications

**SECTION 01010**
**SUMMARY OF WORK**

1.00 GENERAL

1.01 Work Covered by the Contract Documents

Hot Mix Asphalt Paving, concrete placement and finishing and associated work for Multi-Agency Paving and Street Rehabilitation Project. Work under this project and contract will be performed for and within the City of Gunnison, Gunnison County, and the Crested Butte South Development.

For this project each entity has identified streets and road work within their municipality that range from full depth reclamation, overlay, demolition and repave existing asphalt pavement, remove and install new curb and gutter as well as the installation of new concrete curb and gutter, curb ramps and valley pans where shown, construct new storm drain piping, grates and manholes as outlined below, specified elsewhere in these specifications and shown on the drawings.

Each entities scope of work bid schedule and corresponding Measurement and Payment description of bid items will vary.

## City of Gunnison

The work for the City of Gunnison will take place at two separate locations. The locations include the Palisade sub-division and the Public Works Shop area. The work will include but not be limited to the following:

Palisades

- Traffic control plan and implementation. For the City of Gunnison work, all vehicular and pedestrian traffic control shall be the responsibility of the Contractor. At the end of each work day, access to all driveways shall be restored or provisions made with City staff and property owner in advance.
- Public notification and outreach: Contractor shall work with the City Engineer and City staff to keep the public informed as to road closure, detours and the schedule for the work.
- The work for the City of Gunnison includes but is not limited to: Asphalt and concrete demolition, full depth reclamation (FDR) of paved surfaces, concrete work including: curb, gutter, valley pan and storm drain inlet formwork and concrete placement, proof rolling of subgrades, placement of additional road base as needed and directed by City engineer, structural sub-grade repairs as determined by proof rolling and the City Engineer, the installation of new storm drain inlets, boxes and piping, and the placement of new concrete curb, gutter, valley pan, concrete flatwork and new hot mix asphalt (HMA) paved roadways.
- The Full Depth Reclamation (FDR) of all roads as shown and specified shall include pulverizing the 1” to 2” of existing asphalt and mixing with 6” of underlying base material, shaping and compaction of the subgrade, and repaving with 2.5” of Hot Mix Asphalt as specified.

- Removal and replacement of curb, gutter, valley pans, and storm drain inlets and boxes.
- Structural sub-grade repairs as identified by proof rolling and approved by City Engineer.
- Concrete driveway, sidewalk and alley aprons as shown on the drawings.
- Proof rolling of all finished road base sections with a loaded 2000 gallon water truck, or equivalent, prior to placing of HMA.
- Installation of new storm sewer inlets, collection boxes and pipe system.
- The City has approximately 750 Tons of Recycled Asphalt Product available for use on City paving projects. The laboratory results for the RAP Asphalt Content, aggregate gradation and the Asphalt Binder Classification Summary is available from the City Engineer upon request.

Work at the City Public Works Shop includes but is not limited to the following:

- Removal and replacement of concrete curb and gutter
- Concrete apron placement and finish
- Concrete valley pan
- Storm drain inlet placement
- Storm drain piping excavation, placement and backfill
- Road and parking sub-grade prep and 3in of HMA placement with fiber reinforcement, per specifications
- Replacement of security gate detector loops at two locations

The City will provide construction water free of charge to the contractor. The water is available at the Gunnison Public Works Department 1100 W. Virginia, Gunnison, CO. This is the only source of City water available for the contractor to use. Contractor may use other sources at their own expense.

Non-hazardous demolition and construction waste items identified in the project may be disposed of free of charge at the City Tree Dump, located approximately 2.5miles away from the project areas.

Warm Mix Asphalt (WMA) technologies are acceptable, but must be submitted within a mix design to be reviewed and approved by the City prior to construction.

## Gunnison County

The work for Gunnison County will include paving west of the City. The County will provide Traffic Control and the trucking/hauling of both hot mix asphalt and road bases.

County Road 17 consists of a Tack Coat and 2” HMA overlay from the intersection with the Hwy 50 Frontage Road to approximately the Palisade Retreat Club Road (mile marker 2). The contractor will be responsible for all HMA placement, compaction, finish grade rolling and the site cleanup The paved road is 24’ wide. The County will perform any needed structural spot repairs on areas that exhibit structural distress or alligator cracking. The County will

prepare these areas for paving by the contractor. The County will provide traffic control, trucking of HMA and road striping.

The Contractor will be required to submit an apshalt mix design as meeting project specifications and tack coat meeting CDOT section 702-2 tack coat sepcficiations for CSS-1h or SS-1h tack coat material.

The County will provide quality assurance density testing to confirm the Contractor's quality control testing.

Payment will be made per ton of Hot Mix Asphalt placed as verified by certified weight tickets.

## Crested Butte - South

The work within the Crested Butte South area includes finish grading and paving Water's Court between Bryant Avenue and Blackstock Drive, Blackstock Drive from Water's Court to Cascadilla Street, and the Bryant Avenue/Water's Court intersection. The project work includes the following:

- Crested Butte South will do the road base prep, rough grading, preliminary compaction and shouldering of Water's Court and Blackstock Drive. The owner will provide construction staking for the road base prep and final grade.
- The road sections will either be crowned or cross sloped (2% to 3% minimums) depending upon adjacent topography and as set by the owners Engineer.
- Contractor will be responsible for all traffic control, do not anticipate flaggers. The road can be closed to through traffic with local traffic only.
- Contractor shall provide a work schedule (electronic and hard copy) to the owner's representative and to each property owner in the project area (door hangers are acceptable for property owners).
- Finished road base shall be proof rolled with a fully loaded 2000-gallon water truck (or equivalent). Areas that exhibit "pumping" or "deflection" under the wheel load shall be re-worked.
- Areas determined to deflect or pump due to poor subgrade shall be excavated and filled with a structural fill (CDOT class 4) prior to replacement of road base. The structural fill will be placed as approved by the Owner and Project Engineer in advance. Material weight tickets shall be provided to the Owner for payment of this item.
- The quality of the pavement and surface tolerances shall conform to the CDOT Standard Specifications for Road and Bridge Construction (2017).
- Contractor is responsible for removing all excess and unused asphalt, road base and excavated unusable materials.

End of Section

**SECTION 01025**
**MEASUREMENT AND PAYMENT**

## 1.00 GENERAL

### 1.01 SUMMARY

The Multi-Agency Paving and Street Rehabilitation project will include paving and rehabilitiation of streets and roads in the City of Gunnison, Gunnison County (in or within close proximity to the City), and Crested Butte South Metro District. Work for each entity will differ and may include Hot Mix Asphalt (HMA) paving and rehabilitation of streets/roads including full depth rehabilitation, concrete curb and gutter, valley pans, and replacement or installation of stormwater drainage.

This section describes the procedure for Application for Payment by the Contractor and provides a definition of bid items and how pay items are measured. This section establishes the basis of payment, application format, application content and application review process required by the Owner before they will process the application for actual payment.

The term “Owner” as referenced herein is the person appointed by the various municipality as their “owners representative” or “owners project manager”. The term engineer refers to the overall Multi-Agency project engineer, which will be Cody Tusing, PE, City of Gunnison.

Each Owner will make payment to the contractor based on work completed and accepted within their municipality. The Contractor shall submit one pay request to the engineer for review and approval, and the engineer will forward the pay request amount to each municipality for payment.

### 1.02 FORMAT AND DATA REQUIRED

A. Submit Applications for Payment and all other required forms and information to the Engineer.

B. Provide itemized data on continuation sheets.

C. Format, schedules, line items, and values: Those of the approved Schedule of Values.

### 1.03 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

A. Prepare Application for Payment and all other required information in accordance with terms and schedule established in the General Conditions, Supplemental General Conditions and the Agreement Between Owner and Contractor, or as otherwise negotiated between Owner and Contractor.

B. Application Form

1. Required information completed, including that for approved Change Orders executed and completed prior to the date of submittal of application.

2. Summary of dollar values to agree with the respective totals indicated on the bid schedule.

C. Continuation Sheets.

1. Total list of all scheduled component items of Work, with item number and the scheduled dollar value for each item.

2. Dollar value in each column for each scheduled line item when work has been performed.

3. Each Change Order executed prior to the date of submission shall be listed at the end of the continuation sheets.

4. List by Change Order number and description as for an original component item of work.

D. Contractor shall execute certification for pay request with the signature of a responsible officer of the Contractor's firm.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. When Owner or Engineer requires substantiating data, Contractor shall submit suitable information with a cover letter identifying:

1. Project name and number.

2. Application number and date.

3. Detailed list of enclosures.

B. Submit one (1) copy of data and cover letter for each copy of application.

1.05 SCHEDULE OF VALUES (if required or needed for lump sum items)

A. Refer to General Conditions for requirements.

B. Where payment is to be based on unit bid prices, correlate Schedule of Values with bid items.

C. Where payment is to be based on fixed price, correlate Schedule of Values with divisions and sections of specifications, unless otherwise approved by the Engineer.

D. On Bid, items to be paid as lump sum that may extend beyond a single pay estimate, a schedule of values shall be submitted to Owner a minimum of 10 days prior to Work on that item. Adequate detail shall be given to allow a value to be placed on Work completed during any given pay estimate. Where payment is to be based on unit Bid prices, correlate schedule of values with divisions and sections of Specifications, unless otherwise approved by the Owner. If separate payment is to be requested for materials suitably stored but not installed, paid invoices for the item shall be submitted.

E. The Schedule of Values line item for mobilization shall be paid for as a lump sum and shall include all fixed costs for the Work; by way of example, mobilization and de-mobilization, bond and insurance costs, etc. The first partial pay request shall include not more than 65% of this Bid amount; 35% of this Bid amount shall be paid on the final pay request.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

A. Contractor shall complete Application form as specified for progress payments.

B. See section 01700-Contract Closeout for final payment and closeout procedures.

## 1.07 SUBMITTAL PROCEDURE

A. Submit Application for Payment and all required information to Engineer for review in accordance with the established schedule. Application and all related forms shall be properly executed by signature of a responsible officer of the Contractor's firm.

B. Engineer to review and verify Application for Payment within established schedule. Contractor shall make corrections noted by Engineer and re-submit a copy of Application to Engineer.

C. When Engineer finds the Application complete and correct, Engineer will transmit one copies of the complete Application packet to Owner for processing.

## 1.08 BASIS OF PAYMENT

Progress payments will be made on the basis of Engineer's opinion of completed work, of individual project components, plus suitably stored materials on-hand, per the approved Schedule of Values and in accordance with the terms of the General Conditions and Agreement.

A. LUMP SUM PRICES

1. Where lump sum prices are given for a described portion of the work, that price shall cover all materials, equipment, labor and ancillary work necessary to acquire, deliver, store and install that portion of the work, complete and in place, as shown and indicated in the drawings and as described in the Project Manual.

2. Quantities given in the bid form, if provided, are estimates for the purpose of evaluating bids. Consequently, some differences may arise in actual final bid quantities.

3. Quantities given for lump sum items, including earthwork (if provided), are estimates only. The Contractor should satisfy himself as to the actual quantities required to complete the work described in the plans and these specifications. Unit costs for earthwork will not be employed to determine payment.

B. UNIT PRICE BID ITEMS

1. Payment for work included in unit price bid items shall be based on the completed value of each unit in such quantity actually installed as measured and determined by the Owner unless the approved Schedule of Values provides sufficient detail for measurement and payment of partial progress of work.

2. Unit pricing shall include all materials, equipment, labor and ancillary materials and work necessary to complete the bid item as shown and indicated in the project documents.

3. Quantities given in the bid form are estimates for the purpose of evaluating bids. Consequently, some differences may arise in actual and bid quantities.

4. Contractor or Owner may request re-negotiation of Unit Price for an item if the actual field measured work done for that item differs from the estimated quantity by more than 50% under the following terms:

   a) Contractor shall not make any claim for damages for any work item for which the actual field measurement does not differ from the estimated quantity by more than 50%, higher or lower.
   b) Re-negotiated Unit Prices shall be based on actual costs to Contractor for the specific work item plus a reasonable allowance for overhead and profit.
   c) Re-negotiating the Unit Price shall not increase or decrease the Unit Price by more than 10 percent.
   d) Contractor shall submit to Owner satisfactory data substantiating the actual costs and overhead rate to perform the Work covered by the Unit Price being re-negotiated.

5. No payment will be made within a specific item if the entire bid item is unused.

C. MINOR CONTRACT REVISIONS

1. If provided on the Bid Schedule, the Minor Contract Revisions line item is for the sole use of Owner at Owner's discretion for minor changes to the project.

2. The Contractor's shall include the dollar amount provided by the Owner for Minor Contract Revisions in his base bid total.

3. The intent of this line item is provide the Owner's designated project manager a mechanism to approve minor changes to the work, either from Contractor requested changes or from Owner modification, without unnecessary project delay.

4. The Owner shall retain all unused monies in this line item.

5. The Owner shall direct Contractor in writing when this line item is to be used along with the amount to be included in the Application for Payment. Work not authorized in advance by owner that is performed by contractor is done so at the contractors risk.

DEFINITION OF BID ITEMS. Definitions and the measurement and payment for each pay item within the bid schedules. Each municipality has a specific bid schedule with measurement and payment described below. Each municipality's bid schedule is described below.

1.09 BID ITEMS

A. **<u>Bid Item #1 - Mobilization and Demobilizaton (For ALL Schedules)</u>**

*Description*

a) This line item is for contractor mobilization and demobilization costs.

*Specific inclusions, exclusions or special considerations*

b) This line item can include costs for insurance, bonds, sanitary facilities, street cleaning, subsistance costs if needed and other items not included elsewhere or specifically called for to be paid for elsewhere.

*Payment Basis*

c) Lump Sum – 65% on first pay request, 35% on the final pay request. Each entity's share of mobilization lump sum will be: City of Gunnison 60%, Gunnison County 20%, Crested Butte South 20%

***END All Schedules Measurement and Payment Section Begin City of Gunnison***

B. **Bid Item #2 – Removal of Curb and Gutter (City of Gunnison)**

*Description*

a) This line item is for the removal and disposal of concrete curb and gutter.

*Specific inclusions, exclusions or special considerations*

b) Work includes removal, hauling and disposal in a legal manner. The City will accept, free of charge, broken concrete at the City Tree Dump. The concrete must be free of rebar.

*Payment Basis*

c) Per linear foot of curb and gutter removed as measured in the field, prior to removal, as measured along the flow line.

C. **Bid Item #3 - Removal of Cross Pans/Valley Gutters (City of Gunnison)**

*Description*

a) This line item is for the removal and disposal of concrete cross pans.

*Specific inclusions, exclusions or special considerations*

b) Work includes removal, hauling and disposal in a legal manner. The City will accept, free of charge, broken concrete at the City Tree Dump. The concrete must be free of rebar.

*Payment Basis*

c) Per linear foot of cross pan removed as measured in the field, prior to removal, as measured along the flow line.

D. **Bid Item #4 - Removal of Storm Inlets and Boxes (City of Gunnison)**

*Description*

a) This line item is for the complete removal and disposal of storm inlets and boxes.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor and equipment to completely remove and dispose of in a legal manner.

*Payment Basis*

c) Each.

E. **Bid Item #5 – Asphalt Sawcut and Removal (City of Gunnison)**

*Description*

a) Edge sawcutting and asphalt removal and disposal where shown or directed by City Engineer.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor and trucking to dispose of asphalt at the City Tree Dump.

*Payment Basis*

c) Per Square Yard as measured in the field.

F. **Bid Item #6 – Landscape: Backfill & Sod (City of Gunnison)**

*Description*

a) This line item is for placing new sod and backfill where the existing grass ends and the placement of the relocated new curb/gutter leaves a void.

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, and work required to fill the void with backfill (4" free from debris) followed up with 2" of topsoil prior to placing sod. The City has fill material available available at the tree dump or the contractor can use on-site material meeting the 4" requirement. Topsoil has to be provided by the contractor.

*Payment Basis*

c) Square yard of sod placed

G. **Bid Item #7 – Structural and Subgrade Repairs (City of Gunnison)**

*Description*

a) This line item the excavation of poor soils and replacment with structural fill.

*Specific inclusions, exclusions or special considerations*

b) For locations where poor subgrade exists as marked in the field by City Engineer. Includes importation of a (class 5 or 6) structural fill, placement and compaction. Work also includes disposal of the excavated material, the City Tree Dump can be used for this purpose.

*Payment Basis*

c) Per cubic yard of structural fill placed.

H. **Bid Item #8 – Base: Removal and Prep (City of Gunnison)**

*Description*

a) Pertains to stripping existing surface material (topsoil, road base/organics mix) down to subgrade and prepping subgrade for bid item 27. The work is located at the Public Works Yard area.

*Specific inclusions, exclusion or special considerations*

*b) The City will provide layout for areas to prep. All excavated material can be disposed of at the City Tree dump. This line item includes sub-grade compaction and proof rolling with 2000 gallon water truck.*

*Payment Basis*

*c) Per Cubic Yard as measured by survey equipment or as agreed to with City Engineer.*

I. **Bid Item #9 – Full Depth Reclamation (City of Gunnison)**

*Discription*

a) This line item is for the pulverization and reuse of existing paved street and base material.

*Specific inclusions, exclusions or special considerations*

b) Work includes pulverization of the existing asphalt surface (2” to 3” varying thickness) and mixing with 6” of underlying base material. The pulverized material shall equal a CDOT class 5 gradation.

*Payment Basis*

c) Per square yard of asphalt/base pulverized.

J. **Bid Item #10 – Road Base: CDOT Class 6, In-Place (City of Gunnison)**

*Discription*

a) This line item is for the importation and placement of CDOT class 6 material as needed or where shown.

*Specific inclusions, exclusions or special considerations*

b) Includes sub-grade prep and compaction prior to placing of new material. Shaping, addition of water and compacting to meet specs is included..

*Payment Basis*

c) Per tons of material placed as verified by certified weight ticket. Weight tickets delivered to owners representative daily.

K. **Bid Item #11 – 2.5 In. Asphalt Mat: SX75 PG58-28 (City of Gunnison)**

*Description*

a) 2.5” Hot Bituminous Pavement to the lines and grades as shown.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor, materials, sub-grade prep and compaction, tack and prime coat (if required see specs), furnish and install, complete and in place. 2.5” depth is after compaction.

*Payment Basis*

c) Per square yard as measured in the field.

L. **Bid Item #12 – Asphalt: 3” HMA SX75 PG58-28 (City of Gunnison)**

*Description*

a) 3” Hot Bituminous Pavement to the lines and grades as shown.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor, materials, sub-grade prep and compaction, tack and prime coat (if required see specs), furnish and install, complete and in place. 3” depth is after compaction.

*Payment Basis*

c) Per square yard as measured in the field.

M. **Bid Item #13 – Storm Sewer Pipe: 8in PVC SDR 35 (City of Gunnison)**

*Description*

a) This line item is for the supply and placement of a 8” diameter storm drain pipe. The work includes the placement to line and grade, bedding, and cleaning of the new pipe.

*Specific inclusions, exclusions or special considerations*

b) The excavation, backfill, compaction and hauling off of excess material is included in this bid item. Also included are any fittings as needed.

*Payment Basis*

c) Per linear foot of pipe placed as measured in the field.

N. **Bid Item #14 – Storm Sewer Pipe: 10in PVC SDR 35 (City of Gunnison)**

*Description*

a) This line item is for the supply and placement of a 10” diameter storm drain pipe. The work includes the placement to line and grade, bedding, and cleaning of the new pipe.

*Specific inclusions, exclusions or special considerations*

b) The excavation, backfill, compaction and hauling off of excess material is included in this bid item. Also included are any fittings as needed.

*Payment Basis*

c) Per linear foot of pipe placed as measured in the field.

O. **Bid Item #15 – Storm Pipe: 12 inch PVC SDR 35 (City of Gunnison)**

*Description*

a) This line item is for the supply and placement of a 12” diameter storm drain pipe. The work includes the placement to line and grade, bedding, and cleaning of the new pipe. Includes new pipe and all associated fittings. For work where shown on the drawings.

*Specific inclusions, exclusions or special considerations*

b) The excavation, backfill, compaction and hauling off of excess material is included in this bid item. Also included are any fittings and appurtenances for a complete connection. See drawing for details and insulation requirement.

*Payment Basis*

c) Per linear foot of pipe placed as measured in the field.

P. **Bid Item #16 – Storm Drain Box 36”x24”x48” ID (City of Gunnison)**

*Description*

a) This line item is for the complete installation of storm box dimensioned as shown

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, excavation, backfill, compaction, bedding needed to place box where shown.

*Payment Basis*

c) Each

Q. **Bid Item #17 – Storm Drain Inlets (City of Gunnison)**

*Description*

a) This line item is for the complete installation of storm drain inlet box and specified grates.

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, excavation, backfill, compaction, bedding needed to place box and curb inlet to proper grade with precast concrete box, and curb inlet as shown.

*Payment Basis*

c) Each

R. **Bid Item #18- Storm Inlet: Cast Iron – IFG-1927 C.I. (City of Gunnison)**

*Description*

a) This line item is for the complete installation of storm drain inlet grate within concrete box.

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, and work required to properly set the cast iron grate within a concrete box.

*Payment Basis*

c) Each

S. **Bid Item #19 – Storm Inlet: Cast Iron – IFG-13 C.I. (City of Gunnison)**

*Description*

a) This line item is for the complete installation of storm drain inlet grate within concrete box.

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, and work required to properly set the cast iron grate within a concrete box.

*Payment Basis*

c) Each

T. **Bid Item #20 – Storm Inlet: Concrete Apron 8’x8’x0.5’ (City of Gunnison)**

*Description*

a) Includes subgrade prep, formwork and concrete placment and finish.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor for a finished product.

*Payment Basis*

c) Each

U. **Bid Item #21 – Storm Concrete Box: 3.5'x3.0'x3.5' O.D. (City of Gunnison)**

*Description*

a) This line item is for the complete installation of storm drain inlet box.

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, excavation, backfill, compaction, bedding needed to place box and to proper grade with precast concrete box. Inlet grate is paid for in other bid item.

*Payment Basis*

c) Each

V. **Bid Item #22 – Storm Manhole: 48" I.D. x 72" (City of Gunnison)**

*Description*

a) This line item is for the complete installation of storm manhole.

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, excavation, backfill, compaction, bedding needed to place manhole and to proper grade with precast manhole. Item includes manhole cover.

*Payment Basis*

c) Each

W. **Bid Item #23 – Storm Concrete Box: 4.0'x3.0'x3.5' O.D. (City of Gunnison)**

*Description*

a) This line item is for the complete installation of storm drain inlet box.

*Specific inclusions, exclusions or special considerations*

b) This item shall include all labor, materials, excavation, backfill, compaction, bedding needed to place box and to proper grade with precast concrete box. Inlet grate is paid for in other bid item.

*Payment Basis*

c) Each

X. **Bid Item #24 – Utility Potholing (City of Gunnison)**

*Description*

a) This line item is for the locating, marking, and drilling of potholes to determine utility line depths at locations as approved by the Engineer.

*Specific inclusions, exclusions or special considerations*

b) Included in this item are traffic control, Backfill of potholes and capping with asphalt or concrete as needed.

*Payment Basis*

c) Each

Y. **Bid Item #25 – Valve Cover: Installed (City of Gunnison)**

*Description*

a) This line item is replacing existing water valve and water meter covers.

*Specific inclusions, exclusions or special considerations*

b) Includes installation only. The City will provide valve and meter covers.

*Payment Basis*

c) Per each installed

Z. **Bid Item #26 – Manhole Rings: Installed (City of Gunnison)**

*Description*

a) This line item is for adjusting manholes to grade to match the crown of the road.

*Specific inclusions, exclusions or special considerations*

b) Installed per plans, see project drawings for product requirements.

*Payment Basis*

c) Per each

AA. **Bid Item #27 – Curb Stop Cover: Installed (City of Gunnison)**

*Description*

a) This line item is replacing existing curb stop valve covers.

*Specific inclusions, exclusions or special considerations*

b) Includes installation only. The City will provide valve covers.

*Payment Basis*

c) Per each

BB. **Bid Item #28 – Curb and Gutter: CDOT Type IIB (City of Gunnison)**

*Description*

a) Concrete curb and gutter to line and grades as shown.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor, materials, sub-grade prep and compaction, finish and curing for standard curb and gutter. This includes all flush sections and transitions through driveways and around curb returns with ramps.

*Payment Basis*

c) Per linear foot as measured along the flow line of the gutter pan.

CC. **Bid Item #29 – Concrete Valley Gutter; W=4ft. (City of Gunnison)**

*Description*

a) Construction of concrete valley gutter as shown on drawings.

*Specific inclusions, exclusions or special considerations*

b) Work includes subgrade prep and compaction, concrete placement, finish and curing.

*Payment Basis*

c) Per linear foot of gutter as measured in the field along center line of gutter.

DD. **Bid Item #30 – Concrete Valley Gutter; W= 5ft. (City of Gunnison)**

*Discription*

a) Construction of concrete valley gutter as shown on drawings.

*Specific inclusions, exclusions or special considerations*

b) Work includes subgrade prep and compaction, concrete placement, finish and curing.

*Payment Basis*

c) Per linear foot of gutter as measured in the field along center line of gutter.

EE. **Bid Item #31 – Concrete Valley Gutter; W=6ft. (City of Gunnison)**

*Description*

a) Construction of concrete valley gutter as shown on drawings.

*Specific inclusions, exclusions or special considerations*

b) Work includes subgrade prep and compaction, concrete placement, finish and curing.

*Payment Basis*

c) Per linear foot of gutter as measured in the field along center line of gutter.

FF. **Bid Item #32 – Alley Entrance Apron (Concrete) (City of Gunnison)**

*Description*

a) Construction of concrete apron as shown on drawings.

*Specific inclusions, exclusions or special considerations*

b) Work includes subgrade prep and compaction, concrete placement, finish and curing.

*Payment Basis*

c) Per Square Yard as measured in the field

GG. **Bid Item #33– Concrete Driveway & Sidewalk Extensions (City of Gunnison)**

*Discription*

a) Construction of concrete driveway and sidewalk extensions as shown on drawings.

*Specific inclusions, exclusions or special considerations*

b) Work includes subgrade prep and compaction, concrete placement, finish and curing. Work includes baricading or fencing to keep pedestrians off fresh concrete.

*Payment Basis*

c) Per Square Yard as measured in the field

HH. **Bid Item #34 – Concrete Apron: Water Fill Station and Entranc Access Gates – 8" Thick (City of Gunnison)**

*Description*

a) Construction of concrete flatwork (apron) as shown on drawings.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor for a finished product. This item includes resetting the safety detector loops (see sheet 11 Parking and Drainage Improvements drawing set).

*Payment Basis*

c) Per square foot as measured in the field.

II. **Bid Item #35 - Public Communications (City of Gunnison)**

*Description*

a) This line item is for weekly updates and weekly schedule updates for the public.

*Specific inclusions, exclusions or special considerations*

b) Work includes schedule updates and public notifications on a weekly basis and can include door hangers. See General Notes within the City of Gunnison plan set.

*Payment Basis*

c) Lump sum based on percentage of work complete.

JJ. **Bid Item #36 - Traffic Control (City of Gunnison)**

*Description*

a) Traffic Control for all work within City of Gunnison Streets and Street ROW.

*Specific inclusions, exclusions or special considerations*

b) See spec section 01570. Pertains to both Pedestrian and Vehicular traffic.

*Payment Basis*

c) Lump Sum and paid based on percentage of total work complete

KK. **Bid Item #37 – Stormwater Management Plan/ Erosion Control (City of Gunnison)**

*Description*

a) This line item includes all labor, materials and equipment for the control of storm runoff from the construction site.

*Specific inclusions, exclusions or special considerations*

b) Item includes SWMP development, management, initial set, replacement, and removal of all erosion control materials.

*Payment Basis*

c) Lump Sum based on precentage of work complete.

***END City of Gunnison Measurement and Payment Section Begin Gunnison County***

LL. **Bid Item #38 – Hot Bituminous Asphalt Overlay (2") with Tack Coat (Gunnison County)**

*Description*

a) 2" Hot Bituminous Pavement Overlay.

*Specific inclusions, exclusions or special considerations*

b) Includes all labor, materials, road sweeping, tack coat (required), compaction, finish rolling, complete and in place. 2" depth is after compaction.

c) Not included is traffic control and Hot Mix Asphalt hauling from the batch plant to the back of the paver (provided by County).

*Payment Basis*

d) Per Ton as verified by weight tickets provided to drivers.

***END Gunnison County Measurement and Payment Section Begin Crested Butte- South***

MM. **Bid Item #39 - Traffic Control (Crested Butte - South)**

*1. Description*

a) Traffic Control for all work within Crested Butte South Streets and Street ROW.

*2. Specific inclusions, exclusions or special considerations*

a) See spec section 01570. Pertains to both Pedestrian and Vehicular traffic. Crested Butte South traffic control work shall include informing residents of when work will impact them. Also included is appropriate warning signs at the intersection of Blackstock Drive with County Road 740 and with Cascadilla Street. Access to all residents shall be restored at the end of each work day. Temporary road closures and detouring will be allowed during paving operations. Coordinate public notification with owners representative.

*3. Payment Basis*

a) Lump Sum

NN. **Bid Item #40 –Structural Fill CDOT Class 4 (Crested Butte South)**

a) This line item is for the importation of CDOT class 4 material as needed to replace poor subgrade as determined by proofrolling and as approved by Crested Butte South engineer.

*Specific inclusions, exclusions or special considerations*

b) Includes hauling, grading and compaction of road base prior to proof roll and placing of Hot Mix Asphalt.

*Payment Basis*

c) Per tons of material placed as verified by certified weight ticket. Weight tickets delivered to owners representative daily.

OO. **Bid Item #41 - Hot Bituminous Asphalt (3”) (Crested Butte South)**

*Description*

a) 3” Hot Bituminous Pavement to the lines and grades as determined in the field.

*Specific inclusions, exclusions or special considerations*

a) Includes all labor, materials, equipment, and the placement, compaction, and finish rolling, of Hot Mix Asphalt. 3” depth is after compaction.

*Payment Basis*

b) Per Ton as verified by weight tickets provided to owners representative.

END OF SECTION

# SECTION 01300

# SUBMITTALS

## 1.00 GENERAL

1.01 Requirements Included. The Contractor shall submit to the Engineer for approval all submittals required by these Specification sections.

1.02 Insurance Certificates. Refer to Construction Agreement for submittal requirements. Submit updated certificates as necessary to verify current coverage.

1.03 Schedule of Values. It is not anticipated that a schedule of values will be necessary for this project however, the contractor can create a schedule of values as needed.

1.04 Construction Schedule. Tentative schedule submitted with Bid. Submit at the Pre-Construction Meeting.

1.05 Required Submittals.

A. Paving mix design
B. Concrete mix design
C. Aggregate base course materials
D. Storm drain piping and appurtenances
E. Traffic control plan (where called for)
F. Insurance certificates
G. Project specific safety plan

End of Section

## SECTION 01310

## CONSTRUCTION SCHEDULES

### 1.00 GENERAL

A. Within ten (10) days after EFFECTIVE DATE OF AGREEMENT or by the pre-construction conference, the **CONTRACTOR** shall prepare and submit to the **OWNER** estimated construction progress schedules for the Work, with sub-schedules of related activities which are essential to the progress of the Work.

The schedule shall consist, at minimum, of two parts. The overall schedule shall depict when the contractor and/or the contractors sub contractors will be working within the various municipalities. The second part of the schedule shall include a municipality specific schedule for each project area. For example:

| | |
|---|---|
| Schedule 1 | City of Gunnison |
| Schedule 2 | Gunnison County |
| Schedule 3 | Crested Butte – South |

If the Contractor falls behind on the schedule as submitted, and accepted by the Owners, the Contractor shall provide an updated schedule <u>depicting how the project will be brought back on to schedule.</u>

<u>Due to the need to keep the private property owners informed as to the work areas and impacts to them, the Contractor is expected to keep the project schedule current at all times and the Municipalities informed.</u>

B. Submit revised progress schedules as follows:

1. <u>Weekly:</u> Submit a two-week schedule depicting items of work and general locations for the two weeks succeeding the date of submittal. Needs from **Owner** (submittal reviews, requests for information, etc) shall be included. This may be in the form of a spreadsheet and shall contain adequate detail to provide clear vision to all of the intended work. The Owner or Owners Project Representative shall be notified of variations from this schedule as soon as known and no later than the morning of the effected change.

2. The Weekly schedule, as updated, shall include information related to need for, and locations of, short duration service interruptions and locations where the project work will be expedited by curtailment of residential water (wastewater generation) uses.

3. Weekly schedule updates shall include additional manpower and/or equipment required to maintain the schedule and meet the completion date.

4. <u>Monthly:</u> With each progress payment request, submit an updated progress schedule as detailed herein. Failure to submit this updated

progress schedule or providing a progress schedule that does not represent the true status of the project as determined by the **Owner**, shall be grounds for a determination that no further progress payments are to be made until **Contractor** is in full compliance with this section.

C. Related Requirements Specified Elsewhere. Section 01300

1.01 Form of Schedules

A. Prepare schedules in the form of a horizontal bar chart via spreadsheet or scheduling software.

1. Provide separate horizontal bar for each trade or operation.
2. Horizontal time scale: Identify the first work day of each week.
3. Scale and spacing: To allow space for notations and future revisions.
4. Maximum sheet size: 11" x 17”.

B. Computer generated schedule.

Network analysis system may be utilized in lieu of bar chart however, this is not required.

C. Format of Listings.

The chronological order of the start and duration of each item of work.

1.02 Content of Schedules

A. Construction Progress Schedules to include:

1. The complete sequence of construction by activity.

2. The dates for the beginning, and completion of, each major element in each major area of construction, including but not limited to:

a. Traffic Control Plan per location
b. Shop Drawing submittals
c. Pavement pulverization and or milling per location
d. Chip seal, fog seal and slurry seal per location
e. Road subgrade inspection and proof rolling
f. Paving per location
g. Concrete work Curb and Gutter/Valley pan removal and replacement per location
h. Drainage work
i. Surface restoration
j. Street clean up and project completion

3. Projected percentage of completion for each item, as of the date on which each scheduled Application for Payment is due.

B. Products Delivery Schedule.

Show delivery dates for all major items of material and equipment (piping, manholes, and source of base course and any imported fill, pavement.)

1.03 Progress Revisions

A. Indicate progress of each activity to date of submission.

B. Show changes occurring since previous submission of schedule.

1. Major changes in scope.
2. Activities modified since previous submission.
3. Revised projections of progress and completion.
4. Revisions to projected progress payment schedule.
5. Other identifiable changes.

C. Provide a narrative report as needed to define:

1. Problem areas, anticipated delays, and the impact on the schedule.
2. Corrective action recommended and its effect.

1.04 Submissions

A. Submit initial schedules within ten (10) days after effective date of Agreement.

1. **ENGINEER and OWNER** will review Schedules and return review copy within ten (10) days after receipt.
2. If required, resubmit within seven (7) days after return of review copy.

B. Submit revised progress schedules with each Application for Payment.

C. Number of copies required at each submission:

1. Submit at minimum two (2) copies.

1.05 Distribution

A. After review, **ENGINEER** will distribute copies of schedules to:

1. One (1) copies to each **OWNER Representative**.
2. One (1) copy to be retained in **ENGINEER**'s file.
3. One (1) copy to retained by **CONTRACTOR** to be kept on file at **CONTRACTOR**'s field office.

B. Schedule recipients will report promptly to **ENGINEER** and **CONTRACTOR**, in writing, any problems anticipated by the projections shown on the schedules.

END OF SECTION

# SECTION 01570

# TRAFFIC CONTROL

## 1.0 GENERAL

1.01 Scope. This work shall consist of furnishing, installing, moving, maintaining and removing temporary traffic signs, advance warning signs, barricades, channelizing devices, delineators)" and the latest revisions of the Colorado Supplement thereto, in accordance with the Drawings and these Specifications.

This traffic control specification only applies to the areas and municipalities where traffic control is a contractor requirement. For all municipalities, the contractor shall maintain access for residents and emergency service vehicles at all times during the work of this project.

1.02 Reference Standards.

A. Federal Highway Administration; Manual on Uniform Traffic Control Devices.

B. Colorado Department of Transportation, Standard Specifications for Road and Bridge Construction, Current Version

1.03 Submittals.

A. Traffic Control Plan. Traffic control, both **vehicular** and **pedestrian**, through the construction areas is the responsibility of the Contractor, where specified elsewhere. The Contractor shall prepare a Traffic Control Plan (TCP) to be submitted with the return of the signed agreement or at preconstruction meeting.

The Contractor shall continually review their methods of handling traffic. If revisions are needed for the safe movement of traffic through or around the work areas, the Contractor shall immediately notify the Engineer. The Contractor may implement temporary revisions to the MHT if, in the absence of the Engineer, if failure to make the revision could compromise the safety of the public. It shall be the responsibility of the Contractor to notify the Fire and Police Departments, the ambulance service, and the School District's Transportation Service twenty-four (24) hours prior to the full or partial closure of any street.

Changes in the plan or the methods of handling traffic shall be approved by the Engineer. Approval of the traffic control plan and the proposed methods of handling traffic in no way shall relieve the Contractor of liability specifically provided for in the Contract.

## 2.00 MATERIALS

2.01 General. All materials shall conform to the applicable portions of the Reference Standards.

2.02 Barricades. Minimum 8' wide on movable skids.

## 3.00 METHODS AND PROCEDURES

3.01 Detours. Will be allowed after discussion with and approval by Muncipality Public Works Director. Approval for detours and road closures must be secured in advance and adequate public notice must be given (minimum of 72 hours).

3.02 Partial Road Closures. Will be allowed after discussion with and approval by Municipality Public Works Director. Approval for partial road closures must be secured in advance and adequate public notice must be given (minimum of 72 hours).

3.03 Flagmen. Provide as needed, or as required by the MUTCD to control traffic encroaching in construction zone.

3.04 Barricades, Channelizing Devises, Flashing Warning Lights. Provide for all work areas, open trenches, lane closures, equipment and material storage, etc., and as called for on the Drawings and or approved TCP located within limits of construction. Protection to be in place 24 hours per day and device inspection shall be seven days per week.

## 4.00 MEASUREMENT AND PAYMENT

See spec section 01025 - Measurement and Payment.

End of Section

**SECTION 01700**
**CONTRACT CLOSEOUT**

1.00 GENERAL

1.01 Scope. Work to be performed under this section shall include all labor, equipment, materials and miscellaneous items necessary to provide all documents, information and items as specified herein.

1.02 Related Work Specified Elsewhere.

All specification sections.

1.03 Project Record Documents.

A. Job site documents: Maintain at the job site one record copy of the following:

1. Drawings
2. Specifications
3. Addenda
4. Reviewed Shop Drawings
5. Change Orders
6. Other Modifications to Contract
7. A set of drawings shall be kept on the job site for recording of “as built” information. Underground utilities are the work item that shall be recorded on the record drawings.

Do not use record documents for construction purposes. Maintain documents in clean, dry legible condition, apart from documents used for construction in the field.

B. Record Information: label each document "Record Document". Mark all information with contrasting color using ink. Keep each record current. Do not permanently conceal any work until required information is recorded.

Record following information on Drawings:

1. Depth of piping, size, type and appurtenances (valves etc..).

2. Horizontal and vertical location of underground utilities, provide swing ties to permanent objects such as manhole lids or project survey control points.

3. Location of internal utilities and appurtenances concealed in construction.

4. Field changes of dimension and detail.

5. Changes by Change Order or field order.

6. Details not on original Contract Drawings.

Record following information on Specifications:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed (hydrants, meters, gate valves and other piping appurtenances).

2. Changes by change order or field order.

3. Other matters not originally specified.

Maintain Shop Drawings as record documents recording changes made after review as specified for Drawings above, if this applies.

Submittal: At completion of project, deliver record documents to Engineer with transmittal letter containing date, project title and number, contractor's name and address, title and number of each record document, and certification that each document is complete and accurate. Submittal shall be signed by Contractor or his authorized representative.

1.04 Closeout Procedures. The following project closeout procedure defines the responsibilities of the Contractor, Owner and Engineer in closing the project:

Step 1: Contractor advises Owner in writing that he has reached "Substantial Completion" and provides a list of items to be completed or corrected. Closeout may be conducted by areas or portions of the work if requested by Owner.

Step 2: The Owner and Engineer inspects the work to determine if it is substantially complete, and issues a Certification of Substantial Completion plus a "punch list" of items to be completed or corrected.

Step 3: Contractor completes and/or corrects all punch list items and notifies in writing that his work is ready for final inspection. At this time, a final application for payment is submitted to the Engineer.

Step 4: The Owner and Engineer makes final inspection. When the Work is found to be acceptable under the Contract Documents, and the contract fully performed, Engineer will issue a final Certificate of Payment.

1.05 Re-Inspection Fees. Should the Contractor fail to complete and/or correct all punch list items such that additional inspections are required by the Engineer, the Contractor will be billed at the Engineer's current rate for additional services. If the Contractor has any question with regard to any items on the punch list, he/she is to request clarification before final inspection.

1.06 Final Paperwork. Prior to release of final payment, the General Contractor shall deliver the following items to the Engineer:

- Inspection Certificates, as applicable.
- Equipment and material guarantees.
- General Contractor's one-year guarantee of materials and workmanship.
- Maintenance Manuals and Parts Lists, as specified.
- All other guarantees, warranties and submittals, as specified.
- Receipts for extra materials delivered to the Owner.
- Miscellaneous keys, switches, etc.
- Final application for payment.
- Consent of surety to final payment.
- Contractor's affidavit of release of liens.
- Project record drawings.
- Contractor acknowledgement of Date of Substantial Completion.

The above items are described in following articles or applicable sections of the Specifications.

1.07 Inspection Certificates. Each subcontractor shall, upon completion of the Work, secure in

triplicate from any state or local governing bodies having jurisdiction in dictating that the Work is in strict accordance with the applicable codes and deliver same to the General Contractor for transmittal to the Owner.

1.08 Warranties. The General Contractor and each subcontractor shall remedy any defects due to faulty materials or workmanship and pay for any damage to other Work resulting there from, which shall appear in his Work within a period of TWO year from the date of Notice of Acceptance and in accordance with the terms of any special warranties provided in the Contract. The Owner shall give notice of observed defects with reasonable promptness. A complete warranty inspection will be scheduled at approximately twenty-three (23) months.

Upon completion of his Work, the General Contractor shall deliver to the Engineer in duplicate, a written warranty based on the provision of the Article properly signed and notarized. Warranty shall be address to the Owner.

1.09 Miscellaneous Keys, Switches and Wrenches. At the completion of the project, all loose keys for any gates or locks shall be accounted for and turned over to the correct Agency, if any.

END OF SECTION

## SECTION 02221

## TRENCHING, BACKFILLING AND COMPACTION

### 1.00 GENERAL

1.01 Scope. Work to be performed under this section shall include all labor, equipment, materials and miscellaneous items necessary to perform all excavation, backfilling and compaction for underground pipelines, manholes, sanitary and storm sewer services and appurtenances shown on the Drawings and specified herein.

1.02 Related Work Specified Elsewhere.

Section 02222 – Structural and Base Course Aggregate

1.03 Field Conditions.

A. Existing Utilities. Underground utilities known to the various municipal Engineer or staff have been shown on the Drawings. Locations are shown on the plans based upon either field survey and record drawings, or just record drawings. Locations are approximate and may prove to be inaccurate. The Contractor is responsible for verification of the existence, location and protection of all utilities within the construction area.

Before commencing with work, the Contractor shall notify all public and private companies who may have utilities within the project limits. The Contractor shall coordinate with these entities all excavation performed. The Contractor shall obtain all permits required by utility owners.

In the event of damage to any existing utility, the Contractor shall be solely responsible for the repair and payment for repair of all such damage.

B. Existing Improvements. The Contractor shall restore or protect from damage all existing improvements encountered in performance of the work. Improvements damaged, as a result of this work shall be restored to original condition or better, as determined by the Engineer.

Adjacent property shall be protected by the Contractor from any damage. The Contractor shall be held solely liable for any damage to adjacent property and shall be responsible for all costs resulting from repair of such damage.

1.04 Protection of Work.

A. Safety. All excavation shall be protected by barricades, lights, signs, etc., as required by governing federal, state and local safety codes and regulations. The bulk of the work of this project is in a residential area. Safety of children, pedestrians and employees shall be a priority. No open trenching shall be left un protected, fenced or barricaded overnight and/or when not being actively worked. Temporary fencing or other measures shall be employed, as needed, to keep job site safe.

B. Sheeting, Shoring and Bracing. Where trench walls are not excavated at a stable slope, the Contractor shall provide and maintain support sufficient to prevent caving, sliding or failure and property or bodily damage. Any damage due to inadequate support shall be repaired at the sole expense of the Contractor.

The Contractor is responsible for general construction and trench safety per OSHA guidelines.

C. Site Drainage. Excavations shall be protected from surface water at all times. At no time shall excavated area be allowed to fill with storm water runoff. Contractor shall provide proper, temporary drainage structures at their cost to detour runoff from excavated areas.

1.05 Blasting. Not anticipated or allowed for this project.

1.06 Submittals.

A. Bedding Material
1. Submit sieve analysis

B. Select Fill
1. Submit sieve analysis
2. Inspection of material by Engineer

## 2.00 MATERIALS

Backfill and bedding materials are as specified within these specifications, Section 02222, and drawings.

Bedding Material. Pipeline embedment material (bedding) shall comply with the appropriate classes as listed below and as illustrated in the Construction Drawings:

A. Use for all PVC, DIP, CMP, HDPE, and concrete pipe under normal construction conditions.

1. Characteristics - Densely compacted 2" minus well grade material similar to a CDOT class 4 or 5 or approved equal. Existing bedding or native material meeting this gradation will be acceptable. Other products may be used if approved by the Engineer.

2.02 Select Backfill and Structural Backfill Material. Subject to approval by the Engineer, select and structural fill material can be the same product. Class 6 or ¾ minus well graded material – contractor shall provide a submittal for product approval.

2.04 Backfill Material.

A. For all trench backfill under streets backfill shall be CDOT Class 6 road base for the full depth of the trench or a structural fill as described above, compacted using vibratory equipment to 95% of maximum dry density modified proctor. Backfill material is material above the Bedding and below the road base course. On site existing material may be used if screened of rocks larger than 2" are not part of the fill. As part of the bid item contractor is responsible to haul and dispose of any excess excavated material not used or suitable for use.

## 3.00 METHODS AND PROCEDURES

3.01 All work to be done in accordance to the Contract Document, City or County Construction Standards and applicable ASTM Standards as well as the following:

A. Clearing. Remove all debris and other miscellaneous structures and materials from project site. Dispose of off-site.

B. Pavement Removal. Clean saw cuts must be used on all asphalt and concrete surfaces. If the asphalt is grinded/pulverized, the pulverized product may be used for backfill and/or road base material if it meets the gradation requirements.
a. Pavement Removal. Sawcut and remove or pulverize and re-use as base course. It is

anticipated that for this project any underground utilities specified or shown will be installed after roadway is pulverized and “bladed” off. If waterline work or service line replacement takes place prior to the asphalt being pulverized then the contractor will be required to replace trench with Class 6 base course to an elevation of the top of the existing asphalt.

B. Groundwater Control. It is not anticipated that groundwater entering excavations will be an issue for these projects. Water in the ground as a result of recent precipitation will classified as “storm water”. If true ground water becomes problematic, notify the project engineer and an equitable adjustment to the contract will be made to compensate for additional work.

C. Stockpile Excavated Material. Excavated material to be stockpiled so as not to endanger the work, Road traffic, or public safety. Stock pile locations are to be approved by the Municipalities. The Contractor shall maintain existing vehicular and pedestrian traffic with minimum disruption. As part of contractor project clean up, streets utilized for stockpile of materials shall be swept clean. Maintain natural drainage courses and culverts.

3.02 Trench Excavation

A. Limits of Excavation. Trenches to be excavated along lines and grades shown on the Drawings, or as modified in the field by the Engineer.

1. Minimum trench width to be the outside diameter of the pipe or conduit plus 12 inches or the width of the compaction tamper plus 2” on each side of pipe.

2. Maximum trench width to be the outside diameter of the pipe or conduit plus 24 inches (each side) for all pipes or conduits with outside diameter of 24 inches or less, and plus 30 inches for all pipes or conduits with outside diameters greater than 24 inches.

3. If maximum trench width is exceeded, Contractor will provide at his expense, additional bedding and structural backfill at the direction of the Engineer.

4. Trench excavation not to be completed more than 100 feet in advance of pipe installation. Backfill to be completed within l00 feet of pipe installation.

3.03 Bottom Preparation.

A. Undisturbed Foundation. Where soils are suitable and have adequate strength, trench bottoms shall be graded and hand-shaped such that pipe barrel rests uniformly on undisturbed soil. All rocks or stones, which may result in a point bearing on the pipe, shall be removed.

Undisturbed grades shall be within 0.1 feet ± tolerance. Soils for final pipe grade placed within these limits shall be fine granular (100% passing No. 4 sieve) or may be native materials, hand compacted to 95% maximum density modified proctor.

B. Bell Holes. Material to be removed to allow installation of all fitting and joint projections without affecting placement of pipe.

C. Over-excavation. Whenever trench is over-excavated to eliminate point bearing by rocks or stones or when grade tolerances of 0.1' are exceeded, the Contractor is to re-establish grade using bedding material. Compaction shall be 95% maximum density modified proctor. All work to re-establish grade shall be at the Contractor's expense.

C. Unstable Materials. Materials incapable of supporting superimposed loadings are defined as unstable materials. Should unstable materials be encountered during excavation, immediately notify Engineer. All over excavation of unstable materials shall be addressed at the time of discovery and while observable. An equitable adjustment to the contract will be made if over excavation is required for replacing unsuitable soils.

D. Bedrock Excavation. Excavation material that cannot be removed with a tracked excavator (50,000 lb. or larger) will be considered bedrock excavation. NOT ANTICIPATED FOR THIS PROJECT. If rock as defined above is encountered immediately notify the Engineer and an equitable adjustment to the contract price will be negotiated.

3.04 Backfilling.

A. Tamping Equipment. Except immediately next to the pipe, mechanical or air operated tamping equipment to be used. Hand equipment, such as T-bar, to be used near pipe if necessary. Care to be taken when compacting under, along side and immediately above pipe to prevent crushing, fracturing or shifting of the pipe. The Contractor is to note densities required for materials being backfilled and shall use appropriate approved equipment to obtain those densities.

Wheel rolling is not considered to be an adequate compaction technique to meet these Specifications and will not be allowed. Wheel rolling as a “proof roll” is acceptable.

B. Moisture Control. Generally maintain moisture of backfill material with ± 2% of optimum moisture content as determined by ASTM D698. Maintain closer tolerances as needed to obtain densities required.

C. Compaction. Maximum density (95%) based on ASTM D698 modified proctor.

1. Bedding Material, including material used for over-excavation of any kind: 95%

2. Select Material: 95%

3. Backfill beneath existing or proposed pavement, roadways, sidewalks, curbs, utility lines and other improvements or within 5' horizontally of such improvements: 95%

4. Backfill within public or designated right-of-way: 95% or as shown on the Drawings.

5. Backfill within undeveloped, green or undesignated area (lawn areas): 90%

D. Placing Backfill. The maximum loose lifts of backfill material to be as follows: use smaller lifts where necessary to obtain required densities:

1. Bedding and select material: 6" (or see Section 3.03A).

2. Backfill Material: 8” lifts provided compaction requirements met; where compaction density testing confirms compaction efforts by the Contractor meet specifications.

E. Backfilling Appurtenances. Backfilling to be done generally at the same time as adjacent pipelines. Backfilling procedure to conform to this section. Use special techniques or materials as shown on drawings.

F. Disposal of Excess Excavation. Contractor to dispose of excess excavation and demolished asphalt and concrete off site. Disposal in any case shall be the sole responsibility of the Contractor.

G. Maintenance of Backfill. Contractor to maintain all backfill in a satisfactory condition during the extent of the contract and warranty period. All surface deterioration determined to be the responsibility of the Contractor and all settlement shall be repaired at once by the Contractor upon notice by the Owner. All costs for repair and all liability as a result of surface deterioration or settlement shall be the responsibility of the Contractor. This includes restoration of paved surfaces.

3.05 Surface Restoration. All existing surface not identified for replacement improvements and site conditions disturbed or damaged during construction are to be restored as shown or indicated on the plans. Areas disturbed off the Town street shall be restored to original or better condition unless street is scheduled to be re-paved. All restoration costs are considered incidental to excavation and backfill.

Improvements. Replace, repair or reconstruct all improvements as required. Work will not be accepted until Engineer accepts restoration and all affected property owners. Improvements include, by example, other utilities, culverts, structures, curb and gutter, mailboxes, signs, sprinkler systems, fence, inlet structures and patching, etc..

Final Grading. The Contractor is to re-establish existing final grade or finish final grades as modified and shown on the Drawings. The Contractor is to backfill to proper subgrade elevation with backfill material to allow placement of surface improvements or excavated top soil and native materials.

Disturbed or damage lawn areas shall be repaired to equal or better condition than initially encountered.

Roadways and driveways. All roadways to be restored to original elevations with class 6 material. Driveways, if impacted, shall be replaced with the same material types as removed or damaged. Concrete driveways shall be replaced with a concrete minimum thickness of 5 inches.

## 4.00 QUALITY CONTROL - FIELD

4.01 Compaction. It should be fully understood that it will be the sole responsibility of the Contractor to achieve the specified densities for all embedment and backfill material placed. Contractor will be responsible for ensuring that correct methods are being used for the placement and compaction of said materials.

Contractor may, at his own expense, have an approved geotechnical engineer monitor the methods of backfill and compaction used to ensure that the desired densities are being obtained.

Inspection and testing will be performed under the direction of the Owner and as directed by the Engineer. Testing will be conducted as a quality control check to verify the Contractor's compliance with the standards indicated in the Specifications at the expense of the Owner.

4.02 Inspection and Testing. Inspection and testing are to be performed at the direction of the Engineer. Contractor to cooperate fully with all persons engaged in testing. Contractor to excavate as required to allow for testing. Contractor to backfill all test excavations in accordance with these Specifications.

4.03 Density Testing and Control (provided for reference, the municipality will perform density testing for quality assurance purposes. The contractor shall provide equipment and perform proof rolling with a loaded 2000-gallon water truck or approved equivalent).

A. Reference Standards. Density/moisture relationships to be developed for all soil types encountered according to ASTM D698 or AASHTO T99.

B. Field Testing. Testing for density during compaction operations to be done in accordance with ASTM D2922 using nuclear density methods.

C. Frequency of Testing. Minimum of one (1) test every 250' trench per lift or as directed by Engineer. Testing to be paid for by Owner.

D. Retesting. In the event of failure to meet compaction criteria, Contractor shall re-excavate and re-backfill at direction of Engineer. All retesting to be paid for by Contractor and to be performed by soils testing firm retained by the Owner.

4.04 Payment for Testing. Owner responsible for all costs of initial testing of backfill. Contractor to pay all costs of any retesting required. Contractor is responsible for proof rolling of subgrade and finished grade of trench.

## 5.00 MEASUREMENT AND BASIS OF PAYMENT

See section 01025 “Measurement and Payment”.

End of Section

## SECTION 02222

## STRUCTURAL AND BASE COURSE AGGREGATE

### 1.0 GENERAL

1.01 Scope. This work shall consist of furnishing and placing one or more courses of aggregate on the prepared surface in accordance with these Specifications in reasonably close conformity with the lines, grades and typical cross sections shown on the drawings or established by the Engineer in the field. All pulverized material must be equal to class 5 or 6 material as shown in the following table.

This is a general specification that will cover work for all municipalities where the addition of road base, full depth reclamation is performed, or structural fill is required. Not all portions of the work will have this requirement.

1.02 It is the intent of this project, to remove and replace the existing asphalt surface where identified, via Full Depth Reclamation techniques. The preferred method would be to grind/pulverize the asphalt section and a minimum of 6” of the existing base material. This material shall be pulverized to a gradation meeting a CDOT class 5 specifications. This material is intended to be used as new base for the new pavement.

For this project, base material is defined as imported class 5 or 6 aggregate base course and/or the pulverized asphalt surface recycled as base material (class 5 or 6 equivalent). Pulverized material shall be used first before importing other material.

Gunnison County and the Crested Butte South will provide the structural and base course prep work for paving within their municipality.

The Contractor will be responsible for all base course repairs needed within the Crested Butte South Metro District.

1.03 Reference Standards.

A. Colorado Department of Transportation "Standard Specifications for Road and Bridge Construction," latest edition.

1.04 Submittals.

A. Gradation of all imported materials.

### 2.00 MATERIALS

Aggregate used for pipeline bedding, base course and subbase course and specified by Class in other sections of this Specification shall conform to the gradation schedule shown below.

Pipe bedding shall be equal to a 2” minus well grade material similar to a CDOT class 4 or 5 or approved equal. Existing bedding or native material meeting this gradation will be acceptable.

CLASSIFICATION TABLE FOR AGGREGATE BASE COURSE*

| Sieve Designation | **Percentage by Weight Passing Square Mesh Sieves** | | | | | | |
|---|---|---|---|---|---|---|---|
| | LL not greater than 35 | | | LL not greater than 30 | | | |
| | Class 1 | Class 2 | Class 3 | Class 4 | Class 5 | Class 6 | Class 7 |
| 4 inch | ---- | 100 | ---- | ---- | ---- | ----- | ----- |
| 3 inch | ---- | 95-100 | ---- | ---- | ---- | ---- | ---- |
| 2½ inch | 100 | ---- | ---- | ---- | ---- | ---- | ---- |
| 2 inch | 95-100 | ---- | ---- | 100 | ---- | ---- | ---- |
| 1½ inch | ---- | ---- | ---- | 90-100 | 100 | ---- | ---- |
| 1 inch | --- | ---- | ---- | 95-100 | ---- | 100 | ---- |
| ¾ inch | ---- | ---- | ---- | 50-90 | ---- | 100 | ---- |
| No. 4 | 30-65 | ---- | ---- | 35-50 | 30-70 | 30-65 | ---- |
| No. 8 | ---- | ---- | ---- | ---- | ---- | 25-65 | 20-85 |
| No. 200 | 3-15 | 3-15 | 20 max. | 3-12 | 3-15 | 3-12 | 5-15 |

*Reproduced from Colorado Department of Transportation Standard Specifications for Road and Bridge Construction.

## 3.00 METHODS AND PROCEDURES

3.01 Placing. The base course material, at or near optimum moisture content (+/- 2% optimum moisture), shall be placed on the previously prepared subgrade at the locations and in the proper quantities to conform to the typical cross sections as shown on the Drawings and as directed by the Engineer. Placing and spreading shall be done by means of spreader machine, moving vehicle, motor grader or other approved equipment methods. The material shall be placed without segregation. Any segregated areas shall be removed and replaced with uniformly graded material at the Contractor's expense.

The base material may be placed in lifts of up to 8 inches, providing that after compaction, uniform density is obtained throughout the entire depth of the lift. If the required depth exceeds 8 inches, it shall be placed in two or more lifts of approximately equal thickness. If uniform density cannot be obtained by 8-inch lifts, the maximum lift shall not exceed 4 inches in final thickness.

3.02 Compacting. Rolling will be continuous until the base material has been compacted to not less than 95% of maximum density as determined by ASTM D698 or AASHTO T-99 (standard proctor). Water shall be uniformly applied as necessary during compaction to obtain optimum moisture content and to aid in consolidation. The surface of each layer shall be maintained during the compaction operations in such a manner that a uniform texture is produced and the aggregates are firmly keyed.

The finished base course surface (for roadways and concrete slabs) shall be smooth and free of ruts and irregularities and true to grade and crown as shown on the plans or as directed by the Engineer. The final surface shall be finished with a surface smoothness tolerance of ¼ inch, measured as vertical ordinate from the face to a ten-foot straight edge. The base course shall be maintained in this condition by watering, drying, rolling or blading as necessary, or as the Engineer may direct, until the surface material is placed.

3.03 Protection of Work.

A. Safety. All excavations shall be protected by barricades, lights, signs, etc. as required by governing federal, state and local safety codes and regulations.

B. Sheeting, shoring and bracing (where required for utility work or other deep excavations).

Except where banks are cut back on a stable slope, provide and maintain sheeting, shoring and bracing systems necessary to protect adjoining grades and structures from caving, sliding, erosion or other damage, and suitable forms of protection against bodily injury, all in accordance with applicable codes and governing authorities.

Remove sheeting and shoring systems as excavations are backfilled in a manner to protect the construction or other structures, utilities or property. Do not remove any sheeting after backfilling.

Sheeting and shoring systems shall be structurally designed and sufficiently braced to provide necessary restraining of retained backfill. Prior to installation of such systems, methods of installation and materials proposed shall be discussed with and approved by Engineer. All systems shall be in strict compliance with local, state and federal safety regulations. Contractor is solely liable for non-compliance.

C. Site Drainage. Excavation to be protected from surface water drainage at all times.

3.04 Construction in Streets. When construction operations are located within streets, make provisions at cross streets and walks for free passage of vehicles and pedestrians. Do not block streets or walks without prior approval of the Municipality.

3.05 Storm water Control. Contractor shall maintain facilities on site to prevent storm water from entering any excavated areas. Storm water shall be controlled to prevent excessive saturation or ponding within the work. If storm water enters work zones no further work shall be performed in this area until satisfactory conditions are established. All water removal shall be subject to approval by the Engineer

## 4.00 QUALITY CONTROL – FIELD

The Contractor is responsible for all quality control. The Town or City will provide geotechnical testing of all sub grades, base courses, structural fill and concrete (or flow fill). The contractor is responsible to provide all material prep and compactive effort required to achieve the required compaction densities.

The Contractor shall also proof roll final road grades with a loaded 2000 gallon water truck or equal.

Contractor is responsible to provide a proof roll with a loaded water truck (2000 gallon). The wheel path shall be within 2' of the edge of road or back of curb/gutter on each side and at least one pass down the middle of the street. The engineer shall be notified in advance to observe all proof roll tests. Subgrade or base course the moves or pumps under the wheel load shall be re-compacted or otherwise reworked by the contractor.

4.01 Inspection and Testing. Inspection and testing to be performed at the direction of the Engineer. Contractor to cooperate fully with all persons engaged in testing. Contractor to excavate as required to allow testing of areas that fail compaction testing or proof rolling; Contractor to backfill all test excavations in accordance to these Specifications.

4.02 Density Testing and Control. Density testing will be scheduled and paid for by the Town or City. The contractor will be responsible for costs associated with re-testing of failed areas.

A. Reference Standards. Density/moisture relationships to be developed for all soil types encountered according to ASTM D698 or AASHTO T-99.

B. Field Testing. Testing for density during compaction operations to be done in accordance with ASTM D2922 using nuclear density methods.

C. Frequency of Testing. Conduct a minimum of one test for each layer of specified depth of fill or backfill as follows:

| | |
|---|---|
| Roadways: | 150 LF per driving lane. |
| Curbs and Gutter: | For each 100 lineal feet or less C & G. |
| Pavement and Walks: | For each 500 square feet or less. |
| Utility Trenches: | For each 250 lineal feet or less of trench. |

The Contractor shall provide proof rolling of the sub-grade and final base course sections prior to paving or placing of the next layer. Proof rolling shall be with a loaded 2000 gallon water truck. One pass shall place the rear wheels within 2' of the edge of road or back of curb and gutter on each side. A third pass shall be approximately in the middle of the road with one wheel over the water line trench.

4.03 Payment for Testing. Owner is responsible for all costs of initial soils materials testing. Contractor to pay for all costs of any retesting required. Contractor shall be responsible for proof rolling sub grades and final road surface.

## 5.00 MEASUREMENT AND BASIS OF PAYMENT

See spec section 01025 "Measurement and Payment"

End of Section

**SECTION 02612**
**HOT BITUMINOUS PAVING**

## 1.0 DESCRIPTION

This work shall consist of providing an Asphalt Paving Mixture (APM) to be placed as shown on the plans, or as directed by the **OWNER**. The **CONTRACTOR** shall be responsible for Process Control (PC) of the APM; including the design, and control of the quality of the material incorporated into the project. The **OWNER** will be responsible for Owners Acceptance (OA); including testing, to assure the quality of the material incorporated into the project meet design parameters. The following specifications include general requirements applicable to all types of plant mixed asphalt pavements. The work shall meet the requirements within the contract documents and in conformity with the lines, grades, thickness, and design cross sections as shown on the plans or established by the **OWNER's** representative.

This specification is to maximize the service life of APM. It is also the intent of this document to provide construction requirements in accordance with these specifications to the standard of practice. This item shall include all labor, equipment, and materials to produce, place, and compact asphalt pavement.

### A. Definition of Terms

Wherever the following abbreviations are used in the specifications or other contract documents, the intent and meaning will be interpreted as shown below:

| | |
|---|---|
| AASHTO | American Association of State Highway & Transportation Officials |
| ASTM | American Society for Testing & Materials\ |
| APM | Asphalt Paving Mixture |
| RAP | Reclaimed Asphalt Pavement |
| SMA | Stone Matrix Asphalt |
| WMA | Workability Mixture Additive (formerly known as Warm Mix Asphalt) |

### B. Contractor Process Control

At least 10 calendar days prior to placing any mixture on the project, the **CONTRACTOR** shall submit a mix design for acceptance.

The **CONTRACTOR** shall assume full responsibility for controlling all operations and processes to meet the Specifications. The **CONTRACTOR** shall perform all tests necessary for process control purposes and maintain a log of all process control testing. Owners Acceptance (OA) and/or Process Control (PC) test results will be evaluated to determine acceptability.

Prior to use on the project the **CONTRACTOR** shall submit a quality control plan that addresses production, sampling, testing, qualifications of testing personnel, timing, and methods for making adjustments to meet the specifications. The **CONTRACTOR** will provide a process or schedule for making corrections for material that was placed but does not meet specifications as well as obtain a follow up sample immediately after corrective actions are taken to assess the adequacy of the corrections. In the event the follow-up process control sample also fails to meet Specification requirements; the **CONTRACTOR** shall cease production of the asphalt mixture until the problem is adequately resolved to the satisfaction of the **OWNER**.

## 1.2 MATERIALS

Asphalt mixtures may consist of aggregate, filler, anti-strip agent, Recycled Asphalt Pavement (RAP), Workability Mixture Additive (WMA) and asphalt binder.

### A. Aggregate

The Aggregate shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel. The material shall not contain clay balls, vegetable matter, rounded aggregate, or other deleterious substances, and shall meet the following requirements:

**TABLE 1.2A-1**
**Aggregate Properties**

| Aggregate Test Property | Coarse:<br>Retained on #4 | Fine:<br>Passing the #4 |
|---|---|---|
| Fine Aggregate Angularity, CP-L 5113<br>Method A or AASHTO T 304<br>(Does not apply to RAP aggregate) | | 45% Min |
| Two Fractured Faces, ASTM D 5821<br>SG Mixtures<br>Top and Middle Lifts<br>Bottom Lifts<br>SMA Mixtures | <br>90% Min.<br>80% Min.<br>70% Min.<br>100% required | |
| Flat and Elongated (Ratio 5:1) %,<br>AASHTO M 283 | 10% Max. | |
| Sand Equivalent. AASHTO-T 176 | | 45% Min. |
| Micro Deval (for combined samples)<br>AASHTO T 327 | 18% Max for design<br>20% Max. for production | |

## TABLE 1.2A-2
## Dense Graded Mixture Gradation
**(AASHTO T 11 & T 27)**

| | ST (3/8” nominal) | SX (1/2” nominal) | S (3/4” nominal) | SG (1” nominal) |
|---|---|---|---|---|
| | Leveling, Maintenance, Bike Path, Sidewalk | Top and Bottom Lifts, Patching | Lower Lifts | Lower Lifts |
| Sieve Size | | | | |
| 1.5” | | | | 100 |
| 1" | | | 100 | 90-100 |
| 3/4" | | 100 | 90-100 | |
| 1/2" | 100 | 90-100 | | |
| 3/8" | 90-100 | | | |
| #4 | | | | |
| #8 | 28-58 | 28-58 | 23-49 | 19-45 |
| #16 | | | | |
| #30 | | | | |
| #50 | | | | |
| #200* | 2.0-10.0 | 2.0-8.0 | 2.0-7.0 | 1.0-7.0 |

*Shall include 1% by total weight if lime is used as the anti-strip agent.

## TABLE 1.2A-3
## SMA Mixture Gradation
**(AASHTO T 11 & T 27)**

| Sieve Size | ½” | ¾” |
|---|---|---|
| (1") | | 100 |
| (3/4") | 100 | 90-100 |
| (1/2") | 90-100 | 50-88 |
| (3/8") | 50-80 | 25-60 |
| (#4) | 20-35 | 20-28 |
| (#8) | 16-24 | 16-24 |
| (#16) | | |
| (#30) | 12-18 | 12-18 |
| (#50) | | |
| (#100) | | |
| (#200) | 8-11 | 8-11 |

## B. Reclaimed Asphalt Pavement (RAP)

Allowable percentages of RAP in APM are shown in Table 1.2E-2.

**TABLE 1.2E-2**
**RAP Allowed in APM Mixtures**

| Mix Grading | Max % RAP allowed |
|---|---|
| ST (3/8”) | 25% |
| SX (1/2”) | 25% |
| S (3/4”) | 25% |
| SG (1”) | 35% |
| SMA (1/2” & 3/4”) | Not Allowed |

**Quality of RAP**

RAP may be used where allowed and shall be of uniform quality and gradation with a maximum size no greater than the nominal aggregate size of the mix. RAP shall not contain clay balls, vegetable matter, or other deleterious substances.

Asphalt mixtures containing RAP shall meet the same gradation and physical requirements as in Table 1.2A-1.

Verification testing for asphalt content and gradation will be performed on RAP at the frequencies listed on Table 1.2B-1, below. The **CONTRACTOR** shall provide testing results on RAP mixtures daily for properties listed in this specification.

The aggregate obtained from the processed RAP shall be based on the required gradation limits for the mixture being used. The aggregate and binder obtained from the processed RAP shall meet the tolerances provided in Table 1.2B-1.

**Table 1.2B-1**
**RAP Binder & Aggregate Uniformity Tolerances**

| Element | Standard Deviation |
|---|---|
| Binder Content | 0.5 |
| % Passing ¾” | 4.0 |
| % Passing ½” | 4.0 |
| % Passing 3/8” | 4.0 |
| %Passing #4 | 4.0 |
| % Passing #8 | 4.0 |
| % Passing #30 | 3.0 |
| % Passing #200 | 1.5 |

**Process Control (PC) Plan for RAP**

A PC plan detailing how the RAP will be processed and controlled shall be developed and followed by the **ASPHALT PRODUCER/ CONTRACTOR** and shall address the following:

A plan that explains the **CONTRACTOR'S** processing techniques for crushing, screening, rejecting, and stockpile operation.

RAP shall be tested as shown in Table 1.2B-2.

**Table 1.2B-2**
**Test Frequency of Processed RAP**

| Test | Minimum testing frequency (minimum 3 tests) |
|---|---|
| Asphalt Binder Content (AASHTO T-164) | 1/1,000 tons |
| Gradation (AASHTO T-30) | 1/1,000 tons |

Process control charts shall be maintained for binder content and each screen when RAP material is added to the stockpile. Separate control charts for each RAP stockpile shall be maintained. These charts shall be displayed and shall be provided upon request.

## C. WMA Technology:

The **CONTRACTOR** may choose to use a WMA Technology that is included on the CDOT approved products list (https://www.codot.gov/business/apl/asphalt-warm-mix.html).

WMA technologies (additive or foaming) used shall be identified on the mix design submitted and approved by the **OWNER** for use on a project.

If a WMA technology is used, the discharge temperatures may be lowered during production at the discretion of the **CONTRACTOR** provided all specifications are achieved.

## D. Mineral Filler

Mineral filler for use with Stone Matrix Asphalt (SMA) pavement may consist of limestone dust or any other material filler that will meet the requirements of this subsection and have a maximum Plasticity Index (AASHTO T 90) of less than or equal to 4.0 %.

The **CONTRACTOR** shall submit hydrometer analysis (AASHTO T 88) for the gradation of mineral filler used in the SMA mixture.

## E. Performance Graded Asphalt Binders

The **CONTRACTOR** shall provide to the **OWNER** acceptable 'Certifications of Compliance' of each applicable asphalt binder grade from the supplier. Should testing or certificate show nonconformance with the specifications, the asphalt binder may be rejected. When production begins, the **CONTRACTOR** shall, upon request, provide to the **OWNER** a one quart can of each specified asphalt binder for analysis. Additionally, the **CONTRACTOR** shall provide the refinery test results that pertain to the asphalt binders used during production.

## F. Asphalt Binder

Asphalt binder shall meet the requirements of the Performance-Graded Binders (PG) as presented in Table 1.2E-1 and consult www.LTTPbind.com when special circumstances arise.

**TABLE 1.2E-1**
**Properties of Performance Graded Binders**

| Property of Binder Grade | PG 58-28 | PG 64-22 | PG 76-28 |
|---|---|---|---|
| Flash Point Temperature, ºC, AASHTO T 48 | 230 Min. | 230 Min. | 230 Min. |
| Viscosity at 135 ºC, Pas, ASTM D 4402 | 3 Max. | 3 Max. | 3 Max. |
| Dynamic Shear, Temperature ºC, where C*/Sin δ @ 10 rad/sec. ≥ 1.00 Kpa, AASHTO TP 5 | 58 º C | 64 º C | 76 º C |
| ***Rolling Thin Film Oven Residue Properties, AASHTO T 240*** | | | |
| Mass Loss, %, AASHTO T 240 | 1.00 Max. | 1.00 Max. | 1.00 Max. |
| Dynamic Shear, Temperature ºC, where G*/Sin δ @ 10 rad/sec. ≥ 2.20 Kpa, AASHTO TP 5 | 58 º C | 64 º C | 76 º C |
| Elastic Recovery1, 25°C, % Min. | N/A | N/A | 50 Min. |
| ***Pressure Aging Vessel Residue Properties, Aging Temperature 100 ºC AASHTO R 28*** | | | |
| Dynamic Shear, Temperature ºC, where G*/Sin δ @ 10 rad/sec. ≤ 5,000 Kpa, AASHTO TP 5 | 19 º C | 25 º C | 28 º C |
| Creep Stiffness, @ 60 sec. Test Temperature in ºC, AASHTO TP 1 | -18 º C | -12 º C | -18 º C |
| S, Mpa, AASHTO TP 1 | 300 Max. | 300 Max. | 300 Max. |
| m-value, AASHTO TP 1 | 0.300 Min. | 0.300 Min. | 0.300 Min. |

## G. Anti-Strip Additives

Anti-Strip shall be added into the APM. Anti-Strip agents may be liquids (added to the binder), lime (added to the aggregates) or other products, and shall be submitted for approval by the **OWNER**.

The minimum value for Tensile Strength Ratio (TSR) shall be 80% for the mix design and 70% during production.

**Liquid Anti-Strip**

There are various types of liquid Anti-Strips. Amine and Organo-silane type liquid Anti-Strip additives are physically mixed with the asphalt binder.

Liquid Anti-Strip agents shall be added per the manufactures recommendations. Typical product dosages are provided in Table 1.2F-1.

**TABLE 1.2F-1**
**Liquid Anti-Strip Dosage Rates**

| Type | Typical Dosage Rate |
|---|---|
| Amine | 0.4% to 0.8% |
| Organo-silane | 0.05% to 0.15% |

WMA chemical products which display Anti-Stripping characteristics will be classified as a liquid Anti-Strip additive.

When a liquid Anti-Strip additive is used, the **CONTRACTOR** shall include the following information with the mix design submission:

- Information on the type of liquid Anti-Strip additive to be supplied, including product name, product manufacturer/supplier
- Additive rate
- TSR values for the treated mixes
- The proposed method for incorporating the additive into the plant produced mix.

**Hydrated Lime**

The hydrated lime for APM shall conform to the requirements of AASHTO M 303, Type I. In addition, the particle size requirements shall conform to AASHTO M 303 when tested in accordance with CP-L 4209 Physical Testing of Quicklime, Hydrated Lime, and Limestone. Hydrated Lime shall be added at the rate of 1% by dry weight of the aggregate and shall be included in the amount of material passing the No. 200 sieve.

## 1.3 MIX DESIGN AND PRODUCTION REQUIREMENTS

There shall be no substitutions of materials allowed during production. All substitutions will require checkpoint verification. If the checkpoint differs from the Job Mix Formula (JMF), a new mix design will be required. Upon request of the **OWNER**, the binder grade may be changed by one available binder grade level without requiring a new mix design.

The **OWNER** shall indicate on “Mix Design Requirements” Form 20, the criteria concerning mix design method, traffic level, binder type, mixture grading, and percent of RAP allowed.

Grading SG (1-inch nominal aggregate) shall only be designed using the 150mm molds. Hveem Stability is not required for Grading SG mixtures. Lottman test is required for Grading S or SX in-lieu of Lottman for Grading SG. Grading ST, SX, and S shall be designed using 100mm molds.

## A. Mixture Design Method

A Job Mix Formula (JMF) design shall be submitted for each mixture required, at least 10 calendar days prior to construction, for review by the **OWNER.** The JMF design shall be determined using AASHTO T-312 for the Method of Mixture Design.

Mixture design and field control testing of dense graded asphalt mixes shall meet the requirements of Table 1.3A-1. For mixes requiring a design gyration of 100 (ESALs greater than 3 million) the Project Special Conditions should be used. This gyration is not recommended for the majority of roads within MGPEC agencies.

Mixture design and field control testing of SMA shall meet the requirements of Table 1.3A-2.

**TABLE 1.3A-1**
**Mixture Properties for Dense Graded Asphalt Mixtures**

| Property | Traffic Level (ESALs) | |
|---|---|---|
| | <100,000 | ≥100,000 to 3 Million |
| Design gyrations, $N_{design}$ | 50 | 75 |
| Air Voids ($V_a$) % at $N_{design}$ (AASHTO T-132) | 3.0 – 4.0 | 3.0 – 4.0 |
| Hveem Stability (AASHTO T-246 )<br>(Grading ST, SX & S only) | 28 Min. | 28 Min. |
| Voids Filled with Asphalt ($V_a$), MS-2 | 70-80 | 65-80 |
| Accelerated Moisture Susceptibility, tensile strength ratio, (Lottman) (AASHTO T-283 Method B)(for S,SX,SG mixes) | 80 Min. | 80 Min. |
| Dry Tensile Strength, psi (AASHTO T-283) | 30 Min. | 30 Min. |
| Voids in Mineral Aggregates (VMA) % (AASHTO PP-19) | Table 20.3A-3 | |

**Table 1.3A-2**
**Mixture Properties for SMA**

| Property | Test Method | Value |
|---|---|---|
| Lab compaction (Gyrations) $N_{Design}$ | AASHTO T-312 | 75 |
| Air Voids ($V_a$ ) % at $N_{Design}$ | AASHTO T-312 | 3.0 – 4.0 |
| Accelerated Moisture Susceptibility, tensile strength Ratio, (Lottman) | AASHTO T-283, Method B | 80 Min. |
| Dry Split Tensile Strength, psi | ASHTO T-283, Method B | 30 Min. |
| Grade of Asphalt Binder | N/A | PG 76-28 |
| Voids in the Mineral Aggregate (VMA) %, minimum | AASHTO PP19 | 17 |
| Drain Down at Production Temperature | AASHTO T-305 | 0.3 Max. |

**TABLE 1.3A-3**
**Minimum Voids in Mineral Aggregate (VMA)**
**Dense Graded & SMA mixes**

| Nominal Maximum Particle Size | Minimum VMA (%) | | |
|---|---|---|---|
| | 3.0% $V_a$ | 3.5% $V_a$ | 4.0% $V_a$ |
| 3/8" (ST) | 15.5 | 15.6 | 15.7 |
| ½"(SX) | 14.5 | 14.6 | 14.7 |
| ¾" (S) | 13.5 | 13.6 | 13.7 |
| 1" (SG) | 12.5 | 12.6 | 12.7 |
| SMA - ½" | 17.0 | 17.0 | 17.0 |
| SMA - ¾" | 17.0 | 17.0 | 17.0 |

## B. Mixture Design Submittals

The **CONTRACTOR** shall submit all mix designs, Certificates of Compliance, and laboratory data to the **OWNER** for approval at least 10 calendar days before construction is to begin.

Designs shall be developed and performed in a materials laboratory that meets the requirements set forth by AASHTO Materials Reference Laboratory (AMRL) for all testing procedures. , The design shall be stamped and signed by a Professional Engineer licensed in the State of Colorado. In addition, the **CONTRACTOR** shall submit, as part of the mixture design, laboratory data documents to verify the following:

- Gradation, specific gravity, source and description of individual aggregates and the final blend.
- Aggregate physical properties.
- Source and Grade of the Performance Graded Binder.
- Proposed Design Job Mix: aggregate and additive blending, final gradation, optimum binder content.
- Mixing and compaction temperatures used.
- Mixture properties shall be determined with a minimum of four binder contents.

The **OWNER** reserves the right to verify the asphalt supplier's mix design for each APM design utilizing materials produced and stockpiled. The asphalt supplier shall provide, at no cost, a sufficient quantity of each aggregate, mineral filler, RAP, and additive for the required laboratory tests, as well as all Certificates of Conformance/ Compliance at any time on any material used. The Asphalt Supplier shall provide copies of quality control testing results during the production of APM used within three business day from the sampling date.

## C. Change in Source or Grade

Should a change in the source of any material used in the production of APM (aggregate, mineral filler, lime, or performance graded asphalt binder) occur, a one point verification test (at optimum binder content) of the mix must be performed to verify that the applicable criteria shown on Table 1.3A-1 (dense graded APM), Table 1.3A-2 (SMA), and Table 1.3A-3 (VMA), is still met. If this testing shows noncompliance, the **CONTRACTOR** shall establish a new job mix design and obtain approval by the **OWNER** before the new APM is used.

### D. Mix Production Verification

Production verification shall occur prior to the start of the project. Volumetric properties of the mix shall be verified by LabCAT Level C certified Technicians. If the mix was produced for another project within the last 90 days, data from that project can be submitted for verification. Volumetric properties for mix verification testing shall be within the tolerances in Table 1.12-1. The mix verification test reports shall be submitted to the **OWNER** prior to mix placement.

Verification testing for binder content, gradation and physical properties shall be performed at the frequencies listed in Table 1.14-1.

### E. Pre-Paving Meeting

**The OWNER** may require a pre-paving meeting of all parties that are directly involved in the project. Traffic control, transport, sequence of paving and construction plans may be reviewed and discussed.

## 1.4 PRODUCTION

### A. Preparation of Aggregates

Heating and drying of the aggregates shall be accomplished without damaging the aggregate. An Anti-Strip additive shall be added to achieve uniform coating of the aggregate, in accordance with Section 20.2F Anti-Strip Additives.

### B. Mixing

The dried aggregates and asphalt binder shall be combined in the mixer in the quantities required to meet the design job mix formula. The materials shall be mixed until the aggregate is uniformly coated, and the asphalt binder is uniformly distributed throughout the aggregate. Baghouse fines may be fed back to the mixing plant in a continuous manner to maintain uniformity in the mixture at the discretion of the producer.

Discharge temperatures are shown in Table 1.4-1.

**TABLE 1.4-1**
**Mixture Discharge Temperatures**

| Binder Grade | Minimum Discharge Temperature | Maximum Discharge Temperature |
|---|---|---|
| PG 58-28 | 275º F | 305º F |
| PG 64-22 | 290º F | 320º F |
| PG 76-28 | 320º F | 330º F |
| Workability Mixture Additive (WMA) | If a WMA technology (additive or foaming) is used, the discharge temperatures may be lowered during production at the discretion of the **CONTRACTOR** provided all specifications are achieved. | |

To protect the properties of the binder, APM shall be produced at the lowest temperature within the specified range that produces a workable mix and provides for uniform coating of aggregates, and that allows the **CONTRACTOR** to achieve the required compaction.

### C. Transportation

Colorado Statutes require that each truck shall be covered. This will also help protect the mix during transport from contamination and weathering. The **OWNER** may reject any uncovered APM which demonstrates it has been impacted by contamination and/or weather.

## 1.5 TACK COAT

Prior to placement of APM, a tack coat shall be applied to all existing concrete and asphalt surfaces.

The tack coat shall meet the specification for emulsified asphalt, consisting of CSS-1h or SS-1h and conform to AASHTO M208 or M140.

The tack coat shall be applied at a rate of 0.1 to 0.3 gallons per square yard. The surface receiving the tack coat shall be dry and clean, and dust, debris, and foreign matter shall be removed. Tack coat shall be applied uniformly. The **CONTRACTOR** shall allow the tack coat to cure (dehydrate) prior to the placement of APM. If the tack becomes contaminated during construction, it shall be cleaned, and if necessary, additional tack coat shall be reapplied and allowed to cure before paving resumes.

**TABLE 1.5-1**
**Tack Coat Application Rates**

| Pavement Condition | Application Rate (gal/yd$^2$) | | |
|---|---|---|---|
| | Residual | Undiluted | Diluted (1:1) |
| New asphalt | 0.03 - 0.04 | 0.05 – 0.07 | 0.10 – 0.13 |
| Oxidized asphalt | 0.04 – 0.06 | 0.07 – 0.10 | 0.13 – 0.20 |
| Milled Surface (asphalt) | 0.06 – 0.08 | 0.10 – 0.13 | 0.20 – 0.30 |
| Milled Surface (PCC) | 0.06 – 0.08 | 0.10 – 0.13 | 0.20 – 0.30 |
| Portland Cement Concrete | 0.04 – 0.06 | 0.07 – 0.10 | 0.13 – 0.20 |

## 1.6 EQUIPMENT

### A. Transport Equipment

Trucks used for transporting APM shall be free of debris, and should be treated with approved release agents. Petroleum distillates such as kerosene or fuel oil will not be permitted as a release agent. The **OWNER** may reject any APM which demonstrates it has been contaminated from a petroleum distillate release agent.

### B. Material Transfer

Placement of SMA shall require the use of a Material Transfer Vehicle (MTV) or Material Transfer Device (MTD). The MTV shall be a self-propelled unit with on board storage of material. An MTD is a non-self-propelled unit. Both MTV and MTD are capable of receiving material from trucks or from the ground, transferring the material from the unit to a paver hopper insert via a conveyor system.

### C. APM Pavers

Self-propelled pavers shall be capable of placing the APM to the desired width, thickness and a satisfactory mat texture.

Pavers shall be equipped with automatic screed controls, the sensors may be contact or non-contact type devices. The controls shall be capable of maintaining the screed at the specified transverse slope within ±0.1%.

## 1.7 PLACEMENT

APM shall be placed on properly constructed surfaces that are free from debris, frost, snow, or ice. APM shall be placed in accordance with the temperature limitations of Table 1.7-1. In-place density for APM shall be 94% of maximum theoretical specific gravity (Rice - AASHTO T 209). The allowable variance shall be ± 2%. Test results shall be reported to the nearest whole number.

### A. Temperature

Surface temperatures shall be used to determine placement of APM. APM produced with documented WMA will be allowed a reduction in minimum surface temperatures for placement as provided in Table 1.7A-1. Ambient temperatures and other weather conditions shall be considered prior to placement.

**TABLE 1.7A-1**
**Minimum Surface Temperatures for placement of APM**

| Compacted Layer Thickness (in.) | Minimum Surface Temperature (ºF) | | | |
|---|---|---|---|---|
| | Top Layer | | Layers Below the Top Layer | |
| Product | APM | with WMA | APM | with WMA |
| <1½ | 60 | 50 | 50 | 40 |
| 1½ - <3 | 50 | 45 | 40 | 35 |
| 3 or more | 45 | 40 | 35 | 35 |

If the **CONTRACTOR** modifies the placement and compaction processes when ambient temperatures are below minimum surface temperatures in Table 1.7A-1, they shall demonstrate to the **OWNER** the required in-place density has been achieved. APM cooling software such as PaveCool, or MultiCool can be used to determine placement and compaction times available.

### B. SMA Placement

The **CONTRACTOR** shall establish and document a roller pattern for the SMA being placed. The roller pattern shall include, but is not limited to the following:

- Number, size, and type of rollers
- Amplitude, frequency, and speed of rollers
- Temperature of mixture being compacted during each process (break down, intermediate and finish)
- Number of roller passes for each phase

The in-place density shall be determined during placement of the first 1,000 feet with a minimum of 95% of Theoretical Maximum Density (Rice). The allowable variance shall be ± 2%. Test results shall be reported to the nearest whole number.

SMA mixture shall be placed with the assistance of a MTV or MTD. The **CONTRACTOR** should minimize flushing and drain down during the transport and placement of SMA. If more than 50 square feet of flushed area is observed, the **CONTRACTOR** shall provide a remedy to address the flushing and/or drain down.

In place density may be determined by nuclear gauge measurements in accordance with ASTM D 2950 and AASHTO T 230, or based on cores in accordance with AASHTO T 166, Method B. When cores are used, the **CONTRACTOR** shall provide all labor and equipment for the coring and repair of the holes.

When the material being placed is on a structure (bridge deck), nuclear gauge measurements shall be used.

### C. WMA Technology

WMA technologies (additive or foaming) may be used as a compaction aid and may allow for workability of the APM at lower temperatures.

The addition of WMA additives during production, including foaming, shall be controlled by a calibrated metering system interlocked with the plant's controls per the manufacturers' recommendation.

Additives may be added at the asphalt terminal at the dosage rate recommended by the WMA technology provider. The dosage rate and additive name shall be printed on the Bill of Lading for the asphalt binder.

The foaming process mixes water and binder to create microscopic steam bubbles. Typical water injection rate is ≤ 2% of binder flow rate or per manufacturers' recommendation.

## 1.8 LONGITUDINAL JOINTS

The **CONTRACTOR** shall submit a joint plan and pavement marking plan showing the location of and the methods to establish the paving control lines. The plan shall be approved by the **OWNER**. The **CONTRACTOR** shall use a method to delineate longitudinal joints during paving.

Longitudinal joints in all pavement layers shall offset the joint in the layer immediately below by a minimum of six inches. The joint in any pavement layer shall not fall in or between wheel paths. Joints in the top layer of new pavement shall be located on lane lines unless otherwise shown on the plans. Longitudinal joints shall be minimized with wide paving pulls. Joints shall be parallel to the flow of traffic and shall not cross any centerline, lane line, or edge line.

All paving shall be placed parallel to the roadway centerline and as straight as possible**.** All joints shall receive a coat of tack prior to placement of adjacent paving.

## 1.9 TRANSVERSE JOINTS

The **CONTRACTOR** shall submit a joint plan. The plan shall be approved by the **OWNER**. The **CONTRACTOR** shall use an approved plan to delineate transverse joints during paving. Transverse joints shall be formed by cutting back on the previous run to expose the full depth of the course. Tack coat material shall be applied to contact surfaces of all joints before additional mixture is placed against the previously compacted material.

The surface tolerance at the transverse joint shall be verified by the **CONTRACTOR** with a 10 foot straight edge. If the surface tolerance exceeds 3/16" across the joint, measured in at least three locations, the **CONTRACTOR** shall make corrections to the joint before proceeding.

## 1.10 SEGREGATION

Visually segregated areas shall be corrected before the initial compaction process is applied. Segregated areas may be determined visually or by other acceptable means. The **CONTRACTOR** shall correct segregated areas to the satisfaction of the **OWNER**.

## 1.11 COMPACTION

Equipment used for compaction of the APM will be at the discretion of the **CONTRACTOR**. The number, weight, and type of rollers furnished shall be sufficient to obtain the required density and surface texture.

When the mixture contains unmodified asphalt binder (PG 58-28 or PG 64-22), and the surface temperature falls below 180°F, further compactive effort shall not be applied unless the **CONTRACTOR** can demonstrate that there is no damage to the finished mat.

If the mixture contains modified asphalt binder (PG 76-28) and the surface temperature falls below 230°F, further compactive effort shall not be applied unless the **CONTRACTOR** can demonstrate that there is no damage to the finished mat.

Use of rollers with the vibrator on will not be permitted on bridge decks covered with waterproofing membrane.

In-place density for APM shall be 94% of maximum theoretical specific gravity (Rice - AASHTO T 209). The allowable variance shall be ± 2%. Test results shall be reported to the nearest whole number. Rice values will be based on a three production day's average. The **CONTRACTOR** shall provide the producer's Rice value, which shall be used for production until the actual day's Rice value is determined by the testing firm of record for the project.

In place density for SMA shall be determined during placement of the first 1,000 feet with a minimum of 95% of theoretical maximum specific gravity Rice - AASHTO T 209). The allowable variance shall be ± 2%. Test results shall be reported to the nearest whole number.

All joints shall be compacted to 92% of Rice, taken six inches offset from the joint, at a minimum of one every 1000 linear feet or fraction thereof. The allowable variance shall be ±2%. Test results shall be reported to the nearest whole number.

Cores may be used to verify compaction results. The **CONTRACTOR** shall core the pavement, as required by the **OWNER;** in accordance with AASHTO T 230, Method B, or for field calibration of nuclear density equipment in accordance with the ASTM D 2950. At a minimum, cores for nuclear density equipment correlation shall be taken at the beginning of placement of each pavement layer or change of mixture materials or gradation.

Along forms, curbs, headers, walls, and all other places not accessible to the rollers, the mixture shall meet all project compaction specifications. Any mixture that is defective, shall be corrected to meet the project specifications at the expense of the **CONTRACTOR**.

## 1.12 PRODUCTION TOLERANCES

### A. Wearing Course

Surface variation shall not exceed 3/16 inch in 10 feet for full lane width paving. For patching, the variation shall not exceed 3/8 inch in 10 feet. The final pavement surface shall not vary from the specified cross section by more than one inch at any point. Transverse measurements for variations shall exclude breaks in the crown sections. Corrections shall be made at the **CONTRACTOR's** expense.

The final surface pavement adjacent to curb and gutter shall be finished from 1/8-inch to 3/8-inches above the lip for catch curb and shall not extend above the lip for spill curb.

The **CONTRACTOR** shall adjust all manholes, valve boxes, and survey range boxes 1/8 to 1/2- inch below final grade and adjusted to match the slope of the roadway. Valve boxes and manholes are to be maintained fully accessible at all times for emergency and maintenance operations. The cost of adjusting valve boxes, manholes, and survey range boxes shall be included in the work, unless otherwise specified. The **CONTRACTOR** shall be responsible for any cost incurred by the **OWNER** to provide access to the covered manholes or valve boxes. Final adjustment of all utility access points shall be completed within seven days of from the time the APM was placed.

### B. Job Mix Formula

Tolerances for gradation are presented in Table 1.2A-2 and Table 1.2A-3. APM volumetric tolerances are presented in Table 1.12-1.

**TABLE 1.12-1**
**Production Mix Tolerances**

| Property | Tolerance |
|---|---|
| Air Voids | ± 1.2% |
| VMA | ± 1.2% |
| Asphalt Binder Content | ± 0.3% |

## 1.13 CONFORMITY WITH PLANS AND SPECIFICATIONS

### A. Materials

Materials shall be sampled by and tested by a LabCAT certified technician(s) in an AMRL accredited testing laboratory in accordance with Section 1.14.

Test results that have sampling or testing errors shall not be used.

### B. Pavement Thickness

A minimum of 90% of all the pavement thickness cores must equal or exceed the required thickness shown on plans or pavement design report.

If the pavement thickness deficiency is greater than 0.25 inches for individual cores, two additional cores will be taken by the **CONTRACTOR** 50 feet before and after each deficient core. The three core results will be averaged to determine if the results meet the required thickness.

When individual core thickness deviates from the target thickness by more than 0.25 inch but not more than 0.50 inch, remedial action will be required. The **CONTRACTOR** shall present proposed remedial measures for consideration by the **OWNER**. The **OWNER** will review the proposal within 10 working days to accept or modify the remedial measures. The remedial measures will be performed by the **CONTRACTOR** at no additional cost to the **OWNER**.

When individual core thickness deviates from the target thickness by more than 0.50 inch, corrective action shall be required. The deficient area will overlaid with no less than one inch thick lift to meet the design thickness. The **CONTRACTOR** will mill to match existing facilities prior to corrective overlay. The mixture proposed shall be approved by the **OWNER**. Corrective action will be performed by the **CONTRACTOR** within 15 working days.

If the **OWNER** does not want the top lift cored, they may require the **CONTRACTOR** to use non-destructive survey techniques to determine APM thickness.

### C. Smoothness

Smoothness criteria is typically not applicable for local OWNER roads. Impacts of curb and gutter, utilities, cross streets, and intersections will cause deviation from plane making smoothness measurements inaccurate.

However, if the **OWNER** elects to set smoothness criteria it should only be established for roadways with speed limits 35 mph or greater. When specified, the **CONTRACTOR** shall profile the roadway prior to the work taking place and immediately after the work has ended. The **CONTRACTOR** will be required to maintain or improve the ride quality. If the ride quality decreases, the **CONTRACTOR** will be required to restore the ride to the levels it was prior to the work taking place.

### D. Acceptance

If the **CONTRACTOR** does not meet the project specifications, but acceptable work has been produced, the **OWNER** shall determine the extent of the work to be accepted. If the **OWNER** determines the work is not acceptable, the **CONTRACTOR** shall correct the work, as approved by the **OWNER**, at the expense of the **CONTRACTOR**.

## 1.14 TESTING AND INSPECTION

If any materials furnished or work performed fails to meet the specification requirements, such deficiencies shall be documented and reported to the **OWNER**. Field reports shall be delivered to the **OWNER** within three business days. Test results that cannot be completed within three days shall be provided to the **OWNER** no later than one week after the sample was obtained.

Testing of APM shall be performed in accordance with Table 1.14-1. Laboratories shall be accredited by AASHTO Materials Reference Laboratory (AMRL) for the tests being performed. Technicians obtaining samples and conducting compaction tests must have a LabCAT Level A certification. Technicians conducting tests of asphalt content and gradation must have a LabCAT Level B certification. Technicians performing volumetric testing must have a LabCAT Level C certification. Inspectors on APM projects shall be LabCAT Inspector Certified (Level I).

**TABLE 1.14-1**
**Minimum Materials Sampling and Testing for Process Control and Owners Acceptance**

| Test | Standard | Minimum Frequency |
|---|---|---|
| Sampling | AASHTO T168, ASTM D 979 and ASTM D3665 | 1/1000 tons or fraction thereof (not less than one test per day) |
| Density | AASHTO T 166, T 238, T 230 | One test for each 250 lineal feet per lane |
| Thickness (Core) | ASTM D3549 | One test for each 1000 lineal feet per lane |
| Air Voids & VMA | AASHTO T 166 & AASHTO PP 19 | 1/1000 tons or fraction thereof (not less than one test per day) |
| Gradation | AASHTO T 27, T 11 | 1/1000 tons or fraction thereof (not less than one test per day) |
| Hveem/Marshall Stability As Applicable | AASHTO T 245, AASHTO T-246 | 1/1000 tons or fraction thereof (not less than one test per day) |
| Binder Content | AASHTO T 164 or other methods agreed upon between OWNER and Contractor | 1/1000 tons or fraction thereof (not less than one test per day) |
| Maximum Theoretical Specific Gravity (Rice) | AASHTO T 209 | 1/1000 tons or fraction thereof (not less than one test per day) |
| Lottman Stripping, TSR & Dry Density | AASHTO T 283 | One per project per mix used. |

## 1.15 PAYMENT

Accepted quantities of APM shall be paid at the contract price when complete and in place according to the Plans and Specifications. The contract price per contract and shall include labor, materials, and equipment necessary to complete the work.

**TABLE 1.15-1**
**Payment**

| Description | Payment |
|---|---|
| Hot Bituminous Pavement | $ / SY Placed |
| | |

METROPOLITAN GOVERNMENT PAVEMENT ENGINEERS COUNCIL
MGPEC

# Form 20

## Mix Design Requirements V. 9/2017

**OWNER:**_____**Date:**_____

**Project:**_____

**Details:**_____**APM (tons):**_____
(To / From, Length)

**Classification** ☐ Arterial ☐ Collector ☐ Local ☐ Other _____

**APM Placement** ☐ Wearing course ☐ Intermediate lift ☐ Bottom lift ☐ Patching

## ASPHALT MIX DESIGN

**Design / Traffic**
☐ $N_{design}$ = 50 gyrations <100,000 ESALs
☐ $N_{design}$ = 75 gyrations ≥100,000 to <3 million ESALs

**Binder** ☐ PG 58-28 ☐ PG 64-22 ☐ PG 76-28 (Top lift only)

| **Grading** | | Minimum Lift (3x) | Maximum Lift (5x) |
|---|---|---|---|
| ☐ ST | (3/8") | 1 1/8" | 2 ¼" |
| ☐ SX | (½") | 1 ½" | 2 ½" |
| ☐ S | (¾") | 2" | 4 ¼" |
| ☐ SG | (1") | 3" | 5 " |
| ☐ SMA | (½") | 1 ½" | 2 ½" |
| ☐ SMA | (¾") | 3" | 4 ¼" |

**Anti – Strip** ☐ Liquid ☐ Lime

### *BEST PRACTICES* to include in Mix Design

**RAP** ☐ 25% ☐ 35% (Grading SG only)

**WMA** ☐ Additive ☐ Foaming

### OWNER EXCEPTIONS

☐ **No RAP in wearing course**
☐ **No RAP** allowed in mixture

☐ **No WMA** allowed in mix

**SECTION 02626**
**CONCRETE CURB, GUTTER, VALLEYPAN AND DRIVEWAYS**

1.00 GENERAL

1.01 Scope. This Work shall include furnishing all materials, labor, equipment and miscellaneous items necessary for the construction of concrete curb, gutter, accessible ramps, drainage pans or any combination thereof, all in accordance with these Specifications and in close conformity with the lines, grades, and typical sections as shown on the Construction Drawings or established in the field. This pertains to work for the City of Gunnison only.

1.02 Related Work Specified Elsewhere.

Section 02222 - Structural and Base Course Aggregate
Section 03300 – Cast in Place Concrete

1.03 Submittals required

Curb inlet grates and pre-cast boxes.

2.00 MATERIALS

The materials shall conform to the requirements specified in the following:

Section 02222 - Structural and Base Course Aggregate
Section 03300 – Cast in Place Concrete

2.01 Structural Concrete. 28-day compressive strength of 4,000 psi. Provide submittal showing mix design and recent compressive strength tests on submitted mix.

2.02 Fibermesh. Fibermesh additive at the rate of 1½ pounds/cubic yard shall be used with all concrete. Use shall be in accordance with manufacturer's recommendations.

2.03 Joint Sealer. One-part polyurethane elastomeric sealant/adhesive suitable for horizontal or vertical joints. Sikaflex-1a or approved equal.

3.00 METHODS AND PROCEDURES

3.01 Excavation. Excavation shall be made to the required depth and width to permit the installation and bracing of the forms. The foundations shall be shaped and compacted to a firm even surface conforming to the section shown on the Construction Drawings. Material determined to be unsuitable or non-compact by the Engineer will be removed and replaced.

3.02 Forms. Forms shall be wood or metal and shall extend for the full depth of the concrete. All forms shall be straight, free from warp and of sufficient strength to resist the pressure of the concrete without springing. Bracing and staking of forms shall be such that the forms remain in alignment both horizontally and vertically until removal. Satisfactory slip forms may be used when approved. Use of curbing machine will be permitted providing line and grade tolerances can be met.

Steel plates that can be shaped to the desired radius shall be used on all short radii. Open joints shall be formed with a steel separator plate conforming to the section being installed.

Oil and clean all forms prior to placement of concrete.

Use manufacture recommendation for trench drain forming.

3.03 Mixing and Placing. The foundations shall be thoroughly moistened immediately prior to the placing of the concrete. Compaction of the concrete shall have thorough consolidation. Achieved by tamping, spading, vibrating or other acceptable methods. Forms shall be left in place until the concrete has set sufficiently to prevent deformation due to removal. Upon removal of the forms, the curb face shall be immediately finished to a uniform surface. In the case of matching existing concrete finishes, an approved method shall be used. Colored crosswalk and crosswalk gray ribbon strips to have broom finish going different directions.

3.04 Finishing. The surface shall be floated with a wood or magnesium float and given a light broom finish. No plastering of the surface will be permitted. All outside edges of slabs and joints shall be rounded to a ¼-inch radius and tooled smooth. Broom marks to be perpendicular to traffic or pedestrian flow for installation of sidewalk or concrete flatwork. Broom marks to be parallel to traffic flow for installation of curb and gutter. Other finishes as noted below:

3.05 Joints. Expansion joints shall be made using ½" pre-molded expansion joint. Construction joints, using ½" pre-molded joint filler, shall be placed at the end of a day's run or during a day's work if there is more than a 30-minute delay in concrete delivery.

Construction joints shall be formed around all appurtenances such as manholes, utility poles, adjacent structures, etc., extending into or abutting the Work. Pre-molded expansion joint filler ½" thick shall be installed in these joints. Expansion joint filler shall be installed between concrete sidewalks and any fixed structure. Construction joints shall be held approximately ½" lower than finished surface to allow for the specified joint sealant.

Dummy joints (contraction joints) shall be made by a forming tool to a depth of ¼ of the section with a width of ⅛" to ¼". Open joints shall be made with a separator plate, ⅛" to ¼" in width. Dummy joints in lieu of open joints will be permitted with use of curbing machine.

Joint spacing shall be located as follows:

A. Expansion joints (curb and gutter): Every 100' on center; at end of corner radius; at driveway or access ramp sections; as shown on Construction Drawings.

B. Construction joints: As required during construction; at appurtenances and structures through or abutting Work.

C. Dummy or open joints: Every 10' on center for curb and gutter and side walk; equal to width of sidewalk for sidewalk; as shown on Construction Drawings. Tooled joints for crosswalks at approximately 7' apart equally spaced across road.

3.06 Curing. Immediately upon completion of the finishing, concrete shall be moistened and kept moist for a minimum of 72 hours. In lieu of wetting, use of a membrane-curing compound, provide a submittal for approval in advance for curing compound.

3.07 Backfilling. After the concrete has set sufficiently, the areas behind the curb shall be backfilled to the required elevations and shall be thoroughly compacted in accordance with Section 02222 – Structural and Base Course Aggregate.

4.00 FIELD QUALITY CONTROL

4.01 Tolerances. All vertical surfaces shall not vary more than ¼" in 10' in the horizontal direction. Surface deviation shall not exceed ¼" when measured with a 16' straight edge.

4.02 Concrete Strength. The Owner's Geotechnical Engineer will take field samples for purposes of testing concrete strength. All substandard strength concrete shall be removed and replaced at Contractor's expense. The owner will provide the materials testing and pay the costs. Contractor is encouraged to perform their own materials quality control testing.

5.00 MEASUREMENT AND PAYMENT

See Section 01025 "Measurement and Payment".

END OF SECTION

**SECTION**
**FULL DEPTH RECLAMATION**

PART 1 - GENERAL

1.1 DESCRIPTION
The pulverization of 3” of existing asphalt along with a minimum of 6” of existing base producing 9” of structural base for the new paved surface.

A. This work will be specified as a total processed depth of 9 inches. This work consists of cutting of the existing asphalt mat, pulverizing the existing asphalt mat, mixing the pulverized asphalt mat with the existing subgrade, existing base course, or combination thereof, to the specified depth, grading and compacting the mixed material, in accordance with and at locations as shown in the Contract.

PART 2 – PRODUCTS

2.1 MATERIALS

A. The existing asphalt pavement, as defined in the plans shall be reclaimed in-place.

PART 3 – EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A. The existing asphalt mat shall be cut at neat lines as shown in the plans by the use of a cutting wheel attached to a blade or by another approved method. The existing asphalt mat shall be pulverized, and mixed with the existing subgrade, base course, or combination thereof to a specified depth or as directed by the Engineer, with a self-propelled rotary type mixing machine. The mixing machine shall make as many passes as required to uniformly mix the asphalt, subgrade, existing base course, or combination thereof to the required thickness. Mixing of the different materials shall create a homogenous mixture. The particle size of the pulverized asphalt mat shall be a uniform mixture with the blended material meeting a maximum particle size of 1 inches with 95% smaller than 1½ inches (equal to a CDOT class 5).

B. When the addition of water is necessary for initial compaction purposes, unless otherwise approved by the Engineer, it shall be added through the mixing machine with the capability to uniformly distribute water through the mixed materials to within 2 percent of the optimum moisture as determined in accordance with AASHTO T-180 Method D.

C. This effort will be followed up with the addition of water as required to achieve optimum moisture content, the shaping and compaction of the pulverized material to the grades and crowns as shown in the contract drawings. The entire pulverized asphalt/base course surface should then be compacted to 95

percent of the maximum modified proctor density (ASTM D 1557/AASHTO T 180).

D. When proper mixing has been accomplished, the mixture shall then be bladed, shaped, wetted or dried, and rolled to meet a minimum of 95 percent of the maximum dry density determined in accordance with AASHTO T-180 Method D. Grading equipment used to establish the final surface elevations shall have automatic controls for transverse slope. The transverse slope controls shall be capable of maintaining the final surface within 0.1 percent of the specified slope. Variations from the subgrade plane shall not be more than ½″ in 10 feet for the material immediately below the first paved lift. The work shall be maintained and tested for conformance to these requirements immediately prior to placing additional pavement layers.

E. The pulverized asphalt/base course surface will then be proof-rolled with a heavily loaded pneumatic-tired vehicle (or loaded 2000 gallon water truck). Proof rolling will be observed by a City representative. Areas which deform excessively under the wheel loads shall be reworked.

F. Acceptance

1. Full Depth Reclamation work will be full compensation for all work necessary to complete the item including cutting of the existing asphalt mat, pulverizing the existing asphalt mat, mixing the pulverized asphalt mat into existing subgrade or base course, wetting and compacting the mixed pulverized asphalt mat and subgrade and/or base course, blading, shaping, and haul.

END OF SECTION

## SECTION 03300

## CAST-IN-PLACE CONCRETE

### 1.00 GENERAL

1.0l Scope. Work to be completed under this section shall include all labor, equipment, plant and materials necessary to furnish and install all poured-in-place concrete, together with all miscellaneous and appurtenant items, as shown on the Construction Drawings and as specified herein.

1.02 Related Work Specified Elsewhere.

Section 02626 – Concrete Curb & Gutter, Sidewalk, Cross Walks, and Driveways

1.03 Reference Standards. Except as modified or supplemented herein, all Work shall conform to the following standards, latest edition. Refer to standards for detailed requirements.

ACI 318 - Building Code Requirement for Reinforced Concrete
ACI 301 - Specifications for Structural Concrete for Buildings
ACI 347 - Recommended Practice for Concrete Formwork
ACI 305 - Recommended Practice for Hot Weather Concreting
ACI 306 - Recommended Practice for Cold Weather Concreting

Publication SP-2, ACI Manual for Concrete Inspection

ASTM A 615 - Standard Specifications for Deformed and Plain Billet Steel Bars for Concrete Reinforcement.

ASTM A 185 - Specifications for Welded Steel Fabric for Concrete Reinforcement.

ASTM C 618 - Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for use as a Mineral Admixture in Portland Cement Concrete.

1.04 Submittals. The following shall be submitted to and approved by the Engineer prior to beginning any concrete work.

A. Lab Design Mix. Prior to the start of Work, Contractor to submit a statement of the proportions for the concrete mixture. Statement to include:

1. Location & identification of aggregate source.
2. Batch quantities for one (1) cubic yard of concrete, including:
   a. Weight of fine aggregate in a saturated surface dry condition.
   b. Weight of coarse aggregate in a saturated surface dry condition.
   c. Weight or number of 94 pound bags of cement.
   d. Weight or gallons of water.
   e. Amount and description (including manufacturer, specific product name, and number) of all admixtures.
3. Test results on trial batch concrete made from the proposed mix design, including:
   a. Cement factor in bags per cubic yard based on yield tests.
   b. Water-cement ratio.
   c. Percent of entrained air. (5% to 8% expected)
   d. Consistency in inches of slump.
   e. At least three 28-day compressive strength tests.

4. Brand, type and place of manufacture of cement.

5. Aggregate test results for grading, deleterious substances and physical properties using test procedures developed by ACI.

B. Reinforcing Steel. Product data sheet and statement of manufacturer's compliance with applicable standards.

1.05 Record of the Work. Contractor to keep a record of time, date and location of each concrete pour and submit these records to the Engineer.

1.06 Notice of Intention to Pour. Contractor shall notify the Engineer or Town Representative at least 48 hours before an intended cast-in-place concrete pour. No structural cast-in-place concrete shall be poured until all reinforcing, forms and foundation soils have been inspected by the Engineer.

1.07 Protection of the Work. Contractor to be responsible for protection of all Work prior to acceptance. In place concrete shall not be subjected to loadings or stress prematurely.

1.08 Storage of Materials. Cement and aggregate shall be stored in such a manner as to prevent deterioration or intrusion of foreign matter. Any material which has deteriorated or which has been damaged shall not be used for concrete. Storage on site of cement or aggregates is not anticipated for this project.

All reinforcing steel shall be stored in a dry location and protected from excessive accumulation of rust, scale or exposure to form oil.

**2.00 MATERIALS**

2.01 Cement. All cement shall be Portland Cement Type II conforming to "Specifications for Portland Cement" (ASTM C 150). The same brand cement for all exposed cast-in-place concrete shall be used.

2.02 Stone Aggregate. Fine and course aggregate shall conform to "Specifications for Concrete Aggregates" (ASTM C33). Fine aggregates shall be clean, hard, natural and free from all foreign matter. Course aggregate shall be sound, crushed rock or gravel, free from adherent coating, organic water or injurious amounts of flat or friable pieces.

2.03 Water. Water used in mixing shall be potable, cleaned and free from deleterious amounts of oil, acids, alkalis and organic material.

2.04 Admixtures. "Protex" as manufactured by Protex Industries, Inc. and conforming to Specifications of Air-Entraining Admixtures for Concrete (ASTM C260) is an approved air-entraining admixture. Other admixtures for retarding or accelerating concrete may be used in strict accordance with manufacturer's recommendations and ASTM Specifications upon approval of the Engineer.

2.05 Form Material. For unexposed concrete surfaces, forms may be undressed lumber free from excessive knots. For exposed surfaces, use wood or metal forms as required to give finish as specified.

2.06 Reinforcing Steel. Reinforcing steel shall be deformed bars conforming to "Standard Specifications for Deformed and Plain Billet Steel Bars for Concrete Reinforcement" (ASTM A615) and shall be Grade 60. Placed as shown on the drawings.

2.07 Fibermesh. Fibermesh additive at the rate of 1½ pounds/cubic yard shall be used with all concrete. Use shall be in accordance with manufacturer's recommendations.

## 3.00 METHODS AND PROCEDURES

3.01 Concrete Mix.

A. Proportions. Concrete is to be proportioned according to laboratory designed mixes using the type of aggregate specified and producing the minimum of twenty-eight (28) day ultimate compressive strength as noted on the Construction Documents. All concrete shall be made with stone aggregate unless specifically noted, and no concrete shall have a 28-day compressive strength of less than 4,000 psi.

B. Cement and Water Content. The minimum quantity of cement used per cubic yard of concrete shall be 580 pounds, or as required to meet compressive strength requirement. Water content shall not exceed 0.48 pounds water/pounds cement.

C. Air Entrainment. An air-entraining agent shall be added to all stone concrete so as to entrain 5%-8% by volume. Air-entraining agents shall be in strict accordance with the recommendations of the manufacturer and the testing laboratory for the design mix to assure strength requirements are being fully met or exceeded.

D. Mixing of Materials. The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged. For job-mixed concrete, the mixer shall be rotated at the speed recommended by the manufacturer.

For stone concrete, mixing shall continue for at least one minute after all materials are in the mixer. Ready mixed concrete shall be mixed and delivered in accordance with "Standard Specifications for Ready Mixed Concrete" (ASTM C94-69).

Sufficient time shall be allowed for proper mixing on the concrete to provide uniformity throughout the batch. Long delays in concrete placement shall be avoided and any concrete that has not been placed within one (1) hour after water has been added to the mix shall be rejected. Over wet mixes shall be rejected and shall not be corrected by the addition of either aggregate or cement to the mixer. Mix not less than ten minutes in transit mix trucks after addition of the mixing water.

E. Consistency. Slumps shall be minimum, consistent with placing requirements. Slump test shall be made in accordance with "Slump Test for Consistency of Portland Cement Concrete" (ASTM C143-58). Unless written approval is obtained from the Engineer, the maximum slump shall be three (3,□ ±1") inches and the maximum size aggregate shall be one and one-half (1½") inches.

3.02 Concrete Forms.

A. Forms shall conform to the shape, lines, grades and dimensions of the concrete as detailed on the Construction Drawings. All forms for exposed finished surfaces shall be built with the material needed to produce the form, texture and design specified in Concrete Finishes of this section.

B. Design of Forms. Forms shall be sufficiently tight to prevent leakage of mortar and shall be properly braced or tied together so as to maintain the desired position. The formwork shall be designed for the loads outlined in Part 3, Section 102 of "Recommended Practice for Concrete Form Work" (ACI 347). The forms shall be oiled for ease of removal of forms after setting of concrete.

C. Form Ties and Incidentals. Form ties shall be bolts and rods (adjustable for tightening) arranged so that no metal is within 3'-4" of surface after removal of forms. Ordinary wire ties will be allowed with the specific approval of the Engineer. No ties through exposed concrete will be allowed. Set forms for all required anchors, bolt inserts, slots, sleeves, supports, etc., furnished under portions of this Specification and installed under this section.

D. Removal of Forms. Forms shall not be disturbed until concrete has hardened sufficiently to permit their removal with safety. The removal of the forms shall be carried out in such a manner as to insure the safety of the structure. Unless otherwise permitted by the Engineer, forms shall not be removed until 24 hours after pouring.

3.03 Construction and Expansion Joints. Expansion and control joints shall be one half-inch (1/2") thick asphalt impregnated fiberboard expansion joint filler (ASTM D1752) wherever concrete slabs abut buildings, existing concrete or footings as needed. All expansion joint filler shall extend the full depth of the slab. Expansion joint materials between curbs and sidewalks shall be ½" thick. Joint sealant shall be applied above expansion joints as recommended by product manufacturer.

3.04 Concrete Placement.

A. Preparation for Placing. Before placing concrete, all equipment for mixing and transporting concrete shall be cleaned and all debris and ice shall be removed from places to be occupied by concrete. Forms shall be properly treated and all reinforcement cleaned of ice and other coatings. Water shall be removed from place of deposit before concrete is placed.

B. Conveying. Concrete shall be conveyed from the mixer to the place of final deposit by methods, which will prevent the separation or loss of the materials. Equipment for chuting, pumping, or pneumatically conveying concrete shall be of such size and design as to ensure a practically continuous flow of concrete at the delivery and without separation of the materials.

C. Depositing. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to re-handling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the space between the bars. No concrete that has been partially hardened or been contaminated by foreign matter shall be deposited on the Work, nor shall re-tempered concrete be used. When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed. Place concrete in approximately horizontal layers avoiding displacement of reinforcement above fresh concrete and formation of seams and planes of weakness in sections. When construction joints are necessary, they shall be located as specified in this section under Construction Joints. For bonding fresh concrete, roughen and clean exposed surface and brush with neat cement grout. Place new concrete before grout takes initial set.

D. Weather Conditions. Unless adequate protection is provided, and the Engineer's approval is obtained, concrete shall not be placed during rain, sleet, or snow. When the mean temperature falls below 40°F for 3 successive days, concreting shall conform to "Recommended Practice for Cold Weather Conditions: (ACI 306 R). Concrete placed in hot weather shall meet the standards of "Recommended Practice for Hot Weather Concreting (ACI 305R). Concrete is not to be placed under water. A suitable means shall be provided for lowering the water level below surfaces upon which concrete is to be placed. This may require excavating approximately 12 inches below the bottom of the concrete surface and refilling with gravel and compacting. The groundwater shall not be allowed to rise to the bottom of the concrete until 24 hours after the concrete has been completed. Water shall

not be allowed to fall upon or run across the concrete during this period.

E. Protection and Curing. Concrete protection and curing shall be in conformance with ACI 308. Immediately after placing or finishing, concrete surfaces not covered by forms shall be protected from loss of surface moisture. All concrete shall be kept in a moist condition for at least five (5) days after placement. Curing compounds may be used upon approval of the Engineer.

3.05 Slabs on Grade. All slabs on grade shall be poured directly on the prepared gravel subgrade where shown on the Construction Drawings. Construction joints shall be placed such that no section of slab is greater than 25 feet on a side. Finishes, Expansion & Control Joints & Protection shall be as specified under other sections of this section, drawings or project manual. Control joints for sidewalks shall be tooled and no further apart than 10'.

3.07 Reinforcing.

A. Placing Reinforcement. Reinforcing steel, at the time concrete is placed, shall be free from scale, rust or other coatings that will destroy or reduce bond. Reinforcement shall be accurately placed as shown on the Construction Drawings and shall be adequately secured in position by concrete or metal chairs and spacers.

Reinforcing shall be furnished in the full lengths indicated on the Construction Drawings unless otherwise authorized by the Engineer. Splicing of bars, except where shown on the Construction Drawings or specified, shall not be permitted without written approval by the Engineer. Reinforcement placed in any member shall be inspected before any concrete is placed and the Engineer shall be notified 24 hours in advance before any concrete placement.

The placing, fastening, splicing and supporting of reinforcing steel and welded wire fabric shall be in accordance with the Construction Drawings and the latest edition of the CRSI "Recommended Practice for Placing Reinforcing Bars" and in accordance with ACI 318. Bars shall be placed around all corners to splice steel in adjacent walls, footers and slabs (such detailing may not be shown on Construction Drawings).

B. Concrete Protection & Reinforcement. Where not otherwise indicated on the Construction Drawings, the minimum thickness of concrete over the reinforcement shall be as follows:

1. Concrete deposited against earth: 3"
2. Slabs and walls not exposed to weather or earth: 3/4"
3. All other concrete placed in forms:

For bars larger than #5: 2"
For bars #5 or smaller: 1½"

**4.00 FIELD QUALITY CONTROL**

4.01 Concrete Tests. 6" x 12" cylinders shall be taken at the point of placing in the forms, shall be job cured and tested in accordance with ASTM Standards by a qualified technician hired by the OWNER. For each strength of concrete used, one set of four (4) cylinders for each day's pour, but not less than one (1) set of cylinders for each 100 cubic yards poured shall be taken. Two (2) cylinders at seven (7) days and two (2) cylinders at twenty-eight (28) days shall be tested. In addition, when in the opinion of the Engineer there is a possibility of the surrounding air temperature falling below 40º F, additional specimens to be cured under job conditions may be required. The owner will provide quality control testing for project acceptance. The contractor can provide their own testing and shall cooperate with the scheduling and field testing.

4.02 Enforcement of Strength Requirements. Should the strengths shown by the test specimens fall below the specified values, the Engineer shall have the right to require changes in proportions to apply on the remainder of the Work.

If concrete fails to meet the strength requirements of this specification, the Engineer may order the Contractor to have a testing laboratory, acceptable to the Engineer, take and test core samples of questionable concrete. The Engineer may order all low-strength concrete removed and replaced if core strengths are below specified strengths. All costs connected with concrete coring and removal and replacement of low-strength concrete shall be borne by the Contractor. Contractor has the option to forego core testing of failed concrete areas and simply remove and replace at their expense. Owner has the right to accept non-conforming concrete work (based on strength or smoothness) at a reduced price based on the CDOT Standard Specifications for non-conforming work.

Contractor shall repair all core holes at his expense.

4.03 Slump Tests. Engineer to conduct slump tests on each day's pour and on individual trucks whenever concrete consistency varies. Test failure shall be grounds for rejection of individual or batch loads.

4.04 Air Content. Engineer to conduct air tests on each day's pour and on individual trucks as determined by the Engineer. Test failure shall be grounds for rejection of entire batch until satisfactory tests are obtained.

## 5.00 MEASUREMENT AND BASIS OF PAYMENT

Payment will be made based on the bid item to which concrete pertains.
See Section 01025 “Measurement and Payment”.

End of Section

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