

**BIDDER INFORMATION**  
**AND**  
**CONTRACT DOCUMENTS**

**FOR**

**CURB AND GUTTER IMPROVEMENTS**  
**HWY 60 – NORTH SIDE**  
**RUTHERFORD AVE. TO DENVER AVE.**

**March 2018**

**TOWN OF JOHNSTOWN**  
**450 S. PARISH AVE.**  
**JOHNSTOWN, CO 80534**

**GENERAL DOCUMENTS**

Invitation for Bids

Project Description

Specifications

Instructions for Bidders

Bid Proposal Form

Contract Form

Insurance Requirements

Notice to Proceed Form

Change Order Form

Notice of Contractor's Settlement Form

Final Receipt and Guarantee Form

## NOTICE OF REQUEST FOR BIDS

**MARCH 15, 2018**

Sealed Bids will be received by the TOWN OF JOHNSTOWN, COLORADO, hereinafter referred to as Owner, at Town of Johnstown, Colorado, 450 S. Parish Ave., Johnstown, CO 80534 until 2:00 p.m., local time, Thursday, March 29, 2018 for

### **CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE RUTHERFORD AVE. TO DENVER AVE.**

At said place and time, and promptly thereafter, all Bids that have been duly received will be publicly opened and read aloud.

This Contract provides for Construction of the CURB AND GUTTER Improvements. This work will include but not be limited to vertical curb and gutter, and miscellaneous appurtenances.

Any and all work awarded will be to one Contractor.

Digital copies of the Town's Design Criteria and Construction regulations are available in the Street Department page of the Town's website, [www.townofjohnstown.com](http://www.townofjohnstown.com).

A pre-bid meeting is scheduled for 10:00 am, Tuesday March 20 at Town Hall, 450 South Parish Ave., Johnstown, CO 80534. A project site visit will follow the meeting.

Bidders must be licensed contractors in the State of Colorado. Bids received from Bidders who are not recorded by the Town Clerk as having received the Bidding Documents will not be opened.

Bids will be received on a total price not to exceed basis as described in the Bidding Documents.

Work at the site is expected to be commenced within thirty (30) days after the date of contract. Substantial Completion of the work is required as specified in the Bid Form.

Bid security in the amount of five percent (5%) of the total Bid Price must accompany each Bid in the form specified in the Instructions to Bidders.

No Bid may be withdrawn within a period of thirty (30) days after the date fixed for opening Bids.

The Owner reserves the right to reject any or all Bids, and to waive any informalities and irregularities therein, and all Bidders shall agree that damage or claim brought by any bidder because of rejections, nor shall the Bidders seek any recourse of any kind against the Owner because of such rejections, and the filing of any bid in response to this invitation shall constitute an agreement of the Bidder to these conditions.

TOWN OF JOHNSTOWN, COLORADO

By: Diana Seele, Town Clerk

## **PROJECT DESCRIPTION**

### **CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE RUTHERFORD AVE. TO DENVER AVE.**

Summary of work as detailed in the Plans and Specifications:

1. Remove and replace approximately 750' (subject to field measurement) of 6" vertical curb and gutter. The cross sections shall follow the CDOT Standard Plan Curb and Gutter Type 2. Removal and replacement requirements, concrete strength and testing shall follow the Johnstown Public Improvements Design Criteria and Construction Regulations, from which an excerpt is attached for reference.
2. Construct alley cross pan approximately 12' width and 20' in length (subject to field measurement).
3. Town inspections and acceptance of improvements.
4. The entire Bidder Information document is available on the Street Department page of the Town's website, [www.townofjohnstown.com](http://www.townofjohnstown.com)

**TOWN OF JOHNSTOWN**  
**CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE**  
**RUTHERFORD AVE. TO DENVER AVE.**  
**INSTRUCTIONS TO BIDDERS**

- 1) Project Owner: Town of Johnstown, 450 S. Parish Ave. Johnstown, CO 80534. Ph. 970-587-4664 Fax: 970-587-0141.
- 2) Project Manager: Don Gardner, Parks and Streets Supt. 970-534-0247
- 3) Schedule: All bids shall specify the anticipated starting and completion dates.
- 4) Bid deposit: All bids tendered shall be accompanied by a bid deposit (bid bond, certified check or money order) equal to five percent (5%) of the total bid. Said sum shall be returned to the successful bidder upon execution of contract. Should the successful bidder fail or refuse to execute contract upon award, said sum shall be forfeited to the Town. Deposits will be returned to all unsuccessful bidders within a reasonable time period after award of bid.
- 5) Bonds and Insurance: The successful bidder shall be required to furnish the bonds and insurance coverage, or approved substitutes in lieu thereof, as noted below. Attorneys-in-fact who sign the Bid Bonds or Payment Bonds and Performance Bonds must file with each bond a certificate and effective dated copy of their Power of Attorney.
  - a) Required / Not Required: Performance bond, conditioned upon satisfactory and timely completion of the project to be performed – 100% of bid amount.
  - b) Required / Not Required: Mechanics and materialmen's bonds, conditioned upon satisfactory and timely payment of all amounts lawfully due to suppliers of labor and material upon said project – 100% of bid amount.
  - c) Required / Not Required: Warranty bond, conditioned upon timely repair of defects and unworkmanlike performance in said project, for a period of one (1) year after completion thereof – 15% of bid amount.
  - d) Required / Not Required: Proof of workman's compensation insurance coverage, in conformity with Colorado law, in respect of all persons to be employed on said project, including sub-Contractors.
  - e) Required / Not Required: Proof of public liability insurance coverage to include bodily injury and property damage equal to or greater than (refer to attached insurance requirements). Said insurance will remain in full force and effect during the term of the contract (Town to be named as an additional insured).
  - f) Required / Not Required: Miscellaneous: 1 year written warranty on labor and materials.
  - g) Required / Not Required: Liquidated damages will be charged at \$200.00 per day for non-performance of delivery on or before agreed date.
  - h) Required / Not Required: Before final payment all lien waivers on materials and labor will be supplied to Town Clerk.
- 6) Acceptance/rejection of Bids: The Town may waive any informalities, minor defects, or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. No bidder may withdraw a bid within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the TOWN and the bidder.
- 7) Project Conditions and Documents: Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule(s) by examination of the site. After bids have been submitted, the bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done. The Town shall provide to any and all bidders, prior to bidding, all information that is pertinent to and delineates and describes the land owned and rights-of-way acquired upon request. The Contract Documents contain the provisions required for the construction of the project. Information otherwise obtained from an officer, agent or employee of the Town or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the contract.
- 8) Bidder qualifications: The Town may make such investigations as deemed necessary to determine the ability of the bidders to perform the work, and the bidders shall furnish to the Town all such information and data

for this purpose as the Town may request. The Town reserves the right to reject any bid if the evidence submitted by, or investigation of, the successful bidder fails to satisfy the Town that such bidder is qualified to carry out the obligations of the Agreement and to complete the work contemplated therein. The Town reserves the right to reject any conditional or qualified bid.

- 9) Subcontractor information: The low bidder shall supply the names and addresses of major material suppliers and subcontractors when requested to do so by the Town.
- 10) Contract award: The party to whom the contract is awarded ("Contractor") will be required to execute the Agreement and obtain the Certificates of Insurance within three (3) calendar days from the date when Notice of Award is delivered to the bidder. The Notice of Award shall be accompanied by the necessary Agreement. In case of failure of the bidder to execute the Agreement and to furnish said Certificates, the Town may at its option, consider the bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Town. The Town will be entitled to such other rights as may be granted by law. The Town, after receipt of acceptable Certificates of Insurance and Agreement signed by the party to whom the contract was awarded, shall sign the contract and return to such party an executed duplicate of the contract.
- 11) Start of Work: The Contractor shall commence work not later than thirty (30) calendar days after date of the Notice to Proceed issued by the Town to the Contractor and shall complete the work as specified, within the time specified in the contract. All work shall be prosecuted in an orderly and diligent manner. The Contractor shall cooperate with, and conform to, the request of the Town to expedite particular portions of the work or to suspend or transfer his operations on any portion of the work where such alteration of the Contractor's operations is deemed advisable by the Town.
- 12) All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.
- 13) Portions of any project may have been termed "Alternates or Contingent" and the OWNER reserves the right to include or remove any or all of these Alternates from the Contract at his sole option or discretion.
- 14) Contractor obligations:
  - a) Materials: Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light power, transportation, and other facilities necessary for the execution and completion of the work. The Contractor shall furnish satisfactory evidence as to the kind and quality of materials.
  - b) Progress Schedule: The Contractor shall submit, at such times as may reasonably be requested by the Project Manager, schedules which shall show the order in which he proposes to carry on the work, with dates at which the Contractor will start the several parts of the work, and estimated dates of completion of the several parts. The Special Conditions or Drawings may require that certain phases or parts of the work be completed first or in a certain order. If the Contractor elects to use PERT or CPM charts, he shall furnish copies of them and all revisions thereto or amendments thereto as the work progresses to the Project Manager upon request.
  - c) No assignment by the Contractor of this contract or any part thereof or of the funds to be received thereunder by the Contractor will be recognized unless such assignment has had the written approval of the Town and the surety has been given due notice of such assignment and has furnished written consent thereto. Such written approval by the Town shall not relieve the Contractor of the obligations incurred by him under the terms of this contract.
  - d) The Contractor shall as soon as practical after signing the contract, notify the Project Manager in writing, giving the names and qualifications of all subcontractors proposed for work and shall not employ any that the Project Manager may within a reasonable time object to. The Contractor will not be allowed to subcontract more than fifty percent (50%) of the total monetary value of the contract without prior approval of the Town. The Contractor shall notify the Project Manager of each subcontract he awards, giving:
    - i) Name, address, and telephone number of the subcontractor
    - ii) Branch of work covered
    - iii) Total price of subcontract
    - iv) Date of subcontract

- v) Subcontractors, before commencing work, must file with the Project Manager satisfactory certificates in duplicate showing insurance coverage. Failure of the subcontractor to provide such certificates shall not relieve the Contractor of his obligation to insure and to hold the Town harmless. Subcontractors shall also file with the Project Manager copies of applicable permits and licenses required to do the subcontracted work.
- e) The Town may award other contracts for additional work, and the Contractor shall fully cooperate with such other Contractors and carefully fit his own work to that provided under the other contracts as may be directed by the Project Manager. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other Contractor.

**TOWN OF JOHNSTOWN, COLORADO**

**CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE**  
**RUTHERFORD AVE. TO DENVER AVE.**

THIS CONTRACT entered into at Johnstown, Colorado, this \_\_\_\_ day of \_\_\_\_\_, 2018 by and between the TOWN OF JOHNSTOWN, COLORADO, a Colorado Home Rule Town, with address for notice at 450 S. Parish Ave./ P.O. Box 609, Johnstown, Colorado 80534 hereinafter called and referred to as the Town, and \_\_\_\_\_, with address for notice at \_\_\_\_\_ hereinafter called and referred to as Contractor.

**WITNESSETH:**

THAT FOR AND in consideration of the premises, the payments hereinafter provided for, and the mutual covenants, promises, doings, and things hereinafter set forth, the parties hereto do now agree as follows:

1. That Town does engage the services of Contractor, and Contractor does hereby bind himself unto Town, to perform the following project to Town, to wit:

**CURB AND GUTTER IMPROVEMENTS- HWY 60 – NORTH SIDE**  
**RUTHERFORD AVE. TO DENVER AVE.**

for a total price not to exceed \_\_\_\_\_ (\$ \_\_\_\_\_), which shall be paid in the following manner:

The bid price shall be payable by Town unto Contractor upon Town's accounts payable cycle following approval by Town of detail invoices from Contractor. Final payment equal to ten percent (10%) of the bid amount shall be paid upon final completion of the work, and acceptance by the Town, and receipt of all lien waivers, and end of period for Notice of Final Payment as published by Town Clerk.

2. That all of Contractor's performance hereunder shall be in a workmanlike manner, and shall be in conformity with the attached specifications for said project, and in accordance with time restrictions and limitations set forth:

3. The term "Contract documents" means and includes the following:

- (a) Plans and Specifications
- (b) Contract and Attachment "A"
- (c) Insurance Certificates and Insurance Requirements
- (d) Notice to Proceed
- (e) Change Order
- (f) Invitation for Bids
- (g) Instructions to Bidders
- (h) Bid Proposal and Bid Bond
- (i) Notice of Contractor's Settlement
- (j) Final Receipt and Guarantee

4. The contractor shall furnish all materials, supplies, tools, equipment, labor and other services necessary for the construction and completion of the project described herein.

5. That within three (3) days of the execution of the contract, the Contractor shall have furnished the Town all of the items required of the Contractor in the Contract Documents. Upon receiving the required documents, the Town shall issue a Notice to Proceed. Contractor shall then have until \_\_\_\_\_ to complete the project. Failure to complete the project by the specified time shall cause Contractor to be liable to the Town for \$ 200.00 each day beyond such time period to reimburse Town for its damages for such delay, such amount being difficult to ascertain in advance, and therefore, the Parties agree to the per day damages as liquidated damages and not as a penalty.

This contract shall be and become binding upon, and inure to the benefit of, the parties hereto, their heirs, personal representatives, successors and assigns. Further, this Contract shall be construed and interpreted according to the laws of the State of Colorado and any action to interpret, construe, or enforce the same shall be maintained in the appropriate court in Weld County, Colorado.

Executed as of the date and year as above written.

**TOWN OF JOHNSTOWN, COLORADO**

By \_\_\_\_\_  
Mayor

**ATTEST:**

By \_\_\_\_\_  
Town Clerk

**CONTRACTOR**

By \_\_\_\_\_  
(Title)

**ATTEST:**

By \_\_\_\_\_

**EXHIBIT A**  
**REQUIRED PROVISIONS FOR CONTRACT FOR SERVICES**  
**PROHIBITING EMPLOYMENT OF ILLEGAL ALIENS**

Contractor shall not:

1. Knowingly employ or contract with an illegal alien to perform work under this public contract for services;  
or
2. 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 public contract for services.

Contractor has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under the public contract for services through participation in either the e-verify program or the Department of Labor and Employment program.

Contractor is prohibited from using either the e-verify program or the Department of Labor and Employment program procedures to undertake pre-employment screening of job applicants while the public contract for services is being performed.

If Contractor obtains actual knowledge that a subcontractor performing work under the public contract for services knowingly employs or contracts with an illegal alien, the Contractor shall be required to:

1. Notify the subcontractor and the contracting state agency or political subdivision 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 pursuant to subparagraph 1 of this subparagraph 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 that subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

Contractor shall comply with any reasonable request by the Department made in the course of an investigation that the Department of Labor and Employment is undertaking pursuant to the authority established in subsection (5) of Section 8-17.5-102 of the Colorado Revised Statutes.

**IF CONTRACTOR VIOLATES ANY OF THE AFOREMENTIONED REQUIREMENTS, THE TOWN MAY TERMINATE THE CONTRACT FOR BREACH OF CONTRACT. IF THIS CONTRACT IS SO TERMINATED, CONTRACTOR SHALL BE LIABLE FOR ACTUAL AND CONSEQUENTIAL DAMAGES TO THE TOWN OF JOHNSTOWN.**

**(REV. 2017)**

**TOWN OF JOHNSTOWN**  
**CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE**  
**RUTHERFORD AVE. TO DENVER AVE.**

**BID PROPOSAL**

Proposal of \_\_\_\_\_ (hereinafter called "bidder"), organized and existing under the laws of the Town of Johnstown, Colorado, doing business as \_\_\_\_\_ to the Town of Johnstown (hereinafter called "Town").

In compliance with your Advertisement for Bids, bidder hereby proposes to perform all work for the Johnstown **CURB AND GUTTER IMPROVEMENTS-HWY 60 - NORTH SIDE RUTHERFORD AVE. TO DENVER AVE.** in strict accordance with contract documents, within the time set forth therein, and at prices stated below.

By submission of this bid, each bidder certifies, and in cases of a joint bid, each party hereto certifies as to his own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any other bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before the date specified. Bidder further agrees to pay liquidated damages as set forth in the bidding documents.

Bidder acknowledges receipt of the following Addendum:

\_\_\_\_\_  
\_\_\_\_\_

Bid shall include all applicable taxes and fees.

Bidder agrees to perform all work described in the contract documents for a total price not to exceed: \_\_\_\_\_, (bid in words),

(\$ \_\_\_\_\_)

Starting Date: \_\_\_\_\_ Completion Date: \_\_\_\_\_

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

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

TITLE: \_\_\_\_\_

## INSURANCE REQUIREMENTS

The contractor shall secure and maintain such insurance policies as will protect himself, his subcontractors, and the Town of Johnstown, from claims for bodily injuries, death or property damage, which may arise from operations under this contract whether such operations be by himself or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:

- (a) Statutory Worker's Compensation
- (b) Commercial General Liability
  - General Aggregate Products/  
(Completed Operations Aggregate) \$2,000,000
  - Each Occurrence \$ 2,000,000
  - Personal & Advertising Injury \$ 1,000,000
  - Fire Damage \$ 50,000
  - Medical Expense \$ 5,000
- (c) Automobile Liability
  - Bodily Injury and Property Damage/  
(Combined Single Limit) \$ 1,000,000

The Certificate of Insurance must show the Town of Johnstown as an Additional Insured.

All policies shall be for not less than the amounts set forth above.

Certificates or copies of policy of such insurance shall be filed with the Town and shall be subject to its approval as to adequacy of protection, within the requirements of the specifications. Said Certificates of Insurance shall contain a 30-day written notice of cancellation in favor of the Town.

**NOTICE TO PROCEED**

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

**RE: CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE  
RUTHERFORD AVE. TO DENVER AVE.**

You are hereby notified to commence work in accordance with the Agreement dated \_\_\_\_\_, 2018, and you are to complete the work by \_\_\_\_\_.

THE TOWN OF JOHNSTOWN

By \_\_\_\_\_

Title \_\_\_\_\_

**ACCEPTANCE OF NOTICE TO PROCEED**

Receipt of the above Notice to Proceed is hereby acknowledged by:

\_\_\_\_\_  
\_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 2018.

By \_\_\_\_\_

Title \_\_\_\_\_

**CHANGE ORDER**

CHANGE ORDER NO. \_\_\_\_\_

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

**PROJECT: CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE  
RUTHERFORD AVE. TO DENVER AVE.**

TO (CONTRACTOR): \_\_\_\_\_

JUSTIFICATION: \_\_\_\_\_

\_\_\_\_\_ You are directed to make the following changes in the work. All other terms and conditions of the contract not expressly modified hereby shall remain in full force and effect.

ITEM NO.	DESCRIPTION	EST. QTY.	UNIT	COST	AMOUNT
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The original contract sum was ..... \$ \_\_\_\_\_

Net change by previous change orders..... \$ \_\_\_\_\_

The contract sum prior to this Change Order was..... \$ \_\_\_\_\_

The contract sum will be (increased) (decreased) or (unchanged) by this Change Order..... \$ \_\_\_\_\_

The contract sum including this Change Order will be..... \$ \_\_\_\_\_

The new contract time will be (increased) (decreased) or (unchanged) by \_\_\_\_\_ (\_\_\_\_\_) days.

The date of completion as of the date of this Change Order is therefore \_\_\_\_\_, 2018.

ACCEPTED BY:  
\_\_\_\_\_  
Contractor

ORDERED BY:  
The Town of Johnstown  
450 S. Parish Ave.  
Johnstown, Co 80534

Address  
By \_\_\_\_\_

By \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

**NOTICE OF CONTRACTOR'S SETTLEMENT**

This is to notify all persons interested that the Town of Johnstown, Colorado will make  
final payment to \_\_\_\_\_,  
for work completed on

**CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE  
RUTHERFORD AVE. TO DENVER AVE.**

Said final payment will be made on \_\_\_\_\_, 2018.

Anyone having claims in conjunction with this project may file same with the undersigned no later than  
\_\_\_\_\_, 2018.

TOWN OF JOHNSTOWN

BY \_\_\_\_\_  
Diana Seele  
Town Clerk

Dated: \_\_\_\_\_

**FINAL RECEIPT AND GUARANTEE**

Date: \_\_\_\_\_

Received this date of \_\_\_\_\_, 2018, as full and final payment of the cost of improvements provided for in the Contract executed by \_\_\_\_\_, and Payee on or about \_\_\_\_\_, 2018, together with all amendments, change orders, and additions thereto, the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), being the remainder of the full amount accruing to the undersigned by virtue of said contract and extra work performed thereunder, said payment covering and including full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto, for the additional consideration of One Dollar (\$1.00) for the execution hereto, and the undersigned hereof releases the Town of Johnstown from any claims whatsoever resulting from said contract and all work performed thereunder.

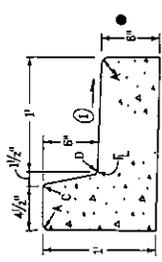
The undersigned by these present certifies that all persons doing work upon or furnishing materials for said improvements under the foregoing contract and all additions thereto have been paid in full. The undersigned further certifies that all work has been completed in a workmanlike manner in conformity with the plans and specifications. That should any portion of said work or material prove defective within **one (1) year** from the date of final acceptance of the entire project by the Town, the undersigned shall replace any such defective material and remedy any such defective work to the satisfaction of the Town of Johnstown and shall defend, indemnify, expenses, and charge of every kind which may arise as a result of any such defective material and workmanship during said period.

**CURB AND GUTTER IMPROVEMENTS HWY 60 – HWY 60 – NORTH SIDE  
RUTHERFORD AVE. TO DENVER AVE.**

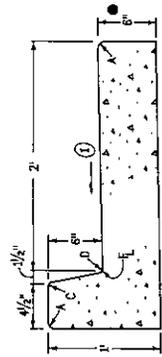
Name \_\_\_\_\_  
By \_\_\_\_\_  
Title \_\_\_\_\_

# **SPECIFICATIONS**

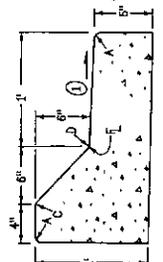
**(From Johnstown Public Improvements Design Criteria  
and Construction Regulations)**



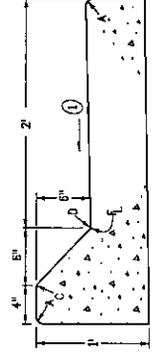
**CURB AND GUTTER TYPE 2  
(SECTION 1B)**  
(6 IN. BARRIER - 1 FT. GUTTER)



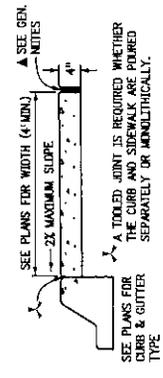
**CURB AND GUTTER TYPE 2  
(SECTION 1B)**  
(6 IN. BARRIER - 2 FT. GUTTER)



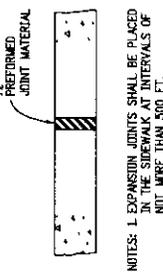
**CURB AND GUTTER TYPE 2  
(SECTION 1M)**  
(6 IN. MOUNTABLE - 1 FT. GUTTER)



**CURB AND GUTTER TYPE 2  
(SECTION 1M)**  
(6 IN. MOUNTABLE - 2 FT. GUTTER)



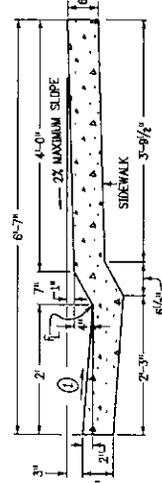
**CONCRETE SIDEWALK**



**SIDEWALK EXPANSION JOINT**



**GUTTER TYPE 2**



**CURB AND GUTTER TYPE 2  
(SECTION MS)**  
(4 IN. MOUNTABLE WITH SIDEWALK)

**GENERAL NOTES**

- ON ROADWAY CURVES WITH A RADIUS OF 1,000 FT. OR LESS, CURBS AND GUTTERS ARE TO BE PLACED ON THE ARC OF THE CURVE, UNLESS OTHERWISE NOTED ON THE PLANS. A MAXIMUM CHORD LENGTH OF 10 FT. MAY BE USED WHEN THE CURVE RADIUS IS GREATER THAN 1,000 FT.
- CONCRETE SHALL BE CLASS B.
- PROFILE GRADE OF CURBS AND GUTTERS SHALL BE LOCATED AT THE FLOW LINE.
- CURB TYPE 4 (KEY-WAY) MAY BE USED IN LIEU OF CURB AND GUTTER TYPE 2 (SECTIONS 1B AND 1M) UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- GUTTER CROSS SLOPES MAY BE ADJUSTED TO FACILITATE DRAINAGE FOR PROFILE GRADES AS SHOWN ON THE PLANS.
- THICKNESS OF CURB AND GUTTER SECTION SHALL MATCH CONCRETE PAVEMENT THICKNESS IF SHOWN ON THE PLANS. CURB AND GUTTER SHALL BE CLASS P CONCRETE IF PLACED MONOLITHICALLY WITH CONCRETE PAVEMENT.
- INCREASE SIDEWALK THICKNESS TO 6 IN. AT LOCATIONS SHOWN ON THE PLANS.
- MINIMUM SIDEWALK WIDTH IS 4 FT.

▲ EXPANSION JOINTS SHALL BE INSTALLED WHEN ABUTTING EXISTING CONCRETE OR FIXED STRUCTURE. EXPANSION JOINT MATERIAL SHALL BE 1/2 IN. THICK AND SHALL EXTEND THE FULL DEPTH OF CONTACT SURFACE.

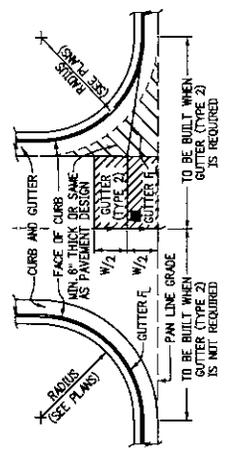
① GUTTER CROSS SLOPES SHALL BE 1/4 IN./FT. WHEN DRAINING AWAY FROM CURB AND 1 IN./FT. WHEN DRAINING TOWARD CURB (WITH EXCEPTION TO IMMEDIATELY ADJACENT TO CURB RAMP) - SEE STANDARD PLAN M-609-1 FOR SLOPE REQUIREMENTS.

● WHEN TIE BARS ARE REQUIRED, THE GUTTER THICKNESS SHALL BE INCREASED TO THE PAVEMENT THICKNESS. TIE BARS SHALL BE EPOXY-COATED #4 CONFORMING TO AASHTO M 284 AND SPACED AT 3 FT. INTERVALS. THEY SHALL BE INSERTED 1/2 AND 1/2 LENGTH INTO THE GUTTER.

THIS AREA SHALL BE POURED MONOLITHICALLY WITH CURB AND GUTTER (TYPE 2) IS NOT REQUIRED.

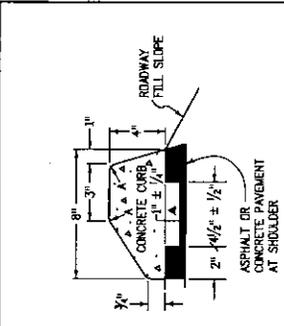
■ FLOW LINE LOCATION WILL BE ESTABLISHED BY 1/2 SHOWN ON PLANS.

LEGEND FOR RADII	
A	= 1/4" TO 1/2"
B	= 1/2"
C	= 1/2" TO 2"
D	= 1/2" TO 2"

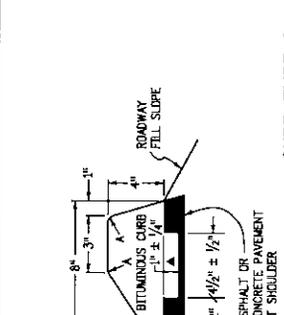


CONSTRUCTION OF CONCRETE GUTTERS AT INTERSECTION

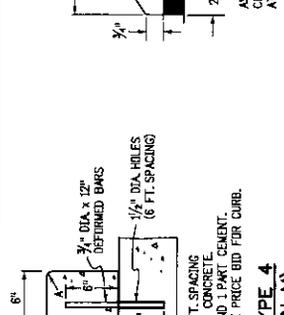
Computer File Information		Sheet Revisions		Colorado Department of Transportation		CURB, GUTTERS, AND SIDEWALKS		STANDARD PLAN NO.	
Creation Date:	07/04/12	Date:	07/25/12	4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9920		M-609-1		M-609-1	
Last Modification Date:	05/16/14	Comments:	Changed the bar spacing from 30" to 36".	Project Development Branch		DLM/LTA		Issued By: Project Development Branch on July 4, 2012	
Full Path:	www.colorado.net/business/designsupport		Revised gutter cross slope mark to include all items	Project Development Branch		DLM/LTA		Sheet No. 1 of 4	
Drawing File Name:	609010104.dgn			Project Development Branch		DLM/LTA		Sheet No. 1 of 4	
CAD Ver:	MicroStation V8	Scale:	Not to Scale	Project Development Branch		DLM/LTA		Sheet No. 1 of 4	



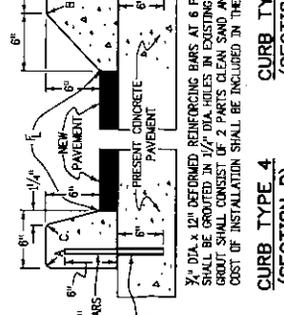
**CURB TYPE 2**  
(SECTION B)  
6 IN. BARRIER



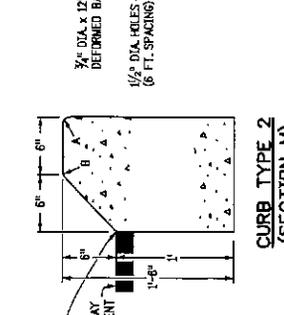
**CURB TYPE 2**  
(SECTION M)  
6 IN. MOUNTABLE



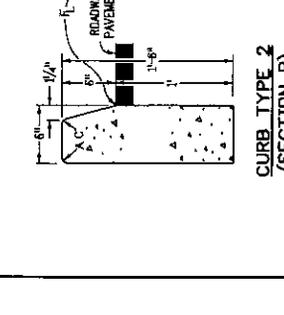
**CURB TYPE 4**  
(SECTION B)  
6 IN. BARRIER



**CURB TYPE 4**  
(SECTION M)  
6 IN. MOUNTABLE



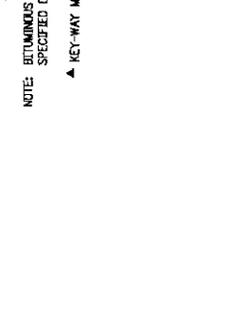
**CURB TYPE 6**  
(SECTION B)  
4 IN. MOUNTABLE



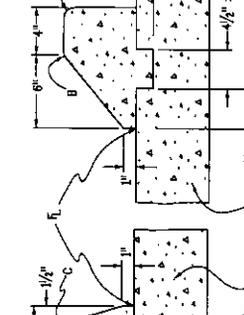
**CURB TYPE 6**  
(SECTION M)  
4 IN. MOUNTABLE



**CURB TYPE 4 (KEY-WAY)**  
(SECTION M)



**CURB TYPE 4 (KEY-WAY)**  
(SECTION B)



**CURB TYPE 4 (KEY-WAY)**  
(SECTION M)

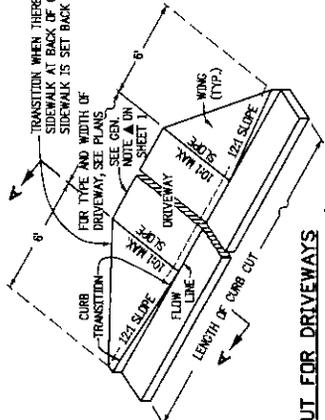


**CURB TYPE 4 (KEY-WAY)**  
(SECTION B)

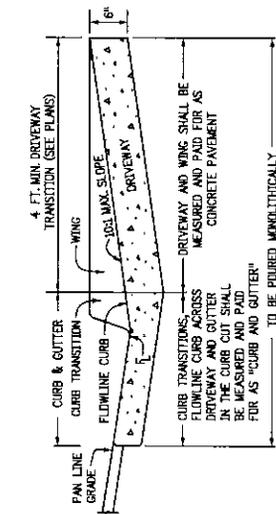
\* CONCRETE CLASS B SHALL CONTAIN 15 POUNDS PER CUBIC YARD OF APPROVED POLYPROPYLENE FIBERS AND MAY HAVE A MINIMAL AGGREGATE SIZE OF 3/8" IN.

LEGEND FOR RADII	
A	= 1/2" TO 1/4"
B	= 1"
C	= 1/2"
D	= 1/2" TO 2"

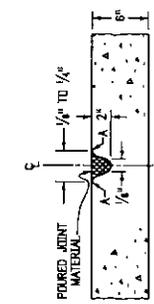
NOTE: BITUMINOUS OR CONCRETE\* UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
▲ KEY-WAY MAY BE OMITTED WHEN PLACED UNDER GUARDRAIL



**CURB CUT FOR DRIVEWAYS**  
(WITHOUT ATTACHED SIDEWALK)



**CURB CUT FOR DRIVEWAYS**  
(WITH ATTACHED SIDEWALK)



**TRANSVERSE CONTRACTION JOINT**  
FOR CONCRETE PAVEMENT (DRIVEWAYS)

NOTE: RECOMMENDED JOINT SPACING IS EVERY 8 FEET ALONG THE WIDTH AND LENGTH OF DRIVEWAYS. FOR DRIVEWAYS WIDER THAN 12 FEET, JOINTS ARE REQUIRED.

Computer File Information		Sheet Revisions	
Creation Date: 07/04/12	Initiator: DD	Date:	Comments
Last Modification Date: 07/04/12	Initiator: LTA		
Full Path: www.coloradodot.info/business/esignsupport			
Drawing File Name: 609010204.dgn			
CAO Ver.: MicroStation V8	Scale: Not to Scale		

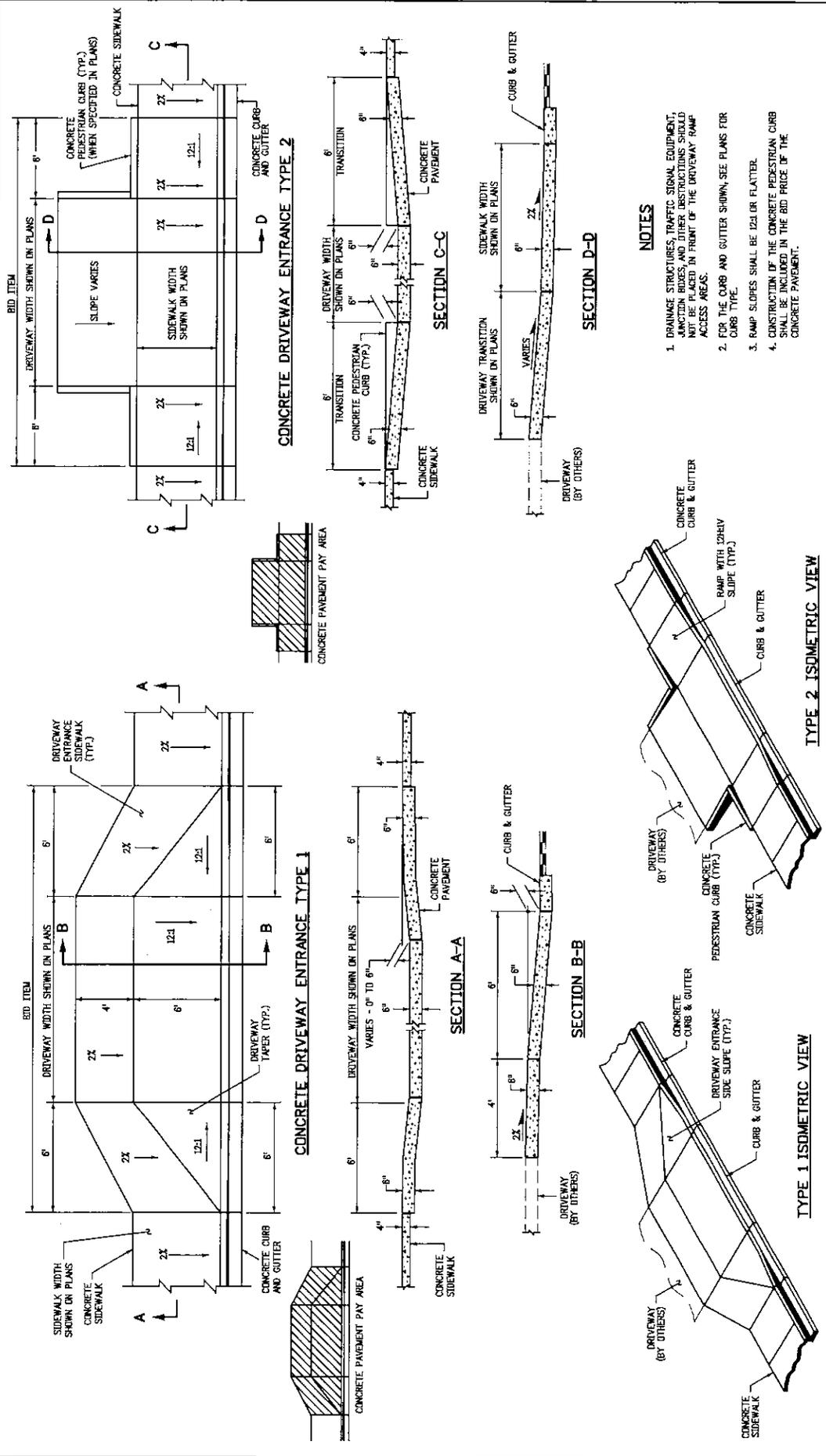
Colorado Department of Transportation		CONCRETE PAVEMENT (DRIVEWAYS)	
4201 East Arkansas Avenue	Denver, Colorado 80222	DD/LTA	DD/LTA
Phone: (303) 757-9083	Phone: (303) 757-9083		
Fax: (303) 757-9820	Fax: (303) 757-9820		

Project Development Branch		Standard Plan No.	
DD/LTA	DD/LTA	M-609-1	M-609-1

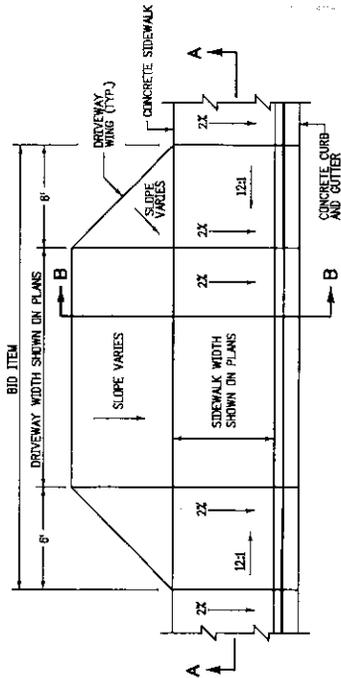
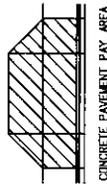
Issued By: Project Development Branch on July 4, 2012		Sheet No. 2 of 4	



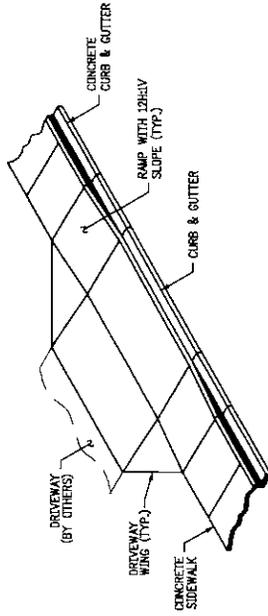
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Creation Date: 07/04/12	Initiate: DD	Date:	Comments	4201 East Arkansas Avenue		M-609-1		Sheet No. 3 of 4	
Last Modification Date: 07/04/12	Initiate: LTA			Denver, Colorado 80222					
Full Path: www.coloradotd.info/business/casignsupport				Phone: (303) 757-9083					
Drawing File Name: 609010304.dgn				Fax: (303) 757-9820					
CAD Ver.: MicroStation V8	Scale: Not to Scale	Unit: English		<b>Project Development Branch</b>		<b>DD/LTA</b>		Issued By: Project Development Branch on July 4, 2012	

**NOTES**

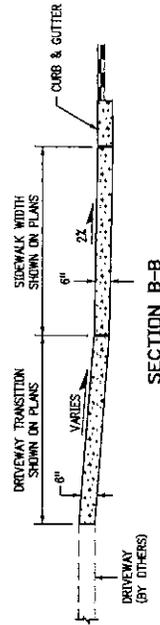
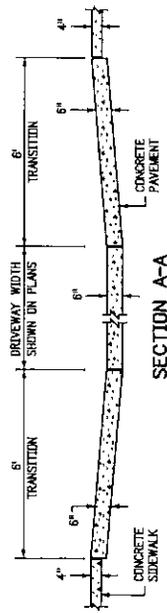
1. DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, JUNCTION BOXES, AND OTHER OBSTRUCTIONS SHOULD NOT BE PLACED IN FRONT OF THE DRIVEWAY RAMP ACCESS AREAS.
2. FOR THE CURB AND GUTTER SHOWN, SEE PLANS FOR CURB TYPE.
3. RAMP SLOPES SHALL BE 12:1 OR FLATTER.



**CONCRETE DRIVEWAY ENTRANCE TYPE 3**



**TYPE 3 ISOMETRIC VIEW**



<b>Computer File Information</b>		<b>Sheet Revisions</b>		Colorado Department of Transportation 4201 East Arkenoas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820	<b>CURB, GUTTERS, AND SIDEWALKS</b>  Issued By: Project Development Branch on July 4, 2012	STANDARD PLAN NO.  M-609-1
Creation Date: 07/04/12	Initiate: DD	Date:	Comments			
Last Modification Date: 07/04/12	Initiate: LTA	<input checked="" type="checkbox"/>		Project Development Branch DD/LTA	Sheet No. 4 of 4	
Full Path: www.coloradotd.info/business/designsupport		<input checked="" type="checkbox"/>				
Drawing File Name: 603010404.dwg		<input checked="" type="checkbox"/>				
CAD User: MicroStation V8	Scale: Not to Scale	Unit: English				

## **SECTION 02575**

### **PAVING REPAIR AND RESURFACING**

#### **PART 1 - GENERAL**

##### **1.1 Description**

- A. This section covers surface obstructions which CONTRACTOR removes and replaces such as pavement, drives, curbs, gutters, sidewalks, and similar surfaces as required to perform the Work.
1. CONTRACTOR has the option of protecting instead of removing and replacing obstructions that interfere with the Work.

##### **1.2 Quality Assurance**

- A. The words "Standard Specifications" as used herein refer to the State Department of Highways, Division of Highways, State of Colorado, "Standard Specifications for Road and Bridge Construction," adopted 1976.
1. Measurement and payment sections of "Standard Specifications" are not applicable to the Work.

#### **PART 2 - PRODUCTS**

##### **2.1 Materials**

- A. Soil Sterilizing Agent: Reference "Standard Specifications," Section 217.02.
- B. Aggregates for Base Course and Gravel Surface: Reference "Standard Specifications," Section 703.04, Grading "E."
- C. Aggregates for Pavement: Reference "Standard Specifications," Section 703.04, Grading, Class 6.
- D. Filler Material: Reference "Standard Specifications," Section 703.06 and AASHTO M17.
- E. Hydrated Lime: Reference "Standard Specifications," Section 712.03.
- F. Bituminous Materials: Reference "Standard Specifications," Section 702.
1. Asphalt Cement Penetration Grade of AC-10, AASHTO M226, 6.0% by weight of mix.
  2. Prime Coat Liquid Asphalt, MC -70, AASHTO M82.
  3. Tack Coat Emulsified Asphalt, CSS01, AASHTO M140.

- G. Concrete: Reference Section 03300, "Cast-In-Place Concrete."
- H. Premolded Expansion Joint Fillers: Reference AASHTO M213 (ASTM D1751), ½" thickness.

### **PART 3 - EXECUTION**

#### **3.1 Asphalt Concrete Including Base and Gravel Surfacing**

- A. Remove, dispose of and restore to original or better condition asphalt concrete pavement, curbs, drives, sidewalks and gravel surfacing.
  - 1. Remove pavement, drive or sidewalk to clean straight lines.
    - a. Saw cutting is required if a clean straight line cannot be obtained by other methods.
  - 2. Subgrade compaction - Reference Section 0221, "Trenching, Backfilling and Compaction."
  - 3. Soil Sterilization - Sterilize subgrade prior to construction of base course.
  - 4. Base Course - Construct in accordance with Section 02513 of Part II.
    - a. **Existing asphalt shall be milled 18' back from the vertical edge before patching operation commences to form a weather tight seal.**
    - b. Pavement and driveway base course - Restore to same thickness as existing, but in no case less than 6 inches.
    - c. Sidewalk base course - Restore to same thickness as existing, but in no case less than 4 inches.
  - 5. Primer Coat - Tack Coat - Apply prior to placement of asphalt concrete in accordance with Section 02513 of Appendix II.
  - 6. Asphalt concrete pavement, drives and sidewalks - restore to existing alignment, dimensions and grade.
    - a. Pavement and driveway - Restore to same thickness as existing, but in no case less than 2 inches.
    - b. Sidewalk - Restore to same thickness as existing but in no case less than 4 inches.
  - 7. Gravel Surfacing - Restore to existing alignment and grade.
    - a. Restore to same thickness as existing, but in no case less than 4 inches.
    - b. Perform grading necessary to provide a smooth roadway.

#### **3.2 Concrete Surfacing**

- A. Remove, dispose of and restore to original or better condition concrete drives, curbs, gutters, sidewalk and similar structures.
  - 1. Remove concrete to neatly sawed edges or to existing smooth joint lines.
    - a. Saw concrete to a minimum depth of 2 inches.
    - b. If saw cut would fall within 3 feet of construction joint, cold joint, expansion joint, or edge, remove concrete to the joint.
  - 2. Subgrade compaction - Reference Section 02221, "Trenching, Backfilling, and Compaction."

- B. Restore to existing alignment, dimensions and grade.
- C. Provide for a diameter lap if existing concrete that is removed contains reinforcing steel. New steel shall be of same diameter and of equal or better quality.
- D. Match existing expansion joints and contraction joints.
- E. Restore all surface improvements to the same thickness as existing, but in no case less than the following:
  - 1. Driveway and slab - 6 inches.
  - 2. Patio - 4 inches.
  - 3. Gutter - 6 inches measured at flowline.
  - 4. Concrete base for bricks - 6 inches.
  - 5. Sidewalk - 4 inches.
- F. Tool outside edges of sections and joints with a 1/4" radius edging tool.
  - 1. Replace W/S curb face marking as necessary.
- G. Curing:
  - 1. Cure faces exposed by form removal immediately after forms are removed.

END OF SECTION

## **SECTION 03300**

### **CAST-IN-PLACE CONCRETE**

#### **PART 1 - GENERAL**

##### **1.1 Description**

- A. This Section covers all cast-in-place concrete, including forms, reinforcing steel, finishing, curing and other appurtenant work for use with small projects such as vaults, headwalls, and utility encasements.

##### **1.2 Quality Assurance**

- A. Reference Standards:

1. Except as modified or supplemented in these Specifications, all structural concrete shall meet the requirements of the following standards. Refer to the standards for detailed requirements.
  - a. ACI 301 Specification for Structural Concrete for Buildings.
  - b. ACI 347 Recommended Practice for Concrete Formwork (Chapters 1 through 5).

- B. Mix Design:

1. Compressive Strength: 4000 psi at 28 days:
  - a. Minimum number of cylinders passing above requirement shall be 90%.
  - b. Minimum strength of cylinder acceptable, 2800 psi.
2. Cement Content: 6 bags per cubic yard, minimum.
3. Maximum permissible Water - cement ratio:
  - a. For 3500-psi strength, non air-entrained, absolute ratio by weight 0.58.
  - b. For 3500-psi strength, air-entrained, absolute ratio by weight 0.46.
4. Slump: 4 inch maximum.
5. Air Content: 5% ± 8% for concrete with exposed surfaces or subject to freezing and thawing; not required for other concrete. Low air content may be field adjusted at the Town's discretion.

##### **1.3 Product Delivery, Storage and Handling**

- A. Cement: Store in weather-tight enclosures and protect against dampness, contamination and warehouse set. Do not use cement that has become caked or lumpy.

- B. Aggregates:

1. Stock pile to prevent excessive segregation or contamination with other materials or other sizes of aggregates.
2. Use only one supply source for each aggregate stockpile.
3. Do not use the bottom 6 inches of aggregate piles in contact with the ground.

C. Admixtures:

1. Store to prevent contamination, evaporation, or damage.
2. Protect liquid admixtures from freezing or harmful temperature ranges.
3. Agitate emulsions prior to use.

D. Mixing and Transporting Ready-Mixed Concrete:

1. The maximum elapsed time from the time water is added to the mix until the concrete is in place shall not exceed 1½ hours when concrete is transported in revolving-drum truck bodies. This includes the time in which air packs are added.

E. Reinforcing Steel:

1. Deliver to site in bundles marked with metal tags indicating bar size and length.
2. Carefully handle and store on supports, which will keep the steel from coming in contact with the ground.
3. Remove all mud, oil, loose rust or mill scale and other foreign materials prior to placing concrete.
4. Rust or mill scale which is "tight" will be permissible without cleaning or brushing, provided weights, dimensions, cross sectional area, and tensile properties meet the requirements of ASTM A615.

**1.4 Job Conditions**

A. Environmental Requirements:

1. Do not place concrete during rain, sleet or snow unless adequate protection is provided.
2. Do not allow rainwater to increase the mixing water or damage the surface finish.

B. Cold Weather Concreting:

1. Conformance: ACI 306, "Recommended Practice for Cold Weather Concreting."
2. Temperature of concrete when placed shall not be less than the following:

Minimum Concrete Temp. °F Air Temp. Sections with Least Dimension		
°F	Under 12"	12" and Over
30 to 45	60	50
0 to 30	65	55
Below 0	70	60

3. When placed, heated concrete shall not be warmer than 80°F.
4. Prior to placing concrete, all ice, snow, surface and subsurface frost shall be removed, and the temperature of the surfaces to be in contact with the new concrete shall be raised above 35° F.
5. Protect concrete during specified curing period.
6. Heated enclosures shall be strong and windproof to insure adequate protection of corners, edges and thin sections.
7. Do not permit heating units to locally heat or dry the concrete.
8. Do not use combustion heaters during the first 24 hours unless the concrete is protected from exposure to exhaust gases, which contain carbon dioxide.

C. Hot Weather Concreting:

1. Conformance: ACI 305 "Recommended Practice for Hot Weather Concreting."
2. Take precautions when the ambient air temperature is 90°F or above.
3. Temperature of concrete when placed shall not exceed 85°F.
4. Cool forms and reinforcing to a maximum of 90°F by spraying with water prior to placing concrete.
5. Do not use cement that has reached a temperature of 170°F or more.
6. Prevent plastic shrinkage cracking due to rapid evaporation of moisture.
7. Do not place concrete when the evaporation rate (actual or anticipated) equals or exceeds 0.20 pounds per square foot per hour, as determined by Figure 2.1.4 of ACI 305.
8. Approved set retarding and water reducing admixtures may be used when ambient air temperature is 90°F or above to offset the accelerating effects of high temperature.

## **PART 2 - PRODUCTS**

### **2.1 Concrete Materials**

- A. Cement: ASTM C150, Type I.
- B. Aggregates:
  1. Fine aggregate - ASTM C33.
  2. Coarse aggregate - ASTM C33 except air-cooled blast furnace slag is acceptable.
    - a. Nominal maximum size - as permitted by ACI 318.
- C. Water: Clean and fresh.
- D. Air-Entraining Agent: ASTM C260.
- E. Ready-Mixed Concrete: Mixed and delivered, ASTM C94.
- F. Batching and Mixing Equipment: ACI 304, "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete."

## **2.2 Form Materials**

- A. Forms:
  - 1. Plywood - PSI, waterproof, resin-bonded, exterior type, Douglas fir.
  - 2. Lumber - straight, uniform width and thickness, free from knots, offsets, holes, dents and other surface defects.
  - 3. Designed to produce hardened concrete having the shape, lines and dimensions shown on the Drawings.
  
- B. Form Oil:
  - 1. Light colored paraffin oil, or other non-staining material. For exposed surfaces not in contact with earth backfill, acceptable chemical release agents are Protex Industries, "Pro-Cote," Symons Corp., "Magic Kote," L & M, "Debond," or equal.
  
- C. Form Ties:
  - 1. Commercially manufactured permanently embedded type with removable ends for all exposed surfaces.
  - 2. Permanently embedded portion shall terminate not less than one inch from the face of the concrete.

## **2.3 Reinforcing Materials**

- A. Bars: ASTM A615, Grade 60 unless specified otherwise.
- B. Welded Wire Fabric: ASTM A185 or A497.
- C. Fabrication ACI 315 and 318 unless shown otherwise on Drawings.

## **2.4 Non-Shrink Grout**

- A. Ferrolith G.D.S. grout by Sonneborn Building Products, Inc., Embecco Grout by Master Builders Co., Vibrofoil by W.R. Grace Co., Construction Materials Division, or equal.

## **2.5 Curing and Sealing Compounds**

- A. ASTM C309, Type 1, Class B.
- B. Use Protec "Triple Seal," Symons Corp., "Cure and Seal," or equal.

## **PART 3 - EXECUTION**

### **3.1 Erection of Forms**

- A. Brace or tie to maintain desired position, shape and alignment before, during and after concrete placement.

- B. Construct forms for beams and slabs supported by concrete columns so the column forms can be removed without disturbing the beam or slab supports.
- C. Provide temporary openings at the bottom of columns and wall forms and at other locations where necessary to facilitate cleaning and inspection.
- D. Where concrete is placed against rock, remove loose pieces of rock and clean the exposed surface with a high-pressure air hose.
- E. Place Chamfer strips in forms to bevel salient edges and concrete corners of exposed surfaces except the top edges of walls and slabs that are to be tooled. Unless otherwise noted on the Drawings, bevels shall be  $\frac{3}{4}$  inch wide.
- F. Remove mortar or grout from previous concrete and other foreign material from the surfaces. Coat form surfaces with approved coating material before either the reinforcing steel or concrete is placed.
- G. Do not allow form coating to:
  - 1. Stand in puddles in the forms.
  - 2. Come in contact with the reinforcing steel.
  - 3. Come in contact with hardened concrete against which fresh concrete is placed.

### **3.2 Removal of Forms**

- A. Do not remove or disturb forms until the concrete has attained sufficient strength to safely support all dead and live loads.
- B. Remove forms with care to avoid surface gouging, corner or edge breakage, and other damage to the concrete.

### **3.3 Reinforcing**

- A. Installation:
  - 1. Accurately place reinforcing bars and maintain in proper position while concrete is being placed and compacted. Reinforcing bars that are rusty, dirty or oily shall not be used.
- B. Bar Supports:
  - 1. Provide minimum number of supports as required by ACI 315.
  - 2. Do not use pebbles, pieces of broken stone, common or face brick, metal pipe or wood blocks to support reinforcement.
  - 3. On ground, where necessary, supporting solid concrete bricks may be used. Use one-half concrete bricks whenever possible.
  - 4. Use metal, plastic or approved bar chairs, bolsters and spacers over form surface.
  - 5. Where the concrete surface will be exposed to the weather in the finished structure the portions of all accessories within  $\frac{1}{2}$  inch of the concrete surface shall be non-corrosive or protected against corrosion.

### **3.4 Concrete Placement**

#### A. Conveying:

1. Convey to the point of final deposit by methods that will prevent the separation or loss of ingredients.
2. During and immediately after placement, concrete shall be thoroughly compacted, worked around reinforcements and embedments, and worked into all corners of the forms.

### **3.5 Expansion and Contraction Joints**

#### A. Installation:

1. Formed where shown on the Drawings. (See storm detail).
2. Install expansion joints, fillers and waterstops as detailed on the Drawings or in accordance with manufacturer's instructions, in no case less than 400' and at all PCR's.
3. Do not extend reinforcement through expansion joints, except where specifically noted or detailed on the Drawings.

### **3.6 Construction Joints**

#### A. Location:

1. Formed where shown on the Drawings.
2. Construct in one continuous concrete placing operation all concrete included between construction joints.
3. Obtain Engineer's approval for location of additional construction joints desired.

### **3.7 Finishing Formed Surfaces**

#### A. Rough Form Finish:

1. Rough form finish is unacceptable for surfaces. A smooth finish is required on all cast-in-place or pre-cast, whether it is exposed or not.
2. Patch tie holes with mortar.
3. Repair defects.
4. Smooth form finish is acceptable alternative.

#### B. Smooth Form Finish:

1. Provide smooth form finish for surfaces not specified to have grout cleaned finish.
2. Use form facing to produce a smooth, hard, uniform surface.
3. Keep number of seams to a minimum.
4. Patch all tie holes with mortar.
5. Remove all fins.
6. Repair all defects.

C. Grout Cleaned finish:

1. Provide grout cleaned finish for surfaces so designated on the Drawings and the following surfaces:
2. Complete operations for smooth form finish.
3. Wet surface and apply grout mix of 1 part Portland Cement and 1½ parts of fine sand.
4. Substitute white Portland Cement for gray as required to match surrounding concrete.
5. Rub surface with cork float or stone to fill air bubbles and holes.
6. Remove excess grout by rubbing with a rubber float, sack or other means.
7. Do not begin cleaning until all contiguous surfaces are completed and accessible.

**3.8 Finishing Unformed Surfaces**

A. Slabs, Pavements, Sidewalks, Driveways, Curb and Gutters and Similar Structures:

1. Screen and give an initial float finish as soon as concrete has stiffened sufficiently for proper working.
2. Remove coarse aggregates disturbed by the initial floating or which cause a surface irregularity and replace with mortar.
3. Initial floating shall produce a surface of uniform texture and appearance.
4. Follow with a second floating at the time of initial set. This floating shall produce a finish of uniform texture and color.
5. In areas where concrete is to remain exposed, follow the second floating with a broomed treatment to the surface to provide a uniform abrasive texture of constant color, except where steel trowel surface is indicated.

**3.9 Defective Concrete**

- A. Repair in accordance with ACE 301, Chapter 9.

**3.10 Curing**

A. Keep concrete continuously moist for at least 7 days after placement by use of:

1. Ponding or continuous sprinkling.
2. Wet burlap, wet absorptive mats, or wet sand.
3. Waterproof sheets.
4. Polyethylene film.
5. Membrane curing compound.
  - a. Do not use membrane-curing compounds when the surface is to be painted or other material is to be bonded to the surface.

B. Maintain concrete within 50° to 70° F range during curing.

C. Apply curing and sealing compounds in accordance with manufacturer's instructions.

### **3.11 Field Quality Control**

#### A. Test Cylinders:

1. Make a set of test cylinders (four 4"x8" or four 6"x12") for each 100 cubic yards placed or portion thereof. More frequent testing may be required where more than one class of concrete is being used.
2. Deliver test cylinders to testing laboratory.
3. Comply with ASTM C912.

END OF SECTION