



Public Works Commission Agenda

Gio DiDomenico, Chair
Mike White, Vice Chair
Greg Meyers
Brad Patton
Kevin Raasch
Katheryn Wille
Joel Wood

Monday, March 6, 2023

5:30 PM

**Castle Rock Service Center
4175 N. Castleton Court
Castle Rock, CO 80104**

This meeting is open to the public. Please note that all times indicated on the agenda are approximate and interested parties are encouraged to be present earlier than the posted time. Three or more Council members may also attend this meeting, during which the items listed herein will be discussed.

5:00 P.M. Dinner and Informal Discussion

5:30 P.M. Call To Order

5:35 P.M. Public Comment on Items Not on the Agenda

5:40 P.M. Action Items

PWC February 6, 2023 Public Works Commission Meeting Minutes
2023-008

Attachments: Meeting Minutes February 5, 2023

PWC An Ordinance Amending the Castle Rock Municipal Code for:
2023-009 · CRMC 15.42.010 Update of the Transportation Criteria Manual
· CRMC 17.42.080 - Revision of the Downtown Overlay District
Regarding Downtown Sidewalk Widths

Attachments: Ordinance
Attachment A: Draft TDCM - Revisions Highlighted
Attachment B: Draft TDCM

PWC A Resolution Approving a Service Agreement Between the Town of
2023-010 Castle Rock and Colorado Barricade for 2023 Pavement Marking
Maintenance

Attachments: Contract
Attachment A: 2023 Pavement Marking Maintenance Map

PWC Award of Contracts for the 2023 Pavement Maintenance Program and
2023-011 Capital Projects

Attachments: Attachment A: 2023 PMP Project Map
Attachment B: 2023 PMP Project Bid Proposal Summary

PWC
2023-012 Resolution approving a Construction Contract for the 2023 Slurry Seal Project

Attachments:

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

PWC
2023-013 Resolution approving a Construction Contract for the 2023 PMP Asphalt Overlay Project

Attachments:

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

PWC
2023-014 Resolution Approving a Construction Contract for the 2023 Full Depth Reclamation Project

Attachments:

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

PWC
2023-015 Resolution approving a Construction Contract for the 2023 Curb, Gutter & Sidewalk Replacement Project

Attachments:

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

PWC
2023-016 Resolution Approving a Construction Contract for the 2023 Town Facility Parking Lot Improvements Project

Attachments:

Contract

Attachment A: 2023 Project Site Maps

Attachment B: 2023 PMP Project Bid Proposal Summary

PWC
2023-017 Resolution Authorizing the Town Manager and Finance Director to Reallocate Approved Funds for the Pavement Maintenance Program, and the Street Reconstruction Program

Attachments:

Attachment A: Table 1

PWC
2023-018 Resolution Approving a Variance Pursuant to Chapter 9.16.070.E of the Castle Rock Municipal Code for Night Time Construction Activities Related to the 2023 Pavement Maintenance Program, 2023 Town Facility Parking Lot Improvement Program, and 2023 Capital Improvement Program Projects

Attachments:

Attachment A: Location Maps

6:30 P.M. Informational / Discussion Items

PWC Project Updates
2023-019

Attachments: January Monthly Report

6:35 P.M. Town Council Liasion Comments

6:40 P.M. Commissioner Comments / Questions

7:00 P.M. Adjourn



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: **File #:** PWC 2023-008

To: Members of the Public Works Commission

From: Monica Cammalleri , Town Liaison

February 6, 2023 Public Works Commission Meeting Minutes

Executive Summary

Attached are the meeting minutes from the February 6, 2023 Public Works Commission meeting for your review and approval.



Public Works Commission Meeting Minutes - Draft

Gio DiDomenico, Chair
Mike White, Vice Chair
Greg Meyers
Brad Patton
Kevin Raasch
Katheryn Wille
Joel Wood

Monday, February 6, 2023

5:30 PM

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4175 N. Castleton Court
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Dinner and Informal Discussion

Call To Order

- Present** 7 - Commissioner Kevin Raasch, Vice Chair Mike White, Commissioner Joel Wood, Commissioner Katheryn Wille, Commissioner Brad Patton, Chair Gio DiDomenico, and Commissioner Greg Meyers
- Attendance** 6 - Ryan Hollingshead, Dan Sailer, Ryan Germeroth, Brian Kelley, Thomas Reiff, and Monica Cammalleri

Public Comment on Items Not on the Agenda

Mike White as a member of the public wanted to discuss the issues about the snow plowing for the Town.

Dan Sailer, Public Works Director went over the snow plow policy on the residential streets and mentioned a policy adjustment for the future.

Action Items

[PWC 2023-001](#) December 5, 2022 Public Works Commission Meeting Minutes

A motion made by Commissioner White and seconded by Commissioner Raasch to approve the minutes from December 5, 2022. Motion passed 7-0.

[PWC 2023-002](#) Resolution Approving a Service Agreement with Alfred Benesch & Company for Construction Administration Assistance and Inspection Services on the Crystal Valley Interchange Project

To award a service agreement to Alfred Benesch & Company (Benesch) to provide construction administration and inspection services for the Crystal Valley Interchange (CVI) Project. The proposed scope of work within this recommended service agreement includes full time construction inspection and construction management. The utilization of these services will help ensure construction of CVI is in accordance with contract documents and Federal regulations and will in turn be crucial for the delivery of this new asset to Town of Castle Rock residents and stakeholders.

The following questions were asked by the Commission:

1. Define certified payroll?
 - a. Certified payroll reports confirm that contractors and subcontractors working on federally-funded projects are paying their employees prevailing wages in accordance with the Davis-Bacon and Related Acts.
2. Is it a requirement of the Town?
 - a. It is not required on Town funded and Town projects within Town ROW. It is required by CDOT & FHWA and federal grants.
3. Did we go out for Bid?
 - a. Yes, We posted a Request for Proposals (RFP) on BidNet.
4. What is more cost efficient, bidding out or bringing it in house?
 - a. Contracting is for short term, limited and specialized work, so bidding out is more efficient based on several factors.
 - ☐ Projects requires specific expertise that is not available in house
 - o Many specialties are unavailable except through contract
 - o Town staff are typically generalists by nature and not subject matter experts in the specialty needed
 - ☐ Bringing in an expert to Town staff less efficient when a short period of needed use is concerned
 - o Continued use of the expert/specialist position is not guaranteed
 - o Projects are typically short term in duration
 - ☐ While and in house staff member could perform certain functions for a project, and the work could be done satisfactorily, this is not an efficient or sustainable method of use of Town staff. Further, by hiring specialist for Town staff positions makes it extremely difficult to fill a position vacancy due to a limited talent pool for the particular specialty, competitive pay, and other factors.
5. Is Benesch going to handle the railroad?
 - a. Benesch will be involved in inspections and reports required by the BNSF during construction. The design team will acquire all permits from the BNSF.

A motion made by Commissioner Raach and seconded by Commissioner DiDomenico to approve the Resolution Approving a Service Agreement with Alfred Benesch & Company for Construction Administration Assistance and Inspection Services on the Crystal Valley Interchange Project. Motion passed 7-0.

Yes: 7 - Commissioner Raasch, Vice Chair White, Commissioner Wood, Commissioner Wille, Commissioner Patton, Chair DiDomenico, and Commissioner Meyers

[PWC 2023-003](#) Resolution Approving a Purchase Agreement with Wagner Equipment for (2) 2023 938 Wheeled Loaders

Requesting approval of expenditure of funds to purchase (2) Caterpillar 938M Wheeled Loaders. One loader is replacing (1) 2008 Caterpillar 930H Wheeled Loader for Castle Rock Water. The second loader is replacing (1) 2002 Volvo L90D for Public Works. Both units being replaced have reached or exceeded the end of their useful lifecycles and have met all the requirements for replacement as outlined in the vehicle replacement policy.

This request is fully funded through contributions to the Fleet Replacement Fund. We are seeking Council approval to move forward with the purchase order.

The following questions were asked by the Commission:

1. Will there be a trade in option?
 - a. No - At the end of the year the vehicles will go to auction which will include the Streets Loader. Castle Rock Water has decided to keep their Loader due to service level needs.
2. How quickly can they deliver the product?
 - a. They will be delivered in May 2023
3. Why do we have to go to Town Council if it's already in the budget?
 - a. The Town Purchasing Policy requires any purchase of \$250,000 has to go to Town Council.
4. Can we lock in prices?
 - a. The price was locked in 2022. Wagner had a 6% increase in January that we saved.

A motion made by Commissioner White and seconded by Commissioner Wood to approve the Resolution Approving a Purchase Agreement with Wagner Equipment for (2) 2023 938 Wheeled Loaders. Motion passed 7-0.

Yes: 7 - Commissioner Raasch, Vice Chair White, Commissioner Wood, Commissioner Wille, Commissioner Patton, Chair DiDomenico, and Commissioner Meyers

[PWC 2023-004](#) Discussion and Direction - Neighborhood Traffic Calming Program Amendments

The Neighborhood Traffic Calming Program is a neighborhood resident driven program that has been in place since 2007 with one revision in 2015. The purpose of the Program is to provide residents and staff a consistent, feasible, and manageable procedure for addressing neighborhood traffic concerns on residential streets where documented speeding problems or other traffic factors exist that may adversely affect the overall residential quality of life.

The following questions were asked by the Commission:

1. Is there public input when adding a speed hump in a neighborhood? Or is it decided by Public Works and Town Council only?
 - a. Traffic calming devices installed as part of the traffic calming program are neighborhood driven and any mitigation measure, such as a speed hump will involve public input.
2. How did Gilbert Street get determined for traffic Calming?
 - a. The neighborhood requested something be done through the speed mitigation process, which identified it as a safety issue.
3. How many request per year for residential vs collector streets?
 - a. Residential streets are the majority of requests, only a few residential collectors are requested on occasion - I would estimate at a 5 to 1 ratio.

4. Could there be separate funding for residential streets vs collector streets that are approved by council?
 - a. This would require a separate budget item approved by Council, or collectors could be included in one Town's safety funds if its determined to be a safety issue.
5. How does the Town pick which gets the funding first? (residential or collector)
 - a. Because funding requests or traffic calming projects have been few over the years, this issue has been funded on a first come first serve basis.
6. What is the back story for this calming amendment?
 - a. There have been some interested neighborhoods that want to install traffic calming, but do not meet the minimum qualifications for the program. This amendment would give neighborhoods an opportunity to fund and install traffic calming on their own even if they don't qualify. The Town would still need to approve of the plan and devices on the street.

A motion made by Commissioner Patton and seconded by Commissioner Wood to approve the forward a recommendation that the NTCP be modified as discussed:

Potential Amendments to the NTCP;

*** Collector Road Eligibility - modify to include residential collector streets even if they do not have homes fronting the street or driveways directly accessing the street (Council approves plan and funding, if necessary)**

*** Neighborhood / {{(HOA Funding Option (REMOVED))} - Allow neighborhoods that don't meet the program criteria to privately fund improvements {{only if the surrounding neighborhood supports the installation (REMOVED)}} and follows the existing process and approval as defined in the current program. The Town also has to approve the plan.**

Motion passed 7-0.

Yes: 7 - Commissioner Raasch, Vice Chair White, Commissioner Wood, Commissioner Wille, Commissioner Patton, Chair DiDomenico, and Commissioner Meyers

[PWC 2023-005](#)

Discussion and Direction - Knobcone Drive Neighborhood Traffic Calming Request

In early November 2022 a letter was presented to the Town requesting speed humps on Knobcone Drive. This street has previously been assessed for the same request as part of the Town's Neighborhood Traffic Calming Program and did not meet criteria. Since the Town has a formal program approved by Town Council, and this request is being made outside of this program, this request must be acted on by Town Council. The purpose of this item is to report factual findings for consideration and request the Public Works Commission provide a formal recommendation to Town Council on this matter.

The following question was asked by the Commission

1. What does it cost for the Town to put in speed humps compared to a

contractor?

- a. It would cost the contractor, \$25,000 to \$30,000 to construct. - It would cost the Town, time and other resources permitting, about \$12,000 as directed by Council.

A motion made by Commissioner White and seconded by Commissioner DiDomenico to recommend that Town Council deny the request to install speed humps. Motion passed 7-0.

Yes: 7 - Commissioner Raasch, Vice Chair White, Commissioner Wood, Commissioner Wille, Commissioner Patton, Chair DiDomenico, and Commissioner Meyers

PWC 2023-006 Discussion and Direction - Permit Parking Program

In early November 2022 Town Council directed staff to review options for a Parking Permit Program and report back on our findings and options for developing a new program. Staff reviewed twenty-two jurisdictions along the Front Range for information regarding parking permit programs. Since the Town has no formal permit parking program approved at this time, any new program or change to municipal code would need to be acted on by Town Council. The purpose of this item is for staff to share information regarding other jurisdiction's programs for the Town's consideration and request the Public Works Commission provide input to Town Council on this matter

The following questions were asked by the Commission:

Parking Permit Program

1. Where are people coming from this?
 - a. Castlevue High and Douglas County High School, by the MAC and Plum Creek Parkway - Not only events but apartments are charging for parking so residents from there are parking on the street.
2. Does the Town have authority to tow and give out tickets?
 - a. The Town has the authority to ticket violations based on the adopted Model Traffic Code. We don't currently have Town managed towing capability.
3. How will this permit fees be tracked?
 - a. This would need to be determined as the policy is developed.
4. What defines a neighborhood for the permit program?
 - a. We used our research of other jurisdictions to define a neighborhood as, few as 10 homes, or neighborhood block. An area of impact to an initiated parking permit areas to surrounding roadways would need to be considered with each instance.
5. Does this program have a chance to generate revenue?
 - a. This is not intended to be a revenue generating program, rather a neighborhood quality of life program.

A motion made by Commissioner Wood and seconded by Commissioner White to recommend that Town Council direct staff to develop a formal Parking Permit program for future Town Council adoption. Motion passed 7-0.

Yes: 7 - Commissioner Raasch, Vice Chair White, Commissioner Wood, Commissioner Wille, Commissioner Patton, Chair DiDomenico, and Commissioner Meyers

Informational / Discussion Items

[PWC 2023-007](#) Project Updates

Town Council Liaison Comments

Commissioner Comments / Questions

Councilperson Hollingshead updated the Commission staff of Council items.

Adjourn

There being no further business, the meeting was adjourned at 8:16 p.m.



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: **File #:** PWC 2023-009

To: Members of the Public Works Commission

From: Ryan Germeroth, PE, Assistant Director of Castle Rock Public Works

An Ordinance Amending the Castle Rock Municipal Code for:

- **CRMC 15.42.010 Update of the Transportation Criteria Manual**
 - **CRMC 17.42.080 - Revision of the Downtown Overlay District Regarding Downtown Sidewalk Widths**
-

Executive Summary

CRMC 15.42.010 Update of the Transportation Criteria Manual

The Transportation Design Criteria Manual (TDCM) is the primary resource used by the development community and Town staff for the design and review of the Town's public transportation infrastructure. The current version of the TDCM was adopted in 2018. In the past 4 years, multiple events have occurred or evolved that necessitate the update to the TDCM. The proposed TDCM update will provide new criteria for Subsurface Utility Engineering, Pavement Design, Downtown area specific regulations, and Wireless Communication Facilities. The draft ordinance to amend the Town's Municipal Code is attached to this memo.

CRMC 17.42.080 - Revision of the Downtown Overlay District

The proposed TDCM has updated criteria for sidewalk widths in the Downtown Overlay District. The sidewalk width standard per the zoning overlay is 8 feet wide. The TDCM proposes sidewalk widths consistent with the Downtown Mobility Master Plan that was adopted in 2019. The draft ordinance to amend the Town's Municipal Code is attached to this memo.

Discussion

CRMC 15.42.010 Update of the Transportation Criteria Manual

Town staff routinely reviews the criteria manuals to ensure they are consistent with the latest state, federal, and industry standards. The purpose of this is not only to stay compliant with any new legislation, but to provide transportation criteria that is keeping pace with stakeholders' needs.

In the past 4 years, multiple events have occurred or evolved that have necessitated the update to the TDCM. The significant changes to the TDCM are as follows:

Downtown Criteria: The criteria added to the TDCM is consistent with the Downtown Mobility Master Plan that was approved in 2019. The typical new development standards do not apply very well to the Downtown area. The additions to the TDCM primarily address sidewalk widths, street lighting and pedestrian lighting for Downtown. The area defined for the Downtown criteria is consistent with the Downtown Overlay District as defined in the Municipal Code. Essentially, Downtown sidewalks may be 8 feet wide when they are detached from the street curb by a landscape area. When Downtown sidewalks are attached to the street curb, they are required to be a minimum of 10 feet wide. These standards apply to all redevelopment within the defined Downtown area as determined by the Town with respect to scale, surrounding development patterns, and right-of-way availability. These standards shall not apply to tenant finish permits or architectural façade revisions or where available width for the sidewalk is constrained by existing buildings, structures, mature desirable trees or comparable features. The draft ordinance to amend the Town's Municipal Code is attached to this memo.

Rectangular Rapid Flashing Beacon Devices: Design criteria is proposed for pedestrian-actuated flashing beacons for street crossings.

Subsurface Utility Engineering Criteria: Colorado has passed laws that require utility investigation at the design stage when the proposed work requires excavation and meets certain criteria. The proposed TDCM language specifies the plan submittal requirements for new designs that may potentially be in conflict with existing buried utilities and infrastructure.

Pavement Design Criteria: Town staff are proposing to adopt the Metropolitan Government Pavement Engineers Council (MGPEC) Pavement Design Standards with some exceptions/additions identified in the TDCM text. The benefits of adopting the MGPEC specifications include having a broader body of expertise and usage in developing and maintaining the specifications, having a standard format recognized by the road building industry, and having a set of specifications that focus on construction of low volume roads including subdivisions. Members of MGPEC include: Arapahoe County; City of Arvada; City of Aurora; Boulder County; City of Castle Pines; City of Cherry Hills Village; City and County of Denver; Douglas County; City of Federal Heights; City of Fort Morgan; Grand County; City of Littleton; City of Longmont; Town of Parker; City of Thornton; City of Westminster; City of Wheat Ridge

Wireless Communication Facilities: The Town has begun receiving submittals for Small Cell Sites. These are primarily small cell towers/streetlights that will be located in the Town right-of-way. The additions to the TDCM specifically address the criteria for these types of installations.

In addition to the significant changes, Town staff have also made lesser additions and deletions to the 2018 manual. These changes are primarily to criteria in areas like sidewalk design, curb ramp design, drainage features, sight distance, horizontal / vertical curves, traffic signal / lighting design, sign / marking changes, traffic impact analysis criteria, bike facility design, an update to the variance approval process, and updated definitions. The minor changes and the significant revisions are highlighted in the attached draft "TDCM with Proposed Revisions" **Attachment A**. The version of the TDCM for adoption can be found in **Attachment B**.

CRMC 17.42.080 - Revision of the Downtown Overlay District

The proposed TDCM has updated criteria for sidewalk widths located in the Downtown Overlay District. The current sidewalk width standard per the zoning overlay is 8 feet wide. The TDCM proposes sidewalk widths consistent with the Downtown Mobility Master Plan that was adopted in 2019. The proposed code revision will direct users to the TDCM, instead of specifying a specific width.

Notification and Outreach

The TDCM was last updated in 2018. Since that time, staff has been documenting questions and comments from internal and external stakeholders for consideration of inclusion in the TDCM update. The comments were vetted in multiple meetings with Public Works, CR Water, and Development Services staff, checked against the latest standards, and compared to accepted practices in other jurisdictions.

In addition, in September 2022, Town Staff electronically mailed the proposed TDCM revisions to approximately 650 stakeholders of the Town, consisting of developers and engineering consultants. Economic Development Council member, Douglas County, neighboring jurisdictions and asphalt industry professionals were also sent the notification.

The review period for providing comments concluded October 12th, 2022. Town staff received 3 external responses, listed below:

- 1) Regarding the proposed Subsurface Utility Engineering criteria: An engineering representative stated (paraphrased): *It looks like the requirements all follow ASCE standards and abide by the state law. This is exciting news and I expect many other Colorado cities and counties to follow suit as the ASCE has updated their SUE standards this year to hold all entities accountable with regards to abiding by the Colorado law.*
- 2) Regarding the elimination of stormwater inlets for standard medians: An engineering representative stated: *I like that the catch curb & storm inlets on median islands was removed.*
- 3) Regarding streetlights specifications: Core Electric provided new specifications for Town street lights.

On November 10th, 2022, Town staff attended the Alliance Meeting for the Downtown Development Authority-Downtown Merchants Association meeting to specifically discuss the proposed revisions to the Downtown sidewalk criteria. The Alliance was supportive of the proposed revisions, although the group was interested in the TDCM criteria address situations where increasing the sidewalk width is not practicable due to physical constraints like buildings, structures or mature desirable trees. The Town accommodated these concerns in the criteria text by stating the new criteria is not applicable in these certain constrained situations.

In December 2022, Town Staff electronically mailed a revised TDCM draft that included revisions resulting from the September outreach, internal staff comments and the DDA-DMA Alliance comments to the approximately 650 stakeholders of the Town, consisting of developers, engineering consultants. The review period for providing comments concluded January 10, 2023. Town staff did not receive any external comments.

Budget Impact

There is not direct impact to the Town's budget. It is anticipated that the MGPEC Pavement Design Criteria will result in street paving with a lower life cycle cost which could be a significant savings for the pavement maintenance program.

Staff Recommendation

Staff recommends that the Commission recommend that Town Council approve:

- 1) CRMC 15.42.010 - Update of the Transportation Design Criteria Manual
- 2) CRMC 17.42.080 - Revision of the Downtown Overlay District

Proposed Motion

"I move to recommend Town Council approve the Ordinance as introduced by title"

"I move to recommend Town Council approve the Ordinance as introduced by title, with the following conditions:
(list conditions)"

"I move to continue this item to the Public Works Commission meeting on (date) to allow additional time to (List information needed)"

Attachments

Ordinance

Attachment A: Draft TDCM - Revisions Highlighted

Attachment B: Final Draft TDCM for adoption

ORDINANCE NO. 2023-

**AN ORDINANCE AMENDING SECTIONS 15.42.010 AND 17.42.080.B.8 OF THE
CASTLE ROCK MUNICIPAL CODE**

WHEREAS, the Town of Castle Rock (“Town”) is a home rule municipality and the Town Council is empowered to adopt such ordinances as are necessary and convenient to protect the health, safety and welfare of the community; and

WHEREAS, the Town Council has determined the necessity of adopting regulations and standards to govern in a safe, fair and equitable manner the construction of transportation facilities in the Town; and

WHEREAS, the codes and standards are established and periodically updated to serve as the most practical basis for regulating construction; and

WHEREAS, the Castle Rock Municipal Code imposes a comprehensive regulatory framework that governs the submission, processing, review and consideration of land use applications and permits and prescribes criteria and standards for construction documents and permits.

NOW, THEREFORE, IT IS ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO:

Section 1. Legislative Findings. The recitals of this ordinance are adopted as findings of the Town Council in support of the enactment of this ordinance.

Section 2. Amendment. Section 15.42.010 of the Castle Rock Municipal Code is hereby amended to read as follows:

15.42.110 – Adoption.

The Town adopts ~~by reference the following code:~~ the 2023 TOWN OF CASTLE ROCK Transportation Design Criteria Manual, ~~published November 2018 by the Town of Castle Rock, 100 N. Wilcox Street, Castle Rock, Colorado,~~ and all secondary codes referenced therein. ~~Three (3) copies~~ ONE COPY of the Transportation Design Criteria Manual shall be maintained ON FILE in the office of the Town Clerk and may be inspected during regular NORMAL business hours, ~~the same being adopted as if set out at length herein.~~

Section 3. Amendment. Section 17.42.080.B.8 of the Castle Rock Municipal Code is hereby amended to read as follows:

17.42.080.B.8 – Design standards.

8. Sidewalk requirements: All sidewalks must be designed and built to meet the Town's sidewalk construction and design regulations AS SET FORTH IN THE TRANSPORTATION DESIGN CRITERIA MANUAL ~~with a minimum width of eight (8) feet.~~

- a. All buildings will be required to have a minimum of one (1) sidewalk connection from a sidewalk located along a public roadway to the entrance of the primary structure.

Section 4. Severability. If any cause, sentence, paragraph, or part of this ordinance or the application thereof to any person or circumstances shall for any reason be adjudged by a court of competent jurisdiction invalid, such judgment shall not affect the remaining provisions of this ordinance.

Section 5. Safety Clause. The Town Council finds and declares that this ordinance is promulgated and adopted for the public health, safety and welfare and this ordinance bears a rational relation to the legislative object sought to be obtained.

APPROVED ON FIRST READING this 21st day of March, 2023, by a vote of ___ for and ___ against, after publication in compliance with Section 2.02.100.C of the Castle Rock Municipal Code; and

PASSED, APPROVED AND ADOPTED ON SECOND AND FINAL READING this _____ day of _____, 2023, by the Town Council of Castle Rock by a vote of ___ for and ___ against.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jason Gray, Mayor

Approved as to form:

Approved as to content:

Michael J. Hyman, Town Attorney

Daniel Sailer, Director of Public Works

TRANSPORTATION DESIGN CRITERIA MANUAL

February 2023

Yellow Highlight = Original Revisions that were proposed in September 23rd Outreach.

Cyan Highlight = Additional Revisions resulting from feedback from the September 23rd Outreach.

Purple Highlight = Additional Revisions resulting from internal feedback from the December 26th Outreach.



Published by:
Town of Castle Rock
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Castle Rock, CO 80104
CRgov.com

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TOWN OF CASTLE ROCK TRANSPORTATION DESIGN CRITERIA MANUAL

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Section 1

GENERAL PROVISIONS

1.1 GENERAL INFORMATION

1.1.1 Scope

This manual provides minimum design criteria for planning, designing, and preparing final plans for modifying and constructing transportation facilities within the Town of Castle Rock. It addresses traffic impact analysis, rights-of-way considerations, street geometrics, traffic signal design, signs and markings, transit amenities, bikeways, pedestrian facilities, neighborhood traffic calming, pavement design and wireless facilities. All development and redevelopment of sites, or any other proposed construction submitted for acceptance under the provisions of the ***Town of Castle Rock Development Procedures Manual*** (hereafter *Procedures Manual*) shall include adequate and appropriate transportation system planning, analysis, and design.

1.2 APPLICABILITY OF CRITERIA

These criteria and design standards together with all future amendments shall be known as the ***Town of Castle Rock Transportation Design Criteria Manual*** (hereafter "*Criteria*"). All reports, plans, analyses, and proposed transportation improvement designs submitted as a requirement of the *Procedures Manual* shall comply with these *Criteria*.

1.3 ENACTMENT AUTHORITY

The *Procedures Manual* has been adopted pursuant to the statutory authority conferred within: Article 28 of Title 30 (County Planning); Article 2 of Title 43 (State, County, and City Highway Systems); Article 67 of Title 24 (Planned Unit Development Act); Article 20 of Title 29 (Land Use Control and Conservation); and other applicable sections of Colorado Revised Statutes, as amended.

1.4 JURISDICTION

These *Criteria* shall apply to all land within the incorporated area of the Town of Castle Rock, including any public lands. These *Criteria* shall apply to all developments and facilities constructed in or on Town Rights-of-Way, easements dedicated for utilities across public or private property, easements for public use. These *Criteria* shall also apply to privately owned streets that have the same functionality as public streets i.e. streets that provide a direct thoroughfare between two public streets, excluding multi-family driveways.

1.5 INTERPRETATION AND APPLICATION OF CRITERIA

In the interpretation and application of the provisions of these *Criteria*, the following shall govern:

The provisions shall be regarded as the minimum requirements for the protection of the public health, safety, and welfare of the residents of the Town. These *Criteria* shall therefore be regarded as remedial and shall be liberally construed to further its underlying purposes.

Whenever a provision of these *Criteria* and any other provision of the *Procedures Manual* or any provision in any law, ordinance, resolution, rule or regulation of any kind, contains any requirement(s) covering any of the same subject matter, the requirements that are more restrictive or impose higher standards shall govern.

These *Criteria* shall not abrogate or annul any easements, permits, reports or construction drawings that are recorded, issued, or accepted by the Town prior to the effective date of these *Criteria*.

1.6 VARIANCES

1. Variances to these criteria shall require a formal variance request. Variances from the provisions of these Criteria may be considered on a case-by-case basis for specific applications only and shall not establish a precedent for any other project or future development. All revisions to these Criteria shall be documented on CDs for construction and inspection purposes and on Record Drawings for operational purposes. All Variances on a project shall be listed on Site Plans (if applicable) and CDs including the Variance Number, description of the Variance, and conditions of approval, and the approval date. Formal requests for variances from the standards, policies or requirements of these Criteria shall be submitted with documentation and justification to the Development Services Project Manager. The Variance request and supporting documentation will be reviewed by the Public Works Department, and the Public Works Director or designee will issue a formal response to the request. Submittal requirements for variances and information regarding the appeals process shall be as established in the Development Procedures Manual.

2. Variances that are granted for improvements that have not been constructed are not valid if the Town's criteria are revised for the specific criteria originally varied from.

1.7 AMENDMENTS AND REVISIONS

The policies and criteria may be amended as new technology is developed or if experience gained in the use of these *Criteria* indicates a need for revision. All technical criteria and policy changes must be recommended by the Town Manager or designee. Minor revisions will require the approval of the Town Manager or designee. All major revisions will require adoption, by resolution, of the Town Council following a public hearing thereon. The Public Works Department shall monitor the performance and effectiveness of these *Criteria* and will recommend amendments and revisions as needed.

Examples of Minor and Major Revisions

Minor	Major
Grammar	Policy Changes
Submittal Requirements	
Clarifications	
Construction Detail Revision	
Technical Criteria Changes	

1.8 ENFORCEMENT RESPONSIBILITY

The Town shall review all reports, plans, analyses, and designs, submitted as a requirement of the *Procedures Manual*, for compliance with these *Criteria*. The *Procedures Manual* is enforced by the Town of Castle Rock and its authorized representatives.

1.9 REVIEW AND ACCEPTANCE

The Town shall review all proposed transportation and roadway improvements for general compliance with these *Criteria*. Approval by the Town does not relieve the owner, engineer, or designer from the responsibility of ensuring that the design, calculations, plans, specifications, construction, and record drawings are in compliance with these *Criteria* as stated in the owner's and engineer's certifications.

The Town may, but is not required to, refer submittals to other agencies that have an interest in or responsibility for transportation issues. Other review agencies may include regional, state, or federal agencies responsible for highways, streets, roadway, traffic and other transportation related issues.

1.10 RELATIONSHIP TO OTHER STANDARDS

If the State of Colorado, Federal Government, or other applicable regulatory agency imposes stricter criteria, standards, or requirements than those contained herein, such provisions shall be considered a part of the *Procedures Manual* and these *Criteria*.

1.11 PLANNING PRINCIPLES

The Town recognizes that every project is unique. The setting and character of the area, the needs of the residents and users of the transportation system are all factors that must be considered, along with the values of the community, to achieve a successful project.

The Town of Castle Rock Transportation Master Plan includes a Master Street Plan based on traffic volumes, land use and expected growth. The Master Street Plan classifies each roadway as a local, collector or arterial street. The following criteria apply to each classification. Typical roadway sections are presented in Appendix A of this manual.

1.11.1 Design Characteristics

A local circulation system functions as a traffic management method, implemented to convey vehicular, pedestrian and bicycle traffic through developed areas. Basic considerations in the design of local circulation systems must recognize the following factors:

Safety – for vehicular, pedestrian, and bicycle traffic.

Efficiency of Service – for all users including pedestrians and bicyclists.

Livability – as it is affected and shaped by traffic and transportation elements.

Economy – balancing the cost of providing the necessary infrastructure with the need to provide safe and efficient roadways and other transportation elements.

1.11.2 Principles

The following principles are an elaboration of these design characteristics. The principles are not intended as absolute criteria, as instances may occur where principles conflict. The principles should, therefore, be used as guidelines to design proper circulation systems layout.

Universal Design – The primary function of a local street is to serve the abutting properties and all street users including pedestrians, bicyclists, and drivers of passenger vehicles, waste removal vehicles, delivery trucks, and emergency vehicles. Street widths, placement of sidewalks, patterns of streets and number of intersections are related to the safe and efficient access to abutting lands. The typical street cross sections depicted in Appendix A are intended to accommodate and balance the needs of all users.

Minimize Through Trips – Through traffic on local and collector streets increases the average speed and volume and thus the accident potential, thereby reducing residential amenities. Through traffic can be discouraged by creating a circuitous route between neighborhoods and higher volume streets and by channeling or controlling median crossings along peripheral routes.

Control Access to Arterials – Local circulation systems and land development patterns should not detract from the efficiency of peripheral arterial facilities. Ideally, land development should occur so that no local residential streets require direct access to

arterial routes. The number of street access points between the local circulation system and arterial system should be minimized. Intersections along arterial routes should be properly spaced for efficient signalization and traffic flow. The streets that do intersect the arterial system will tend to have higher volumes since they are the only access points.

Vehicle Speeds Are Controlled – All streets should be designed to eliminate excessive speed. On residential streets the ideal speed of vehicles should be no more than 25 mph. This can be accomplished through the use of curvilinear alignments and circuitous routes in the street system. Traffic calming devices placed along residential streets at distances no greater than 600 feet, along uninterrupted stretches, may also be utilized. The designer must utilize one or a combination of the above principles to keep the 85th percentile speed at or below 25 mph, for residential streets. The design criteria for the traffic “calming” elements included in these *Criteria* (See Section 11 – Neighborhood Traffic Management) are intended for use in the design of residential streets within newly developing neighborhoods. Traffic calming techniques and criteria to be used in existing neighborhoods are included in the Town’s Neighborhood Traffic Calming Program that has been reviewed and approved by Town Council.

Minimize Pedestrian & Vehicular Conflicts – Pedestrian travel from within a residential area to points outside should require a minimum number of street crossings. This can often be achieved through proper design of street patterns, land use arrangements and pedestrian routes. Typical methods include use of cul-de-sacs, loop streets, special pedestrian routes or walkways and the proper placement of high pedestrian traffic generators. In general, while vehicular flow must be outward oriented to the peripheral arterials, pedestrian travel should be inward-oriented to avoid these heavier vehicular flows.

Minimize Space Devoted to Street Use – It is desirable to minimize local street widths to reduce construction and maintenance costs as well as to allow for the most economic land use. Streets should also have an appearance commensurate with their function. They should be in keeping with the residential character. The street cross section options provided by the Town are intended to achieve this goal.

Topography is Used to Its’ Advantage – Local streets will be more attractive and economical if they are constructed to follow existing topography. Using the existing topography of the area can assist in limiting the needs for an extensive storm drainage piping system. The streets will also be more accessible during inclement weather.

Layout Streets to Achieve Optimum Subdivision of Land – The arrangement of streets should permit economical and practical patterns, shapes and sizes of development parcels. Distances between streets, the number of streets, and related elements all have a bearing on the efficiency of a subdivision. Access to adjoining properties and links to other streets is encouraged. Access type to residential lots, front loaded versus alley loaded, should be consistent within a block or similar group of blocks.

New Private Street Development - Private streets will not be permitted within single-family residential zoned areas of all new developments that include one family or two-family dwellings as defined in sections 17.08.130 and 17.08.140 of the Municipal Code. For purposes of this policy, and in order to distinguish between a driveway, a private street includes curb and gutter, however this policy shall not preclude private shared driveways. Private streets will be permitted for new single-family home projects where there will be a single owner/association/district of all the homes in the project.

Phased Street Construction - Where streets longer than 150 feet temporarily dead end due to phasing, an interim turnaround shall be required. Each dead end shall be provisioned with signage per MUTCD.

Ensure Vehicular, Pedestrian and Bicycle Access –The complete transportation system should encourage and enhance bicycle, pedestrian and other non-motorized travel modes. Designers shall accommodate direct bicycle, pedestrian, and other non-motorized access through drainage channels tracts, dead ends, walls, cul-de-sacs, open space, and other barriers to reach neighborhood destinations such as homes, schools, parks, libraries, retail centers, civic spaces, and other trip generators. Where needed, as determined by the Town and to meet all current ADA standards, street designs shall include appropriate ramps, sidewalks, and other basic amenities to facilitate and encourage non-motorized transportation.

1.12 ACRONYMS

As used in these *Criteria*, the following acronyms shall apply:

AASHTO - American Association of State Highway and Transportation Officials

ADT - Average Daily Traffic

ADAAG – American Disability Act Accessibility Guidelines

ANSI - American National Standards Institute

ASCE – American Society of Civil Engineers

ASTM - American Society for Testing Materials

BMP – Best Management Practices

C&G – Curb and Gutter

CDOT – Colorado Department of Transportation

DMMP – Downtown Mobility Master Plan

DRCOG – Denver Regional Council of Governments

DU – Dwelling Unit

e – Rate of Superelevation

FHWA – Federal Highway Administration

FL – flowline

Ft – Feet

GIS – Geographic Information Systems

HC – Horizontal Curve

HCM – Highway Capacity Manual

IES - Illuminating Engineering Society
ITE – Institute of Transportation Engineers
LOS – Level of Service
Max – Maximum
Min – Minimum
MGPEC - Metropolitan Government Pavement Engineering Council
mph - miles per hour
MUTCD - Manual on Uniform Traffic Control Devices
NFPA - National Fire Protection Association
P.E. - Professional Engineer
P.L.S. - Professional Land Surveyor
PCR - Point of Curb Return
PI - Point of Intersection
PROWAG – Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-way
PVC - Polyvinyl Chloride Pipe
ROW - Right-of-Way
SD - Sight Distance
TCR - Town of Castle Rock
TDM - Transportation Demand Management
TRB – Transportation Research Board
US DOT – United States Department of Transportation
VPD - vehicles per day
VPH - vehicles per hour

1.13 DEFINITIONS

Criteria - Town of Castle Rock Transportation Design Criteria Manual

Downtown - The Downtown area, as it pertains to specific Downtown criteria in this manual, is defined by the boundaries of Plum Creek Parkway on the south, the railroad right-of-way on the east, Wolfensberger Road on the north and Interstate 25 on the west.

Procedures Manual - Town of Castle Rock Development Procedures Manual

Public Entity – The State of Colorado or a county, city and county, town, or district, including any political subdivision thereof.

Right-of-Way - Also "Public Right-of-Way", shall mean a public street, way, alley, sidewalk, easement, park, square, plaza, tract, and Town-owned lands or any other public property owned and controlled by the Town or dedicated to public use

Sight Distance Lines – The term "Sight Distance Lines" include Intersection Sight Distance Triangles, Sight Distance Easements and sight lines required for minimum Stopping Sight Distance. Each of these define areas that should be clear of obstructions that might block a driver's view of potentially conflicting vehicles or pedestrians.

Stop Work Order – A written instruction/notice from the Town, revoking the Developer's Construction Permit and subsequent right to continue work on the project, due to non-conformance with these criteria.

1.14 REFERENCES

The most current version of the following codes, **manuals and regulations** are adopted as a secondary code to this Transportation Design Criteria Manual:

AASHTO - "A Policy on Geometric Design of Highways and Streets" (Greenbook)
AASHTO - "Guide for the Development of Bicycle Facilities"
AASHTO - "Guide for Design of Pavement Structures"
AASHTO - "Roadside Design Guide"
ADA - "ADA Standards for Accessible Design"
CDOT - "Roadway Design Guide"
CDOT - "M & S Standard Plans Book"
CDOT - "Model Traffic Code for Colorado"
CDOT - "Standard Specifications for Road and Bridge Construction"
CDOT - "State of Colorado - State Highway Access Code"
CDOT - "Rules and Regulations of the Colorado Department of Transportation, Pertaining to Accommodating Utilities in the State Highway Rights of Way"
FHWA/U.S. DOT - "Manual on Uniform Traffic Control Devices" (MUTCD)
FHWA/U.S. DOT - "Roundabouts: An Informational Guide"
IES - "Design Guide for Roundabout Lighting"
ITE - "Traffic Access and Impact Studies for Site Development – A Recommended Practice"
ITE - "Traffic Control Devices Handbook: An ITE Informational Report"
ITE - "Trip Generation Handbook: An ITE Recommended Practice"
ITE - "Trip Generation – An ITE Informational Report"
MGPEC - "Pavement Design Standards and Construction Specifications Manual"
NCHRP - "Roundabouts: An Informational Guide"
Town of Castle Rock - "Construction Methodology and Materials"
Town of Castle Rock - "Detail Plans List"
Town of Castle Rock - "Bike Marking and Signage Policy"
Town of Castle Rock - "Standard Special Provisions"
Town of Castle Rock - "Downtown Mobility Master Plan"
Town of Castle Rock - "Transportation Master Plan"
TRB - "Highway Capacity Manual" (HCM)

Section 2

ROADWAY DESIGN CRITERIA

2.0 GENERAL INFORMATION

2.0.0 Scope

This section sets forth the minimum design, technical criteria and specifications to be used in the preparation of all roadway plans.

2.0.1 Reference Materials

Within this section of the *Criteria*, “Green Book” refers to the current edition of “A Policy on Geometric Design of Highways and Streets”. Other documents referenced within this section are listed in Section 1.

2.1 FUNCTIONAL CLASSIFICATION

2.1.1 Local Residential Streets (Single Family and Multi-Family)

- 1. Street Function and Characteristics:**
 - A. Local residential street is a general term denoting a roadway that will serve a residential area. Its primary function is to provide direct access to adjacent residential properties and to uses normally found within residential areas, such as parks, schools, and community areas. These roadways should have limited continuity and be designed to discourage the through movement of vehicles, i.e. those vehicles having neither an origin nor a destination within the neighborhood.
 - B. Local residential streets should be designed to accommodate and encourage pedestrian and bicycle activity. When necessary, traffic calming measures may be required on streets where average vehicle speeds are expected to exceed the posted speed limit. This normally occurs when there are relatively straight, unobstructed street segments in excess of 600 ft. See Section 11 – Neighborhood Traffic Management.
 - C. Parking is allowed on this street classification, however parking is restricted within 30 feet of the PCR on approaches where traffic control is present. All other approaches and departures shall have no

parking or driveway access within 20-feet of the PCR. See Table 2.1 for minimum design standards.

2. Traffic control

Traffic control for this type of street will normally be limited to stop and yield signs. Roundabouts may be used in place of multi-way stop control. Although discouraged, traffic signals may be needed at intersections with collector streets. To prevent this, the design of the neighborhood street system should limit daily traffic volumes on streets to less than 1,500 vpd.

3. Access Conditions

Local residential streets should intersect with other local streets and minor collector streets. Local residential streets should not intersect with major collectors or arterial streets. In some cases, an entry street may be used to connect a local street to a major collector or arterial. Access to commercial properties will not be allowed. See Figure 3.1 for intersection spacing. See Section 3.2.6 for access criteria.

4. Sidewalks and Bike Lanes

Local residential streets shall have sidewalk on both sides of the street. See Table 2.1 for exceptions in neighborhoods where the housing density is considered Medium and Large Lot Residential. Streets proposed to have a single sidewalk must accommodate pedestrian transitions from neighboring areas with sidewalks on both sides. Bike lanes are not necessary on local residential streets. See Appendix A for typical cross sections. See Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs & Knuckles

- A. Cul-de-sacs may be incorporated into a neighborhood design. A cul-de-sac should have a maximum length of 600 ft. (measured from the right-of-way line of the intersecting street to the end of the cul-de-sac), and a maximum of 25 dwelling units. For cul-de-sac lengths in excess of 600 feet to be permitted, the Town of Castle Rock Fire Department shall determine the necessity of automatic sprinkler systems in structures beyond 600 feet. Any cul-de-sac in excess of 1,200 feet will require the approval of the Town of Castle Rock Fire Department. For cul-de-sacs

in excess of 600 feet, a maximum of 40 dwelling units will be permitted. See the Town of Castle Rock Public Works Details and Forms for cul-de-sac specifications and Section 2.9 for additional criteria.

B. Knuckles may be incorporated into a neighborhood design on Local streets. Knuckles can be used at street corners with no other intersecting streets. Knuckles should not be used in lieu of minimum centerline street radii. See the Town of Castle Rock Public Works Details and Forms for knuckle specifications.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria:

The design criteria for local residential streets can be found in Tables 2.1, 2.2, 2.3, 2.4 and 2.5. Typical sections are shown in Appendix A.

**Table 2.1
Residential Street Minimum Design Standards Matrix**

Housing Density ⁷	Dwellin g Units per total lot acrea g e	Street Width ¹ Parking on Both Sides	Street Width ¹ Parking on One Side	Right-of-way Width ²	Front Setbac k ³	Street Elements				
						Curb Type	Sidewa lk	Planting Strip	Street Trees	Traffic Calmi ng
Residenti al-Large lot	2.0 or less	32' Min .	26' Min .	36' Min .	varies, based on PD	No Curb w/ 1' Edge Band ⁴ , Mountabl e or Vertical Curb	Min. 2 sides ⁵ 5' min. each side	Optional for all neighborho od types	Incorporat e into planting strips or on private property:	Integra te into design as neede d
Residenti al- Medium Lot	2.1 - 4.0	32' Min .	see not e ⁶	36' Min .	varies, based on PD	Mountabl e or Vertical Curb	Min. 2 sides ⁵ 5' min. each side	Min. width (with overhead irrigation): 10'	5' – 8' from back of walk	
Residenti al-Typical Suburban ; Multi-family; Small lot	4.1 and Higher	32' Min .	n/a	36' Min .	varies, based on PD	Mountabl e or Vertical Curb	Min. 2 sides 5' min. each side	(See Town's Landscape & Irrigation Performanc e Standards and Criteria)	(See Town's Landscape & Irrigation Performance Standards and Criteria)	

- 1 - Street width is the flowline–flowline width. For streets without curb, width is measure from outside edge of edge band.
- 2 – Sidewalk and planting strip, and underdrain easements must be provided if minimum right-of-way width is utilized.
- 3 - The location of the sidewalk will be considered when determining the front setback. The setback should provide for parking in the driveway, without blocking the sidewalk.
- 4 - For streets without curb, roadside drainage swales will be necessary with drainage easements. The HOA, District or adjacent property owner will be required to maintain the roadside drainage swale and driveway culverts.
- 5 - Sidewalks on both sides of the street are required unless it is demonstrated that one sidewalk is adequate due to the character and/or density of the proposed neighborhood. For example: houses limited to one side of street; pedestrian routes are met through a separate trail network.
- 6 - 26' street widths will be considered for the lower densities of this category (2.1-3.0 DUs per acre). For 26' streets in higher densities (3.1–4.0 DUs per acre) the developer must demonstrate that parking is not necessary on both sides of the street due to circumstances such as: housing on one side of the street; housing product where on-street parking is less likely.
- 7 - The Town may apply different housing density categories to different neighborhoods of the same subdivision.

2.1.2 Local Mixed-Use Streets

1. Street Function and Characteristics:

- A. A local mixed-use street is a general term denoting a roadway serving an area with intentionally mixed commercial and residential uses. These streets provide direct access to high density development with compatible uses separated horizontally or vertically within the same or multiple buildings.
- B. The streets should be designed to accommodate and encourage pedestrian and bicycle activity. When necessary, traffic calming measures may be required on lengths of street where average vehicle speeds can be expected to exceed the posted speed limit. This will normally occur when there are unobstructed segments of street in excess of 600 ft. See Section 11 - Neighborhood Traffic Management.
- C. Parking is allowed on this street classification, however parking is restricted within 30 feet of the PCR on approaches where traffic

control is present. All other approaches and departures shall have no parking or driveway access within 20-feet of the PCR.

2. Traffic control

Traffic control for this type of street will normally be limited to stop and yield signs. Roundabouts may be used in place of multi-way stop control. Although discouraged, traffic signals may be needed at intersections with collector streets. The design of the mixed-use street system should limit daily traffic volumes on streets to less than 15,000 vpd.

3. Access Conditions

Local mixed-use streets should intersect with other local streets and minor collector streets. Local mixed-use streets should not intersect with major collectors or arterial streets. An entry street may be used to provide access with a major collector or arterial. See Appendix A for the entry street typical cross section. See Figure 3.1 for intersection spacing. See Section 3.2.6 for access criteria.

4. Sidewalks and Bike Lanes

Local mixed-use streets shall have sidewalk on both sides of the street. Bike lanes are not necessary on local mixed-use streets. See Appendix A for typical cross sections. See Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs & Knuckles

Cul-de-sacs and knuckles are not recommended for local mixed-use streets.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes.

Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria:

The technical design criteria for local mixed-use streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are shown in Appendix A.

2.1.3 Industrial Streets

1. Street Function and Characteristics:

- A. An industrial street is a general term denoting a roadway that will serve industrial properties. These streets will not provide access to single family, residential properties although access to multi-family properties may be permitted.
- B. Properties being developed along these types of streets will be granted access based upon the existing conditions of the street, the amount of traffic expected at the access points, and the traffic impacts expected from the development. All of these factors must be described in the Traffic Impact Analysis (see Section 7).

2. Traffic control

Traffic control for this type of street will normally be stop signs. Roundabouts may be used in place of multi-way stop control. Traffic signals may be needed at intersections with collector and arterial streets, as warranted. The design of the industrial street system should limit daily traffic volumes on streets to less than 3,000 vpd.

3. Access Conditions

Industrial streets will connect with other industrial streets, collectors, and arterial streets. They will not intersect with residential streets.

Intersection spacing will meet the criteria of local streets. See Figure 3.1 for intersection spacing.

4. Sidewalks and Bike Lanes

Industrial streets shall have sidewalks on both sides of the street. Bike lanes are typically not required unless the street is identified as a bicycle route in the Town's Transportation Master Plan. Additional pavement width & right-of-way is required to accommodate bike lanes, if necessary. See Appendix A for typical cross sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs & Knuckles

Cul-de-sacs may be permitted if no other street layout is possible. Knuckles are not permitted. Cul-de-sacs may be a maximum of 600 feet in length, measured from the right-of-way line of the intersecting street to the end of the cul-de-sac, and shall have a maximum of 25 lots. For cul-de-sac lengths in excess of 600 feet to be permitted, the Town of Castle Rock Fire Department shall determine the necessity of automatic sprinkler systems in structures beyond 600 feet. Any cul-de-sac in excess of 1,200 feet will require the approval of the Town of Castle Rock Fire Department. For cul-de-sacs in excess of 600 feet, a maximum of 40 dwelling units will be permitted. The traffic impact analysis must be able to show that the maximum traffic volume on a cul-de-sac within this type of area will not serve more than 1,000 vpd. See the Town of Castle Rock Detail Plans for cul-de-sac specifications. See Section 2.9 for additional criteria.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way width. Additional right-of-way may be required for auxiliary lanes.

Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for industrial streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.4 Collector – Minor Residential

1. Street Function and Characteristics

- A. A minor residential collector street is a general term denoting a street whose primary purpose is to move traffic through a residential area to major roadways outside of the neighborhood. While they should be continuous, care must be taken to ensure that they do not function as arterials or encourage “cut-through” traffic within residential neighborhoods.
- B. The streets should accommodate both pedestrian and bicycle activity. Due to the fact that they may have traffic volumes higher than the residential streets they serve, parking should not be permitted. This type of street should have a maximum traffic volume of 7,000 vpd.

2. Traffic Control

Traffic control will normally be limited to stop signs, although when necessary, roundabouts will also be considered. At intersections with major collectors and arterials, traffic signals may also be required. Turn lanes may be required at major intersections.

3. Access Conditions

Minor residential collectors may intersect local residential and mixed-use streets, non-residential and major collectors, and arterial streets. There should be no house frontage or other accesses along the street.

See Figure 3.1 for Intersection Spacing and Section 3.2.5 for access criteria.

4. Sidewalks and Bike Lanes

Detached sidewalks will be installed along both sides of the street. A bike lane will be marked in each direction of travel. See Appendix A for the typical sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor residential collector streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.5 Collector – Minor Non-residential

1. Street Function and Characteristics

- A. A minor non-residential collector street is a general term that denotes a street whose primary purpose is to move traffic through a primarily non-residential area to major roadways outside of the neighborhood. This type of street may serve commercial, industrial and mixed-use developments.
- B. A minor non-residential collector should have a maximum traffic volume of 7,000 vpd. On-street parking should not be permitted. Although they should be designed to accommodate larger volumes of traffic, care should be taken to not encourage through traffic from

outside of the area to be served. A higher percentage of truck traffic will be found on this classification of street than the residential collector.

2. Traffic Control

Traffic control will normally be limited to stop signs, although when practicable, roundabouts will also be considered. At intersections with major collectors and arterials, traffic signals may also be required. Turn lanes may be required at major intersections.

3. Access Conditions

Non-residential collectors may intersect with both local residential and mixed-use streets, residential and major collectors, and arterial streets. There should be no residential frontage permitted along this classification of street. Driveway access to commercial, industrial or mixed-use developments is permitted. See Figure 3.1 for Intersection Spacing and Section 3.2.5 for access criteria.

4. Sidewalks and Bike Lanes

Sidewalks will be located along both sides of the street to accommodate both pedestrian and bicycle traffic. Due to the larger volumes of truck and turning traffic, bike lanes will not be required except when the roadway is identified as a bicycle route in the Town's Transportation Master Plan. See Appendix A for the Typical Sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and "knuckles" shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor non-residential collector streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.6 Collector – Major

1. Street Function and Characteristics

- A. A major collector’s function is to provide access from the lower street classifications to the arterial street system. They will be continuous by design and provide for the unimpeded movement of traffic, but care should be taken to ensure that they do not function as arterial streets.
- B. This classification of street will typically have 2 travel lanes and dedicated turn lanes. Collector streets having greater than 7,000 vpd should be considered “major” collectors. Parking shall not be permitted on this classification of street.

2. Traffic Control

Traffic control will include traffic signals, stop signs, and when practicable, roundabouts. Roundabouts should be used whenever possible so as to reduce delay. Turn lanes may be required at all intersections.

3. Access Conditions

Major collectors should be used to facilitate the movement of traffic and not to provide access to adjacent properties. They may be intersected by arterial, collector streets, and by local mixed-use categories of streets. There should be no residential frontage permitted along this classification of street. No driveway access is permitted, although curb cuts serving commercial, industrial or mixed-use developments may be permitted. See Section 3.2.5 for access criteria.

4. Sidewalks and Bike Lanes

Sidewalks will be located along both sides of the street to accommodate both pedestrian and bicycle traffic. Bike lanes will be required for both directions of travel. See Appendix A for the Typical Sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for major collector streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.7 Arterial – Minor

1. Street Function and Characteristics

- A. The primary function of a minor arterial is the unimpeded movement of traffic through the Town. Minor arterials should be located adjacent to, but not within, neighborhoods. Arterials should form boundaries between developments and types of land uses.
- B. A minor arterial street will be provided for traffic volumes either in excess, or expected to ultimately be in excess, of 12,000 vpd. It will typically have 2 traffic lanes in each direction with auxiliary turn lanes. Parking shall not be permitted on this classification of street.

2. Traffic Control

Traffic control will primarily be either through the use of roundabouts or traffic signals. Roundabouts should always be the first choice when

practicable. When neither a traffic signal nor roundabout can be installed, access from side streets should be limited to right-in/right-out movements only.

3. Access Conditions

Control of access is a priority for this street classification. The spacing of access points/intersections should be limited to one-quarter mile intervals or more in order to optimize traffic signal progression. See Section 3.2.4 for access criteria.

4. Sidewalks and Bike Lanes

Detached sidewalks and on-street bike lanes will be provided on both sides of the street. See Appendix A for the typical sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor arterial streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.8 Arterial – Major

1. Street Function and Characteristics

- A. The function of a major arterial is the unimpeded movement of traffic through the Town. Major arterials should be located adjacent to, but

not within, neighborhoods and form boundaries between developments and types of land uses.

- B. A major arterial will be provided for traffic volumes either in excess, or expected to ultimately be in excess, of 15,000 vpd. It will have a minimum of 2 traffic lanes in each direction with auxiliary turn lanes. Parking shall not be permitted on this classification of street.

2. Traffic Control

Traffic control will primarily be either through the use of roundabouts or traffic signals. Roundabouts should always be the first choice when practicable. When neither a traffic signal nor roundabout can be installed, access from side streets should be limited to right-in/right-out movements only.

3. Access Conditions

Control of access is a priority for this street classification. The spacing of access points/intersections should be limited to one-half mile intervals or more in order to optimize traffic signal progression. See Section 3.2.3 for access criteria.

4. Sidewalks and Bike Lanes

Detached sidewalks and on-street bike lanes will be provided on both sides of the street. See Appendix A for the typical sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor arterial streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

TOWN OF CASTLE ROCK TRANSPORTATION DESIGN CRITERIA MANUAL

Table 2.2 - Street Design Criteria

Criteria	Local		Industrial	Collector			Arterial	
	Residential	Mixed Use		Minor Residential	Minor Non-Residential	Major	Minor	Major
Average Daily Traffic (VPD)	< 1,500	< 15,000	< 3,000	< 7,000	< 7,000	> 7,000	> 12,000	> 15,000
Design Speed (mph)	25	25	30	30	30	35	40	45
Posted Speed (mph)	25	25	30	30	30	35	40	45
Minimum-Maximum Street Grade	1 - 8% ^{5, 8}	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸
Minimum Center Line Radius (ft)	200'	200'	330'	330'	330'	510'	762'	1040'
Min. Tangent Between Reverse Curves	0'	0'	0'	50'	50'	100'	100'	See ¹
Vertical Curve Min. K-Value (Crest)	12	12	19	19	19	29	44	61
Vertical Curve Min. K-Value (Sag)	26	26	37	37	37	49	64	79
Min. Length Vert. Curve - Crest / Sag (ft)	See AASHTO Design Controls for Vertical Curves - Crest and Sag							
Min. Stopping Sight Distance (ft)	155' ⁷	155' ⁷	200' ⁷	200' ⁷	200' ⁷	250' ⁷	250' ⁷	360' ⁷
Min. Stopping Sight Distance at Intersections & Turning Roadways	Based on Design Speed of the Vehicle Path on the Curve (Applicable to Intersections, turning roadways and knuckles) ⁷							
Travel Lane Width	See Typical Sections in Appendix							
Number of Travel Lanes								
Right-of-Way Width								
Paved Width								
Curb Type								
Sidewalk Width								
Roadway Cross Slope								
Parking Lane (Y/N)	Y	Y	Y	N	N	N	N	N
Parking Lane Width (ft)	See Typical Sections in Appendix			N/A	N/A	N/A	N/A	N/A
Bike Lane (Y/N)	N	N	N ⁶	Y	N ⁶	Y	Y	Y
Bike Lane Width (ft)	N/A	N/A	See Typical Sections in Appendix					
Median Width (ft)	N/A	N/A	N/A	See Typical Sections in Appendix				
Minimum Pavement Section	Based on Approved Pavement Design Report - See Pavement Design Section							
Curb Return Radii (ft) ⁴								
Arterial Intersection	35' ²	35' ²	50'	35'	35'	35'	50'	50'
Collector Intersection	30'	30'	35'	30'	30'	30'	35'	35'
Industrial Intersection	35'	35'	35'	35'	35'	35'	50'	50'
Local Intersection	20'	30'	35'	30'	30'	30' ²	35' ²	35' ²
Entry Street ³	20'	30'	35'	30'	30'	30'	35'	35'
Intersection Spacing	See Figure 3.1							
Driveway and Street Access	See Section 3 - Access Requirements & Criteria							
Design Vehicle	SU	WB-50	WB-50	WB-50	WB-50	WB-50	WB-50	WB-67

Notes

1. Min. tangent length between curves shall be equal to or greater than the sum of Superelevation Runoff and Tangent lengths as per AASHTO Greenbook"
2. Arterial/Local and Major Collector/Local intersections are not allowed. An Entry Street may be necessary. Listed values may apply to existing intersections.
3. See Appendix A for Entry Street typical section
4. Curb returns must accommodate largest design vehicle so that conflicting approach lanes are not encroached upon.
5. The max. grade for Local Residential roads may be increased to 8% for southerly facing slopes between South 60° East and South 45° West.
6. Bike lanes shall be required when street is a proposed bike route in the Transportation Master Plan.
7. Stopping Sight Distance: The height of eye is 3.5 ft and the height of object is 2.0 ft.
8. To meet ADA Accessibility Guidelines (ADAAG) for accessible routes, a maximum grade of 5% is recommended (not required) for streets with adjacent sidewalk.

2.2 DESIGN CRITERIA - SIDEWALKS, CURB RAMPS, AND DRIVEWAYS

2.2.1 Sidewalks

1. Sidewalks or bicycle paths shall be constructed on both sides of all roadways unless specifically deleted by action of the Town Council. Per Table 2.1, some low density residential streets may limit sidewalks to one side of the street if it is demonstrated sidewalks on both sides are unnecessary. The site plan for these low density neighborhoods must be approved by Town Council.
2. Combination curb, gutter, and sidewalk shall be approved for use on local residential and industrial roadways only. Vertical curb, gutter and detached walk shall be used as shown on the typical sections in Appendix A.
3. Downtown sidewalks vary from sidewalks in other areas of the Town. The Downtown area where the following standards apply is consistent with the Downtown Overlay District area as defined in the Municipal Code.
 - A. The minimum sidewalk width in Downtown shall be 8 feet if the sidewalk is detached from the curb by a 4-foot minimum landscaping strip.
 - B. The minimum sidewalk width in Downtown shall be 8 feet with a minimum 2-foot curb shy accent between the sidewalk and curb when attached to the curb. See Figure 2.0. Additional sidewalk width and/or

curb shy may be required with respect to scale, surrounding development patterns, and right-of-way availability.

- C. The preferred width for an attached sidewalk is 12 feet. This width includes a 4-foot wide accented furnishing zone for amenities such as benches, trash cans, bike racks, and shade trees. See Figure 2.1
- D. All street trees, unless in a landscape strip, shall be placed in ADA compliant tree grates.
- E. These standards (Section 2.2.1.3) apply to all redevelopment within the defined Downtown area as determined by the Town with respect to scale, surrounding development patterns, and right-of-way availability. These standards can apply where the street can be practicably narrowed without compromising the street function.
- F. These standards (Section 2.2.1.3) shall not apply to tenant finish permits or architectural façade revisions or where available width for the sidewalk is constrained by existing buildings, structures, mature desirable trees or comparable features.

- 4. See Section 8 of these Criteria for additional criteria related to sidewalks.

Figure 2.0



Figure 2.0-A



2.2.2 Pedestrian Curb Ramps

1. Federal law requires ADA-compliant pedestrian curb ramps at all intersections and at certain mid-block locations for new construction or reconstruction of roadways, curb, and sidewalk. Ramps shall be

constructed in accordance with the Town of Castle Rock Detail Plans or CDOT M&S Standards

2. Pedestrian curb ramps shall be installed at all curb returns and at all “T” intersections directly opposite either curb return.
3. Whenever referencing a handicap ramp, the designer shall call out the specific standard detail to be used to construct the ramp.
4. Detailed curb ramp design shall be provided on construction plans to demonstrate compliant grades, turning space dimensions, etc.
5. Mid-block curb ramps should be located to avoid interference with future driveways.

2.2.3 Driveways

1. When the number of parking spaces serviced by the driveway exceeds 10, radius returns may be required. The Town shall review the parking area size and location relative to the street, in addition to the anticipated type of vehicles, to approve the proposed type of street access; i.e. curb cut or curb returns. See Chapter 3 of these *Criteria* for entrance requirements.
2. Where curb cuts are allowed based on traffic considerations, concentrated storm water runoff must not be discharged across the sidewalk. These flows must be directed to storm sewers or a detention facility. If this is not possible due to grading restraints, radius returns and a crossspan must be used.
3. Driveway access to public streets shall be constructed in accordance with the Town of Castle Rock Detail Plans.
4. See Section 2.5.2 for driveway grades approaching public streets.

2.2.4 Design Criteria - Drainage

The storm drainage system shall be designed in accordance with the Town of Castle Rock’s Storm Drainage Design and Technical Criteria Manual. In the case of a conflict caused by these requirements of the Urban Storm

Drainage Criteria Manual, the stricter drainage requirements should govern.

2.2.5 Crossspans

1. Crossspans are not permitted across entry streets, collectors (minor or major), or arterials (minor or major) but may occur parallel to these streets across a local street intersection. If there is storm sewer in the street within 100 feet, no crossspan shall be allowed across a local street.
2. Crossspans shall be constructed in accordance with the Town of Castle Rock Detail Plans.
3. If pavement is concrete, any drainage conveyance, such as crossspans, may be poured monolithically with the main line paving process.
4. Mid-block crossspans are not permitted.
5. Crossspans in the public right-of-way are not permitted across the entrance to private streets or driveways at signalized or future signalized intersections where the traffic flow would be negatively affected by the crossspan, as determined by the Town. Crossspans in public right-of-way shall have a minimum width of 8 feet. The Town may require 10' width for certain intersections where traffic operations would be detracted by using an 8 foot crossspan.
6. Pedestrian crosswalks/routes shall not be located within drainage crossspans.

2.2.6 Inlets

1. Inlets shall be located to intercept the curb flow at the point curb flow capacity is exceeded by the storm runoff. Refer to Storm Drainage Design and Technical Criteria Manual for additional details.
2. Inlets shall be installed to intercept cross-pavement flows at points of transition in superelevation. Roadways shall not be designed to allow water to sheet flow across the road pavement or across intersections.

3. Inlets are not allowed in the curb returns but will be located at or behind the tangent points of the curb returns.
4. Inlets shall be required as needed for medians with “catch” curb.
5. Inlets shall be located a minimum of 5 feet away from driveways.

2.2.7 Cross Slope

1. Except at intersections, roadways shall be level from top of curb to top of curb (or flowline to flowline) and shall have a 2% crown.
2. Parabolic or curved crowns are not allowed. In no case shall the pavement cross slope at warped intersections exceed the grade of the through street.
3. The rate of change in pavement cross slope when warping side streets at intersections shall not exceed 1% for every 25 feet horizontally on a local roadway; 1% for every 37.5 feet horizontally on a collector roadway; or 1% for every 56.5 feet horizontally on arterial roadways.
4. Flowline profiles shall be provided wherever the flowline is not symmetrical with the street centerline profile.

2.2.8 Sidewalk Chase Drains

1. Storm water from concentrated points of discharge shall not be allowed to flow over sidewalks, excluding standard swales on property lines in residential neighborhoods.
2. Sidewalk chase drains will only be allowed in special situations, on a case-by-case basis, as determined by the Town. Sidewalk chase drains, when permitted, are to be used to allow surface drainage to enter into the street gutter rather than being used to avoid the use of a standard inlet.
3. Sidewalk chase drains shall not be located within a curb cut or driveway.
4. Sidewalk chase drains shall be designed in accordance with the Town of Castle Rock Detail Plans.

2.2.9 Temporary Erosion Control

1. Temporary erosion control shall be provided in accordance with the Town's Temporary Erosion and Sediment Control Criteria.
2. Temporary erosion control is required along and at the ends of all roadways that are not completed due to project phasing, subdivision boundaries, etc. Such erosion control measures shall be maintained by the property owner in good working condition and at no cost to the Town.

2.3 HORIZONTAL ALIGNMENT

2.3.1 Horizontal Curves

1. Horizontal curves for all roadway types shall be designed in accordance with the latest version of the AASHTO design criteria or as shown in Table 2.2.
2. Shifts in through lane alignments to accommodate auxiliary lanes must meet or exceed MUTCD and/or AASHTO standards, in addition to minimum radii requirements.

2.3.2 Design Speed

1. Horizontal alignment design speed shall be consistent with the requirement for vertical alignment design speed.
2. Design speed must be based on providing all geometric elements to maintain the design speed along the entire stretch of the road.
3. Drivers tend to travel somewhat faster in the downgrade than in the upgrade direction. This should be recognized in the designs for roadways on steep grades.

2.3.3 Superelevation

1. The use of superelevation shall not be allowed on any roadways with a design speed of 40 mph or less.

2. The use of superelevation on Town roadways with a design speed of 45 mph may be considered on a case-by-case basis as determined by the Public Works Department. If approved, such roadways shall be designed in conformance with these standards and the AASHTO “Green Book”.

2.3.4 Sight Distance – Horizontal Alignment

1. The major considerations in alignment design are safety, grade, profile, road area, design speed, sight distance, topography, drainage, and performance of heavy-duty vehicles. Alignment should provide for safe and continuous operation at a uniform design speed. Road layout shall bear a logical relationship to existing or platted roads in adjacent properties.
2. The horizontal alignment must provide at least the minimum stopping distance for the design speed at all points. This includes visibility at intersections as well as around curves and roadside encroachments.
3. The lateral clearance, the distance from the inner edge of pavement to sight obstructions, for various radii of inner edge of pavement and design speeds, is shown graphically in the AASHTO “Green Book”. The position of the driver’s eye and the object sighted are assumed to be 6 feet from the inner edge of pavement, with the stopping sight distance being measured along this arc.
4. Whenever possible, intersections shall be made at right angles or radial to a curve. No intersecting angle less than 80 degrees will be allowed.

2.3.5 Stopping Sight Distance

1. See Table 2.2 for minimum stopping sight distance for the roads design speed.
2. The minimum stopping sight distance is the distance required by the driver of a vehicle traveling at the design speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is calculated in accordance with the AASHTO “Green Book”, latest edition.
3. Where an object off the pavement or in the median that restricts sight distance, the minimum radius of curvature is determined by the stopping

sight distance. In no case shall the stopping sight distance be less than as specified in AASHTO “Green Book”. A likely obstruction may be a bridge abutment, a line of columns, walls, fences, cut slopes, or buildings.

4. The sight distance design procedure shall assume a 6’–0” fence (as measured from actual finished grade) exists at all property lines except in the sight-distance triangles required at all intersections.

2.3.6 Approach Sight Distance

Intersections with yield signs or no traffic control

1. Sight Triangle – There shall be an unobstructed sight distance along both approaches of both sides at an intersection and across their included corners for distances sufficient to allow the operators of vehicles, approaching simultaneously, to see each other in time to prevent collisions at the intersection. The sight triangle shall meet requirements found in AASHTO “Green Book”. See Section 2.4.8 for sight distance line criteria.

These criteria also require the elimination of parking within the sight triangles on non-local roads and applies whether the intersecting roads are level or on grades.

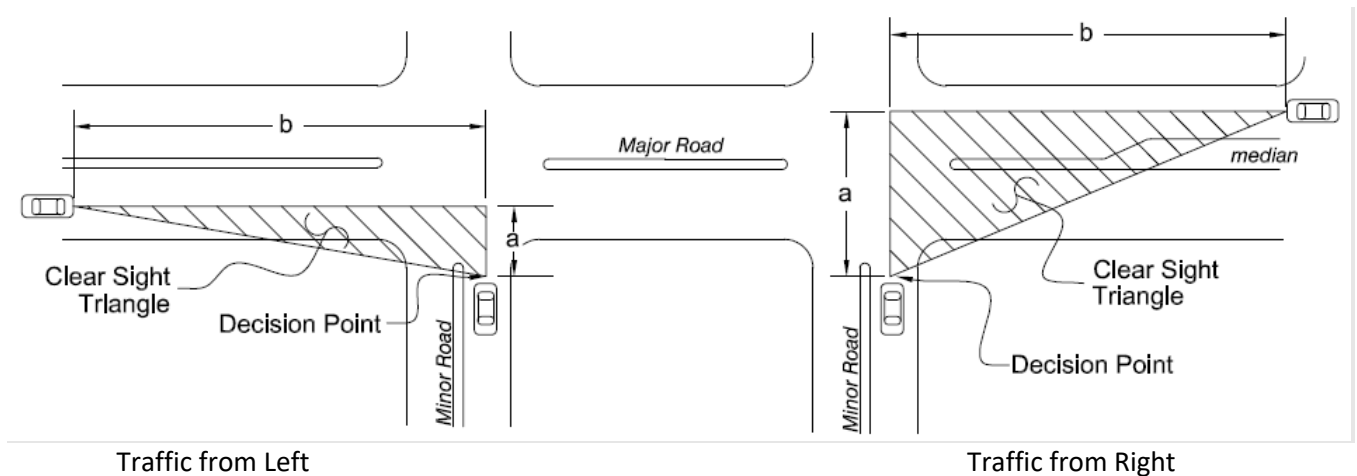
2.3.7 Departure Sight Distance

Intersection Sight Distance from stop condition

1. The clear sight line for viewing traffic approaching from both the left and the right shall use the minimum intersection sight distance detailed in the AASHTO “Green Book”. See Section 2.4.8 for sight triangle restrictions.
2. To determine the clear sight distance for viewing traffic approaching from the left, see AASHTO “Green Book” for the dimension of Leg “b” of the Departure Sight Triangle. Leg “a” for a two-lane road shall always be $\frac{1}{2}$ of the lane width + 14.5 feet. See Figure 2.1
3. To determine the clear sight distance for viewing traffic approaching from the right, see AASHTO “Green Book” for the dimension of Leg “b” of the Departure Sight Triangle. Leg “a” for a two-lane roadway shall always be 1 lane + $\frac{1}{2}$ of a lane width + 14.5 feet. The distance for Leg A and the

distances shown in AASHTO “Green Book” will vary based on the width of the roadway. See Figure 2.1

4. For private driveways, a distance of 10 feet may be used in place of the 14.5 feet dimension in the Leg “a” formula above. For private driveways that have the same function of public streets (direct connection between two public streets), the Leg “a” shall be the same as public street intersections.
5. The impacts of median height and landscaping on departure sight distance shall also be evaluated. The evaluation of the sight distance shall take into account both when the trees are newly planted and once mature.



Approach Sight Triangles for viewing traffic approaching the minor road from the left and the right.
(Minor Road is a Stop Condition - See Section 2.4.7 additional information)

Figure 2.1 – Intersection Sight Triangles

2.3.8 Sight Distance Line Criteria

1. No solid object (excluding fire hydrants and traffic control devices, **streetlights** and traffic signs) exceeding thirty (30) inches in height above the flowline elevation of the adjacent street, including but not limited to buildings, utility cabinets, walls, fences, landscape plantings, crops, cut slopes, and berms, shall be placed within sight distance lines.
2. Within sight distance lines, trees with a caliper of no greater than twelve (12) inches and a branching height no less than eight (8) feet, as measured from the adjacent street flowline, will be allowed if it can be demonstrated

that these trees will not negatively impact the vehicular sight distance. The tree species will be of a type that will naturally conform to these specifications when mature. All limbs must be maintained such that no branches fall below the 8 feet height.

3. Sight distance lines should be contained in the public right-of-way. In areas where sight lines unavoidably cross private property, a sight distance easement shall be described and conveyed to the Town. In cases, where an off-site sight distance easement is necessary, the easement must be acquired by the developer and conveyed to the Town.
4. On local residential streets, the streets and lots should be designed to avoid sight lines crossing residential lots. Where sight lines on private lots are unavoidable, the sight distance line should have minimal impact on the residential lot. Sight lines are not permitted to cross property lines that are fenced or have the ability to be fenced. Sight distance lines in the front yards of residential lots shall not encroach more than five (5) feet.
5. All sight distance lines must be shown on the site plan, landscape plans and construction drawing plan/profile sheets.
6. Sight Distance Line Criteria within the Downtown area shall be reviewed on a case-by-case basis with respect to on-street parking and existing obstructions.

2.3.9 Intersection Safety Triangle

At every intersection of two (2) or more existing or proposed streets, a safety triangle shall be calculated by extending a line twenty-five (25) feet in length at the point of the intersection of the edges of the driving surface of the corner property from the intersection corner and traversing across the property between the two (2) end points of such lines. Such a safety triangle shall be calculated for every corner of every intersection. Additionally, safety triangles shall be calculated at the intersections between all driveways or bike paths with streets and alleys utilizing a similar method with fifteen (15) foot lengths on the sides. Within these safety triangles there shall be no solid objects between two and one-half (2½) feet and ten (10) feet above street elevation. (Ord. 2001-37 §4, 2001)

2.3.10 Vertical Sight Distance

The vertical sight distance shall be verified to ensure that the sight distance along the major street is sufficient to allow a vehicle to cross or turn left, whichever is required. All vertical sight distance measurements must conform to AASHTO “Green Book” criteria.

2.4 VERTICAL ALIGNMENT

2.4.1 Vertical Curves

1. Vertical curves for all roadway types shall be designed in accordance with Table 2.2 or the latest version of the AASHTO design criteria.
2. K values exceeding 125 on curbed streets should be checked for drainage. Multiple inlets may be required within long sag vertical curves where the longitudinal slope is less than 1%.

2.4.2 Roadway Grades

1. See Table 2.2 for minimum and maximum street grades.
2. The use of grades breaks in lieu of vertical curves is discouraged. However, if a grade break is necessary and the algebraic difference in grade does not exceed one percent (1%) along the roadway, the grade break will be permitted.
3. The maximum grade break allowed at the point of tangency at a curb return for local and collector class roads shall be two percent (2%). For arterial class roads the maximum grade break at curb returns shall be one percent (1%).
4. See Table 2.3 for the maximum permissible centerline grade at intersections. These grades are maximum instantaneous flowline grades for each side of street of the minor (intersecting) street. Desirable intersection grades should be in the range of one (1) to four (4) percent for all intersecting streets with the limit of two (2) percent for arterials. ADAAG Standards for pedestrian crossings must be met at all intersections.
5. The intersection grade of the major (through) street at the intersection may be dictated by design considerations for that street. However, if the major

street intersection grade exceeds 3% the type of access and access control will be dictated by the Town. See Table 2.4

6. The length of the maximum grade (4%) for private commercial/industrial driveways shall be a minimum of 25 feet measured from the flowline intersection of the public roadway.

Table 2.3
Maximum Permissible Intersection **Approach Grades for Minor Streets**

		Major Street (Through Street)				
		Local	Minor Collector	Major Collector	Minor Arterial	Major Arterial
M i n o r S t r e e t	Local					
	Industrial	L – 95' G – 4% ¹	100' 4% ¹	100' 4% ¹	125' 4% ¹	125' 4% ¹
	Entry Street					
	Minor Collector	L – G –	100' 4% ¹	120' 3% ¹	150' 3% ¹	150' 3% ¹
	Major Collector	L – G –		120' 3% ¹	150' 3% ¹	200' 3% ¹
	Minor Arterial	L – G –			200' 2%	200' 2%
	Major Arterial	L – G –				200' 2%

L = Minimum length of maximum permissible intersection grades for minor streets.

(Measured from the flowline intersection of the minor and major street)

G = Maximum grade of the minor street within the “L” length

1 - Intersection grades shall meet the **Public Right-of-way Accessibility Guidelines (PROWAG)** for maximum grades at intersections with respect to the cross slope of the crosswalks. The maximum grade may be less than shown for street approaches that have a stop condition.

**Table 2.4
Maximum Permissible Intersection Grades for Major Streets**

M i n o r S t r e e t	Major Street (Through Street)						
		Local	Industrial	Minor Collector	Major Collector	Minor Arterial	Major Arterial
	Local	5% ¹	5% ¹	5% ¹	5% ¹	5% ¹	5% ¹
	Industrial	N/A	5% ¹	5% ¹	5% ¹	5% ¹	5% ¹
	Entry Street	N/A	N/A	5% ¹	5% ¹	5% ¹	5% ¹
	Minor Collector	N/A	N/A	5% ¹	5% ¹	5% ¹	5% ¹
	Major Collector	N/A	N/A	N/A	5% ¹	5% ¹	5% ¹
	Minor Arterial	N/A	N/A	N/A	N/A	5% ¹	5% ¹
	Major Arterial	N/A	N/A	N/A	N/A	N/A	5% ¹

1 - Intersection grades shall meet the **Public Right-of-way Accessibility Guidelines (PROWAG)** for maximum grades at intersections with respect to the cross slope of the crosswalks. The maximum grade may be less than shown for street approaches that have a stop condition.

2.4.3 Intersection Grades

1. The grade of the “through” street shall take precedence at intersections. At intersections of roadways with the same classification, the more important roadway, as determined by the Town of Castle Rock Public Works Department, shall have this precedence. The design should warp side streets to match through streets per Section 2.3.7.
2. The key criteria for determining the elevation of the curb return on the side street and the amount of warp needed on a side street transitioning to a through street are:
 - A. Pavement cross slope at the PCRs on the side street and permissible warp in pavement cross slope. (See Section 2.3.7 of these *Criteria*).
 - B. Normal vertical curve criteria (See Section 2.5 of these *Criteria*).

- C. Vertical controls within the curb return itself (See Section 2.5.4 of these Standards).
3. The elevation at the PCR of the curb return on the through street is always set by the grade of the through street in conjunction with normal pavement cross slope allowances.
 4. Carrying the crown of a side street into the through street is permitted only when drainage considerations warrant such a design.
 5. Dipping the flowline to the extent that the lip of gutter is dipped is not permitted, except as specified by Town of Castle Rock Detail Plans concerning curb opening inlets. Tipping an inlet for the benefit of drainage is also not permitted.
 6. A more detailed review shall be performed for arterial-arterial intersections to maximize drivability. Few arterial intersections will have a uniform 2.0% cross slope, the majority of them having one or more sides warped. (See Section 2.3.7 of these standards for rates of pavement warp allowed). A Plan View drawing of all arterial/arterial intersections will be required showing spot elevations on a 10-foot by 10-foot grid.

2.4.4 Curb Returns

1. Minimum fall around curb returns for flow along the curb line shall be as follows:

Table 2.5

Radius	MINIMUM FALL (FT)
15	0.30
20	0.40
25	0.50
30	0.60
35	0.70
40	0.80
50	1.00
Note	<ul style="list-style-type: none">• For Curb Returns where flows travel directly between the PCR and the PI of a crossspan, 1% is the minimum flowline grade.

	<p>1% may be used from the high point of the Curb Return to the PCR</p> <ul style="list-style-type: none"> • PROWAG standards for curb ramp cross slopes are required when curb ramps are within the curb return.
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2. Curb return profiles are required for all curb return radii equal to or greater than thirty (30) feet within the public right-of-way. A midpoint elevation along the arc length of the curb return shall be shown for all curb return radii. Curb return design shall be set in accordance with the following design procedure.
3. General standards for flowline control and profiles within the curb returns shall be as follows:
 - A. The point of tangency at each curb return shall be determined by the projected tangent grade beginning at the point of intersections (PI) of the flowlines.
 - B. The arc length of the curb return shall be computed and indicated on the drawing.
 - C. Show the corresponding flowline (or top of curb) grade for 25-feet on each roadway beyond the PCR.
 - D. Design the flowline of the curb return such that a maximum cross slope between the midpoint of the curve and the PI (tangent intersect) does not exceed eight (8) percent. Grade breaks at the PCRs will not exceed two (2) percent for local and collector streets and one (1) percent for arterials. The flowline design of the curb return will be accomplished within the return without affecting street grades beyond the PCR. Maximum vertical curves will equal the arc length of the curb return.

The elevation and location of the high or low point within the return, if applicable, is to be called out in the profile.

- E. Scale for the curb return profile shall match the plan and profile scale which the curb return is shown on.

2.4.5 Connections to Existing Roadways

1. Connections with existing roadways shall be smooth transitions conforming to normal vertical curve criteria if the algebraic difference in grade between the existing and proposed grade exceeds 1.0%. When a vertical curve is used to make this transition, it shall be fully accomplished prior to the connection with the existing improvement, and also comply with the grade requirements at intersection approaches.
2. Existing grade shall be shown for at least three hundred (300) feet, with field verified record drawings, showing stations and elevations at twenty-five (25) foot intervals. In the case of connection with an existing intersection, these record drawings are to be shown within a three hundred (300) foot radius of the intersection. This information will be included in the plan and profile that shows the proposed roadway.
3. Previously approved designs are not acceptable means of establishing existing grades. However, they are to be referenced on the construction plans, where they occur.
4. The basis of the record drawing elevations shall be the same as the design elevation (i.e. either flowline or top of curb) when possible.

2.5 ROADSIDE DESIGN CRITERIA

2.5.1 Clear Zones and Recovery Zones

1. This section shall primarily apply to streets with design speeds in excess of 30 mph. Clear zone mitigation may be applied in any other situations where an unsafe condition is proposed or observed.
2. Roadside clear zones and recovery zones shall be designed utilizing the latest version of the AASHTO Roadside Design Guide.
3. The Recovery Zone is the area adjacent to a roadway that is needed to recover a vehicle when it leaves the roadway. This area must meet certain slope requirements and be clear from any obstructions or additional safety measures may be required. On foreslopes (also called fillslopes) a slope of 4:1 or flatter is considered recoverable. Non-recoverable foreslopes (slopes ranging from 3:1 to 4:1) shall be designed in accordance with the latest AASHTO Roadside Design Guide. Critical foreslopes (slopes steeper than 4:1) shall require guardrail or other form of roadside barrier if closer to the traveled roadway than the recommended clear zone distance.
4. The Clear Zone is the distance necessary to meet the recovery zone slope requirements for safe recovery of a motor vehicle in the event it leaves the roadway. Acceptable clear zone distance shall be determined utilizing the latest version of the AASHTO Roadside Design Guide for determining clear zone distance.

2.5.2 Obstructions

Roadside obstructions include both non-traversable terrain and fixed objects (inlets, trees, buildings, pedestrians, etc.). Roadside obstructions within the clear zone are strongly discouraged. In the event that obstructions do exist within the clear zone, roadside barrier warrants shall be checked to determine if a roadside barrier is necessary. **Curb alone is not a sufficient roadside barrier.** In the event warrants are met, the applicant shall be responsible for providing an acceptable type of roadside barrier.

2.5.3 Guard Rail

Guard Rail requirements shall meet or exceed the minimum standards set for in the AASHTO Roadside Design Guide. Guard Rail options may also be selected using the CDOT Standards.

2.6 OFFSITE DESIGN

1. The design grade, and existing ground at the design grade, of all roadways that dead end due to project phasing, subdivision boundaries, etc., shall be continued, in the same plan and profile as the proposed design, for at least five hundred (500) feet or to its intersection with an arterial roadway as determined by the Public Works Department. This limit shall be extended to one thousand (1,000) feet when arterial roadways are being designed.
2. If the offsite roadway, adjacent to the proposed development is not fully improved, the developer is responsible for the design and construction of a transition for the safe conveyance of traffic from the improved section to the existing roadway. The roadway transition should occur in the offsite area.

2.7 AUXILIARY LANES

2.7.1 Deceleration & Acceleration Lanes

1. The need for deceleration lanes shall be determined through an analysis in the approved Traffic Impact Analysis for the Site Plan or Final Development Plan.
2. Requests for exemption from the requirements for deceleration lanes shall be based upon a traffic engineering study that presents trip generation data for the proposed development in terms of impacts upon through traffic flows. Such requests shall be reviewed by the Town and may be approved, except if any of the following conditions exist during the long range traffic planning horizon:
 - A. For exemption of a right turn deceleration lane, the traffic volume in the travel lane must fall below 150 VPH during both the A.M. and P.M. peak hour.

- B. For exemption of a left turn deceleration lane, the opposing traffic volume must fall below 100 VPH during both the A.M. and P.M. peak hour.
 - C. Other unique conditions that warrants special design consideration.
3. Deceleration lanes may be required along segments of collector streets if the proposed development constitutes a potential for creating a traffic hazard or unnecessarily impedes through traffic movements. In the event deceleration lanes are required for a collector roadway, the designing engineer shall conform to all of the deceleration lane design standards detailed in the latest edition of the AASHTO “Green Book”.
 4. Deceleration lanes shall have a minimum paved width of ten (10) feet.
 5. The design standards for deceleration lanes on Arterial roadways were determined using the minimum standards set forth in the State of Colorado’s “State Highway Access Code - Volume 2”. The following tables detail the requirements for the determination of Roadway Classification, Acceleration and Deceleration Lengths, Taper Lengths, Storage Lengths and when each of the criteria should be accounted for in design.
 6. The access classification should be determined by utilizing the Town’s Transportation Master Plan roadway designations and then determining the corresponding access classifications. The table below lists the Access Classification for Collectors and Arterial Roadways:

**TABLE 2.6
ACCESS CLASSIFICATION
FOR COLLECTORS AND ARTERIALS**

ROADWAY TYPE	ACCESS CLASSIFICATION
MINOR COLLECTOR	NR-C
MAJOR COLLECTOR	NR-C
MINOR ARTERIAL	NR-B
MAJOR ARTERIAL	NR-B

From the State of Colorado’s State Highway Access Code Volume 2, Code Of Colorado Regulations 601-1.

7. The components of Speed Change Lanes vary based on the roadway access classification. The table below lists the components for speed change lanes for each access classification:

**TABLE 2.7
COMPONENTS OF SPEED CHANGE LANES LENGTH
FOR COLLECTORS AND ARTERIALS**

ACCESS CLASSIFICATION	LEFT TURN DECELERATION	RIGHT TURN DECELERATION	ACCELERATION
NR-B	TAPER + STORAGE	TAPER + STORAGE	ACCEL. LENGTH
NR-C	TAPER + STORAGE	TAPER + STORAGE	ACCEL. LENGTH

From the State of Colorado's State Highway Access Code Volume 2, Code Of Colorado Regulations 601-1.

8. The minimum Acceleration and Deceleration Lengths for Major Collectors and Arterials are detailed in the following table:

**TABLE 2.8
ACCELERATION AND DECELERATION LENGTH
FOR MAJOR COLLECTORS AND ARTERIALS**

DESIGN SPEED	MIN. LENGTH (FEET) ACCEL.	MIN LENGTH (FEET) DECEL.
30	190	250
35	270	310
40	380	370
45	550	435

9. Minimum storage length required based on turning vehicles per hour is detailed in the following Table 2.9. The required storage length may be distributed over multiple turn lanes.

**TABLE 2.9
ACCELERATION AND DECELERATION STORAGE LENGTH
FOR COLLECTORS AND ARTERIALS**

VEHICLES PER HOUR	BELOW 30	30	60	100	200	300
REQUIRED LANE LENGTH	25'	40'	50'	100'	200'	300'

10. The lead-in taper length for the deceleration lane shall be based upon the posted speed limit along the street, except that a minimum of one hundred sixty (160) feet shall be required. The following table details the taper ratios for each possible posted speed limit:

**TABLE 2.10
DECELERATION TAPER LENGTH
FOR COLLECTORS AND ARTERIALS**

POSTED SPEED (MPH)	TAPER RATIO
30	8:1
35	10:1
40	12:1
45	13.5:1
50	15:1

11. **Auxiliary** lanes and the associated signage and pavement marking shall be installed prior to the issuance of any Certificate of Occupancy within the development.
12. **Curb and gutter transitions from through lane section to turn lane sections shall use radii.**
13. **Shifts in through lane alignments to accommodate auxiliary lanes must meet MUTCD and/or AASHTO standards.**

2.8 CUL-DE-SACS

2.8.1 Geometry

1. The following criteria shall be used for cul-de-sac horizontal geometry:

Minimum right-of-way radius	50 feet
Minimum flowline radius	43 feet
Maximum length of cul-de-sac, (as measured along and between the radius point and the ROW line of the abutting street whichever is greater)	1,200 feet or a maximum of 40 dwelling units

2. Cul-de-sac lengths over 600 feet require structures with built-in fire suppression. (for those structures beyond 600').

2.8.2 Number of Dwelling Units with a Single Access

The number of dwelling units with a single access shall generally be as described in Section 2.9.1.1. If an Entry street (main access to subdivision) is the single access to a group of homes, depending on the internal street alignments, up to 100 dwelling units may be allowed with written approval of the Fire Department. Factors that affect the allowable dwelling units with a single access are: the length of the streets from a through Collector or Arterial; if, after entering the Development, there is a circle drive so there is more than one way to get to a particular dwelling unit; topography; vegetation; and other considerations deemed important by the Town for emergency access.

2.9 ENTRY STREETS

1. Only minor collectors or entry streets may connect residential neighborhoods to major collectors or arterials. When minor collectors are not appropriate, entry streets shall be used and meet the following criteria:
 - A. A typical cross section for an entry street is shown in Appendix A. Entry streets shall be a minimum of 200' in length and/or shall extend to the

first intersection from the arterial or collector. No driveway access shall be allowed. Entry streets shall be posted "No Parking".

- B. An "entry street" is considered a lower classification street than a collector but greater than a local street. Therefore, for example, entry street criteria for separation between intersections along a minor collector cannot be used to place a collector street within 160 feet of another intersection.

2.10 MEDIAN ISLANDS

1. No permanent improvements (trees, poles, large rocks, etc.) shall be placed within 10 feet of the traveled lane unless a raised planter box median (per Town of Castle Rock Detail Plans) is constructed. Permanent improvements shall not obstruct sight distance or violate clear zone requirements. Planter boxes may be allowed in raised medians on Entry Streets, Major Collectors and Arterials on a 'case-by-case' basis as approved by the Town.
2. The nose of the median island shall not extend past the curb return at the intersection. Each intersection with median islands must be designed using the appropriate design vehicle and associated turning clearance requirements for the functional classification of the roadway. The higher class roadway shall take precedence for design vehicle. Diagrams using turning templates of the design vehicle may be required as part of the roadway plan submittal. Tapered curbs should be included at the end of the median. ~~Median islands shall be constructed with "catch" gutters and necessary storm inlets.~~
- ~~3. Landscaping on median islands shall have a mature height of 24 inches or less above the traveled way in areas around intersections to facilitate adequate sight distance (See Section 2.4.8) and will preferably be dry land or native vegetation. If irrigation is planned for a median island, mitigation shall be provided to protect the subgrade under the pavement from being saturated. The Town will consider proposals for mitigation including edge subsurface drains per CDOT M & S Standards.~~

4. A minimum flowline to flowline roadway dimension of 18 feet must be maintained on both sides of all median islands to accommodate disabled and emergency vehicles.

~~5. When median islands are designed for concrete streets and the island is hardscaped, two thicknesses of expansion material shall be installed on each side of the median between the back of curb and "hardscape" and sealed.~~

6. Median islands four (4) feet wide or less may not be landscaped and must be hardscaped. See the Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria Manual for acceptable hardscapes.

2.11 SECONDARY ACCESS AND FIRE LANES

2.11.1 Design Criteria

1. Any secondary access roads, including fire lanes, not constructed as part of the public street system shall meet the following design criteria in addition to the roadway design criteria within this manual.

- A. The slope of the access road shall be a minimum of 1% and a maximum of 8%.
- B. The cross slope of the access road shall be a minimum of 1% and a maximum of 4%.
- C. The lane width shall be a minimum of 20 feet.
- D. There shall be a minimum of 18 feet of vertical clearance over the entire access road.
- E. The surface of the roadway must be paved. All pavements shall be designed in accordance with Section 14 – Pavement Design.
- F. The fire lane shall be equipped with a gate that is approved as a "break away" by the Fire Department. An electronic detection system (i.e. Opticom) may also be required.
- G. The Owner shall be responsible for maintenance of the emergency access including snow removal, gate and electronic detection system.

2.11.2 Fire Lanes

Fire lanes shall be required when safe access to structures within a project area is limited. Fire lanes require approval of the Town's Fire Department.

2.11.3 Alleys

- A. Where proposed, alleys should be open at both ends of a block.
- B. An approved turnaround area, capable of accommodating fire department vehicles, shall be provided in dead-end alleys with lengths exceeding 150 feet.
- C. Public and private alley pavements require the submittal of a Pavement Design Report for Town review and approval.
- D. Alleys are not considered primary access to parcels.
- E. The spacing requirement for alleys shall be consistent with Local streets.

2.12 RAILROAD CROSSINGS

All railroad crossings shall be designed in accordance with AASHTO “Green Book” and must be approved by the affected railroad company.

2.13 CONSTRUCTION TRAFFIC CONTROL

2.13.1 Vehicular Traffic

1. Construction work zone traffic shall be controlled by signs, barricades, detours, etc. which are designed and installed in accordance with the MUTCD, most recent edition, and applicable Castle Rock Traffic Standards.
2. A traffic control plan shall be submitted and approved by the Public Works Department prior to the start of any construction or work in the right-of-way.
3. All street closures will require a permit from the Town must be submitted 7 days prior to lane closure and 21 days prior to a street closing.
4. Newly constructed roadways shall not be opened until the roadway is conveyed to and accepted by the Town.
5. The MUTCD shall be the basis upon which the construction traffic control plan is designed. All necessary signing, striping, coning, barricading, flagging, etc., shall be shown on the plan.

6. Town streets shall not be closed overnight.
7. Street or lane closures will not occur before 8:30 a.m. or after 3:30 p.m. If exceptions to this are required, this shall be so noted on the construction traffic control plan.
8. Directional access on roadways may be restricted, but proper controls including flagging, are required.
9. Removal of on-street parking should be considered, and noted where applicable.

2.13.2 Pedestrian Traffic

1. Pedestrian access shall be maintained on the existing sidewalks at all times or as approved by the Town.
2. Where construction interrupts the continuity of the sidewalk, suitable bridge or deck facilities shall be provided, to be supplemented by the use of such devices and measures as prescribed in the Manual of Uniform Traffic Control Devices (MUTCD) most recent edition, for the safe and uninterrupted movement of pedestrian traffic.
3. The edges or ends of the pedestrian bridge or decking shall be beveled or chamfered to a thin edge to prevent tripping.
4. Temporary diversion walkways shall be hard surfaced and electric lighting shall be provided and kept continuously burning during hours of darkness.
5. **Flaggers** shall be provided for guidance as necessary.
6. Pedestrians shall not be channeled to walk on the traveled portion of a roadway.
7. Under certain conditions, it may be necessary to divert pedestrians to the sidewalk on the opposite side of the street. Such crossings shall only be made at intersections or marked pedestrian crossovers.

2.13.3 Barricades

- 1.** Whenever roadways terminate due to project phasing, subdivision boundaries, etc., barricades shall be installed and maintained.
- 2.** Design and installation shall comply with the requirements of the MUTCD, most recent edition.
- 3.** The barricades shall be shown on the construction drawings.

Section 3

ACCESS REQUIREMENTS & CRITERIA

3.0 ACCESS APPROVAL PROCESS

3.0.0 Access to public right-of-way is approved through one of two processes:

1. For new development or development amendments, access is approved through the process outlined in the Town's *Procedures Manual*.
2. For properties modifying the access to public right-of-way, approval may be acquired through the Construction Permit process. These processes are explained in more detail below.
 - A. For new development or redevelopment of parcels in the Planned Development (PD) zones or Straight zones that require a Site Development Plan or a Site Development Plan Amendment, the new or altered access will be reviewed and approved through the Town's Site Development Plan process. A Site Development Plan application accompanied by appropriate plans for the access and technical justifications for its location, size, and extent of improvements will be necessary.
 - B. For existing developed parcels that are proposing minor changes to their access or changes that are only in the public right-of-way, and do not require a Site Development Plan Amendment, the access may be reviewed and approved through a Construction Permit process.

The Town's Technical Review Committee (TRC) is available to provide advice on the extent of technical justification required for any access request. It is recommended that this advice be sought prior to submitting any application.

3.1 CRITERIA FOR ACCESS ONTO ROADWAYS

3.1.1 Access onto State Highways

1. For specific technical criteria regarding access spacing, widths, turn lanes, alignment, grades and other roadway design criteria, see Section 2, Roadway Design and Technical Criteria.
2. The State Highway Access Code governs access onto State Highways.

3. All access onto State Highways is controlled by the CDOT. The Town of Castle Rock has no jurisdictional authority over access onto a State Highway. The Town reserves the right to deny any proposed access location, including access that may meet CDOT requirements. The Town is not the issuing authority for access permits on State Highways.

3.1.2 Interstate 25

1. CDOT and FHWA rules and regulations shall apply to all Interstate Highways.
2. CDOT and the FHWA control all accesses onto interstates. The Town has no jurisdictional authority over access onto an interstate. The Town reserves the right to deny any proposed access location, including access that may meet CDOT and FHWA requirements

3.1.3 Major Arterials

1. A detailed Traffic Impact Analysis (see Section 7) shall be completed for any proposed access point to a major arterial to ensure adequate levels of service can be maintained if the access is allowed to be constructed. An Access Management Plan may be required.
2. Generally, no private direct access onto major arterials shall be permitted unless a signal progression plan has been approved and it is determined that the proposed access will cause no significant impacts to traffic operations. Private direct access to a major arterial may be permitted only when the property in question has no other reasonable access to the general roadway network, or when denial of a direct access to a major arterial will cause unacceptable traffic conditions and/or safety problems on an alternative lower classified roadway. When direct private access must be provided on a major arterial roadway, the following shall be considered prior to approval of the proposed access location:
 - A. Such access shall continue only until such time that some other reasonable access to a lower classification roadway is available and permitted. The approval documents should specify the future reasonable access location, if known, and under what circumstances the modifications will be triggered and what changes will be required.

- B. No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that: (1) allowing only one access conflicts with safety regulations (i.e. Fire access), or (2) additional access would significantly benefit safety and operation of the major arterial and is necessary to the safe and efficient use of the property.
 - C. An access shall be limited to right-turn only movements, unless (1) it has the potential for future signalization or a roundabout, (2) left turns would not create unreasonable congestion or safety problems and lower the overall intersection level of service, and (3) alternatives to the left turn movements would cause unacceptable traffic conditions and safety problems to the general roadway network.
- 3. Direct public access onto a major arterial roadway, where left turns are permitted, shall meet the signalization spacing criteria in Section 3.2.3.4 Those that do not meet these requirements shall be limited to right turn only movements unless they meet the requirements in Section 3.2.3.4.C. No local streets shall be permitted to intersect with major arterials. However, in some situations, Entry Streets may be used to transition from a local street to a major arterial.
- 4. Spacing and Signalization Criteria:
 - A. Refer to Figure 3.1 for spacing requirements.
 - B. In general terms, full access to major arterials shall be limited to one-half (1/2) mile intervals or more, plus or minus 200-feet, in order to achieve good speed, capacity and optimal signal progression.
 - C. An approved traffic engineering analysis of signal progression shall be completed to properly locate any proposed access that may require signalization. The consultant for the applicant shall contact the Town's Traffic Engineering Division for direction in preparing the signal progression analysis.

3.1.4 Minor Arterials

1. A detailed Traffic Impact Analysis shall be completed for any new proposed access point on a minor arterial to ensure adequate levels of service prior to issuance of an access permit.
2. Generally, no private direct access onto a minor arterial shall be permitted unless a signal progression plan has been approved and it is determined that the proposed access will cause no significant impacts to traffic conditions. Private direct access to a minor arterial may be permitted only when the property in question has no other reasonable access to the general roadway network, or when denial of a direct access to a minor arterial will cause unacceptable traffic operations and/or safety problems on an alternative lower classified roadway. When direct private access must be provided on a minor arterial roadway, the following shall be considered prior to approval of the proposed access location:
 - A. See 3.2.3.2 A, B, & C
 - B. Location has the potential for signalization or roundabout, if it meets spacing requirements for intersecting public roadways stated in 3.2.4.4 and does not interfere with the location, planning and operations of the general roadway network and access to nearby properties.
3. Public direct access onto a minor arterial roadway, where left turns are permitted, shall meet the signalization spacing criteria in Section 3.2.4.4. Those that do not meet these requirements shall be limited to right turn only movements, unless they meet the requirements in Section 3.2.3.2.C No local streets shall be permitted to intersect with minor arterials. However, in some situations, Entry Streets may be used to transition from a local street to a minor arterial.
4. Spacing and Signalization
 - A. Refer to Figure 3.1 for spacing requirements.
 - B. In general terms, full access onto minor arterials shall be limited to one-quarter (1/4) mile intervals, plus or minus approximately 200-feet,

in order to achieve good speed, capacity and optimum signal progression.

- C. However, to provide flexibility for both existing and future conditions, an approved traffic engineering analysis of signal progression shall be completed to properly locate any proposed access that may require signalization. The consultant for the applicant shall contact the Town's Traffic Engineering Division for direction in preparing the signal progression analysis.

3.1.5 Major and Minor Collectors

1. Single-family residential access onto collectors is not permitted within new developments. See Section 3.3 Curb Opening and Driveway Criteria.
2. Public streets shall intersect minor collectors no closer than 330 feet from each other (centerline to centerline), and shall intersect major collectors no closer than 660 feet from each other (centerline-centerline). On minor collectors, the closest local street intersection to an arterial shall be 400 feet (centerline of arterial to centerline of a local street) and on major collectors shall be 660 feet from the arterial (centerline of arterial to centerline of a local street). Further study may be required at the discretion of Town Staff, regarding access location and spacing.

3.1.6 Local Streets

1. Residential driveway locations shall be no closer than 20-feet from the Point of Curb Return (PCR) of a local street intersection.
2. Public streets should not intersect local roadways closer than 150 feet from each other (centerline to centerline). On a local street, the closest intersection to a collector street shall be at least 200 feet (centerline to centerline). The developed portion of a lot should not face directly into the oncoming traffic of an intersecting street of a "T" intersection.

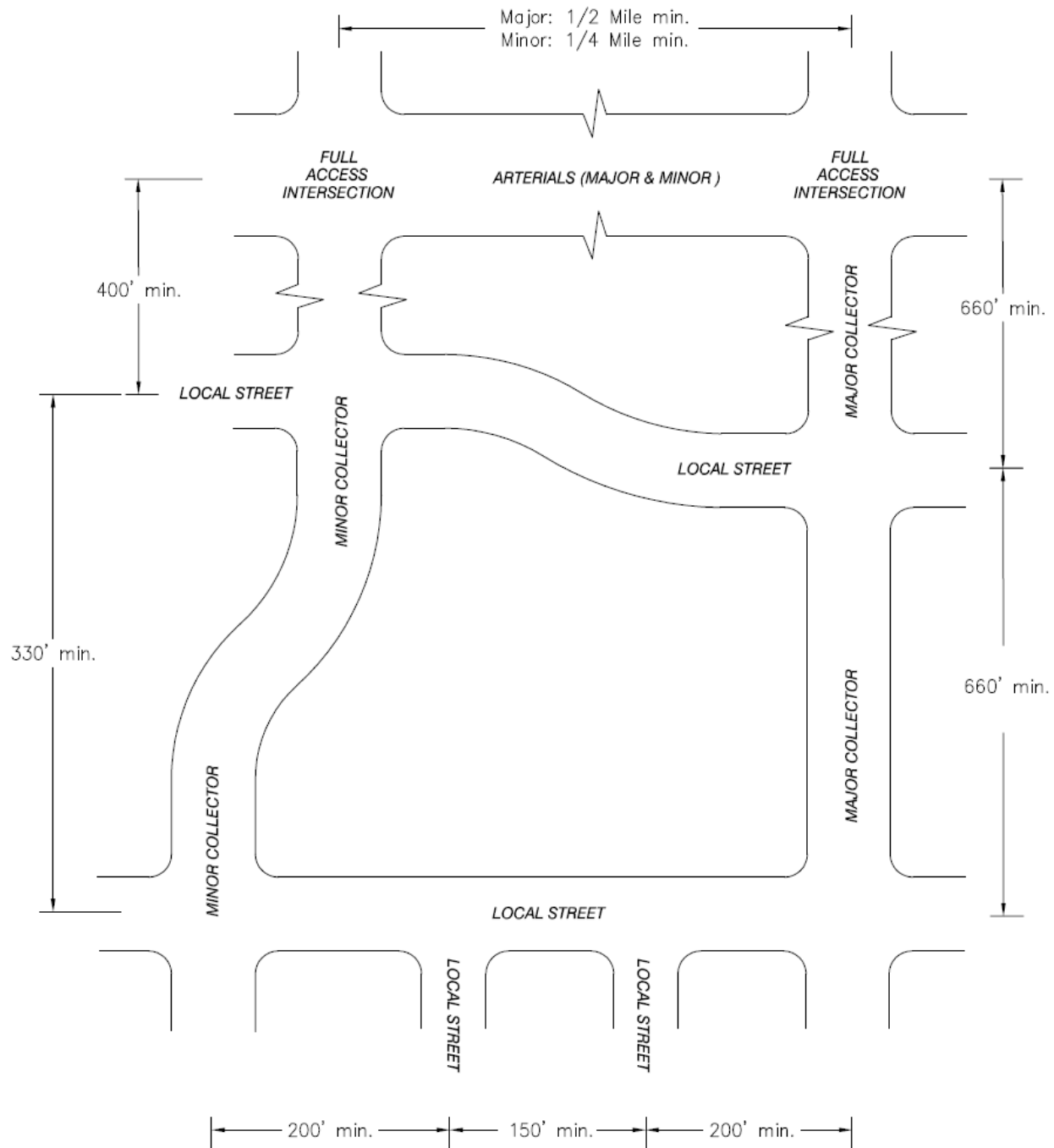


Figure 3.1 – Intersection Spacing

3.2 BASIC PRINCIPLES FOR CURB OPENINGS AND DRIVEWAYS

3.2.1 Curb Openings

1. Certain design criteria for curb openings and driveways require minimum dimensions in some instances and maximum dimensions in others. The design of curb openings and driveways within the range of these dimensions will provide for good service on the part of the motorist using the driveway while at the same time minimizing the interference to the traffic using the street. By controlling the location and width of openings or driveways along the street, it will be possible to avoid or eliminate long open stretches where motorists can indiscriminately access onto the street. The width of opening established in these *Criteria* is based on studies, which indicate that the various width openings will accommodate vehicles of maximum size authorized on our Town Streets. In case of conflict between requirements in the various sections of these *Criteria*, the more restrictive condition shall normally apply.
2. The curb opening or driveway width should be adequate to properly handle the anticipated traffic volume and traffic characteristics, as well as being within the limits specified for the type of property development.
3. The curb opening or driveway shall be designed to accommodate emergency response vehicles.
4. See Section 2.3.3 Driveways criteria.

3.2.2 Sight Distance

1. All openings for driveways shall be located at the point of optimum sight distance along the street. For openings and driveways to commercial establishments and service stations there shall be sufficient space reasonably cleared of any obstructions such that drivers entering the property will have sufficient sight distance to enable them to make proper and safe movements. The profile of a driveway approach and the grading of the adjacent area shall be such that when a vehicle is located on the driveway outside the traveled portion of the street the driver can see a sufficient distance in both directions so as to enable the driver to enter the

street without creating a hazardous traffic situation. See Section 2.5.2 for maximum driveway grades.

2. Sight distance for curb openings to private property shall meet all sight triangle and sight line requirements detailed in Section 2.4. This does not apply to single-family residential driveways using mountable curb, gutter, and sidewalks.

3.2.3 Utility Conflicts and Abandoned Driveways

Any adjustments which must be made to utility poles, street light standards, fire hydrants, catch basins or inlets, traffic signs and signals, or other public improvements or installations which are necessary as the result of the curb openings or driveways shall be accomplished without any cost to the Town. Driveways shall not interfere with operations or locations of any drainage appurtenances or handicap ramps. Also, any curb opening or driveway, which has been abandoned, shall be restored by the property owner except where such abandonment has been made at the request of, or for the convenience of, the Town.

3.2.4 Entry/Exit Only Access

Driveway approaches, where the driveway is to serve as an entrance only or as an exit only, shall be appropriately signed by the property owner at their sole expense. The property owner will be required to provide some means of ensuring that the motorists will use the driveway as it is shown on the construction plans.

3.2.5 Access to Roadways with No Curb and Gutter

1. Driveways shall extend from the ROW line to edge of existing driving surface and shall be constructed of either:
 - A. A minimum of 3" thick asphalt pavement over 6" thick aggregate base material Class 6 or according to the pavement design report.
 - B. A minimum of 4" thick concrete pavement over 6" aggregate base material Class 6 or according to the pavement design report.

2. The driveway shall be a maximum of 30-feet wide in the Town ROW.
3. A minimum 24" diameter corrugated metal pipe (CMP) culvert shall be installed at the established roadside ditch flowline beneath the private drive access. The applicant is responsible for providing adequate design sizing for the CMP culvert with the Drainage Study or as a separate document. At no time will it be acceptable for asphalt or concrete pavement to be placed directly on the culvert.

3.2.6 Maintenance of Private Access onto Town ROW

Maintenance of private driveway access within the public right-of-way shall be the responsibility of the property owner. Maintenance of drainage improvements described in Section 3.3.5 shall be the responsibility of the property owner.

3.2.7 Definition of Terms

Several terms are used herein, which have a somewhat distinct meaning. For the purpose of clarity, the definition of some of these terms is listed below:

1. **Width of Curb Opening** – The width of curb opening measured along the curb line excluding the curb returns.
2. **Edge Clearance** – the distance measured along the curb line from the nearest edge of the curb opening to a point where the property line extended intersects the curb.
3. **Corner Clearance** – At an intersecting street, the distance measured along the curb line from the projection of the intersection street flowline to the nearest edge of the curb opening.
4. **Setback** – The lateral distance measured perpendicular to the street right-of-way line and extending from the right-of-way line to the closest point on a structure.
5. **Frontage** – The distance along the street right-of-way line of a single property or development within the property lines. Corner property at an intersection would have separate frontage along each street.

6. **Residential** – Property used primarily for residential purposes such a single family, two family and multi-family units.
7. **Single Family (SF) Residential** – Single, detached family dwelling units or double bungalows or duplexes.
8. **Multi Family (MF) Residential** – Three or more attached dwelling units including townhouses, condominiums and apartments.
9. **Commercial** – Establishments where buying and selling of commodities, entertainment or services is carried on, excluding services stations. Included are such uses as office building, restaurants, hotels, motels, banks, grocery stores, theaters, parking lots, trailer courts, public buildings
10. **Industrial** – Establishments that manufacture or store an article or product.
11. **Service Station** – Any property where flammable liquids used as motor vehicle fuel are stored and dispensed from fixed equipment into fuel tanks of motor vehicles.

3.3 GENERAL ACCESS REQUIREMENTS

3.3.1 Number of Openings

1. **SF Residential** – In general, each SF residential property shall be limited to one access point. Additional access points shall be reviewed by the Town on a case by case basis.
2. **MF Residential** – In general, access shall be determined by information provided by owner/developer in the Traffic Impact Analysis and by comments generated during Town’s review and acceptance of the traffic study.
3. **Commercial and Industrial** – In general, commercial and industrial properties having less than 150-feet of frontage and located mid-block shall be limited to one access point to the street. An exception to this rule may be where a building is constructed in the middle of the lot and parking is provided for on each side of the building. A second access point may be allowed for commercial property located on a corner for properties having greater than 150-feet of frontage, if the additional proposed access is

determined by Town Staff to be acceptable and the proposal is justified in the Traffic Impact Analysis.

4. Properties may be required to combine and share access points to Town streets. See Section 3.4.5.

3.3.2 Amount of Curb Opening Permitted

The total length of curb opening on a roadway for access to a commercial property shall not exceed 35 feet. This requirement does not apply to residential type curb openings.

3.3.3 Entrance Angle

In general, the entrance angle for all driveways shall be perpendicular to the centerline of the street being accessed. The entrance angle may vary 10° from perpendicular or 10° from the radial bearing.

3.3.4 Minimum Space between Openings

The minimum spacing between curb openings shall be 35 feet measured at the curb line. This spacing will apply to the distance between drives serving a single property or adjoining properties. This does not apply to residential projects using mountable curb, gutter and sidewalks. 50-foot spacing applies to commercial openings.

3.3.5 Joint Entrances

Whenever possible and feasible, joint entrances shall be provided to serve two adjacent properties. Joint entrances should be centered on the common property line. Joint entrances shall require the execution of a Joint Access Easement Agreement between the adjacent property owners.

3.3.6 Access Approaches for Areas Requiring Backing Maneuvers

Access approaches shall not be permitted for parking or loading that requires backing maneuvers within Town right-of-way. All off-street parking areas must include on-site maneuvering areas and aisles to permit user vehicles to enter and exit the site in forward direction. Alleys within Town right-of-way

shall be reviewed on a case-by-case basis to determine if vehicles backing into the alley right-of-way is acceptable.

3.3.7 Unused Access Points

If a parcel of land with direct access has been in a state of non-use for more than four years, recommencement of access use shall be considered a change in use. If the use of the access exceeds the design limitations of the access point or is non-conforming to present design criteria, a new permit may be required.

3.3.8 Changes in Access Use

If the use of existing access to Town right-of-way changes, or there is a change in the use of the property, the access type will be reviewed for compatibility with the proposed use in the Town's plan review process. Change in access or property use may include, but is not limited to, change in volume or type of traffic, structural modifications to the building, remodeling of the structure, change in type of business, expansion in an existing business, change in zoning or change in property division creating new parcels.

3.3.9 Control Dimensions

To accomplish the objectives of the basic principles stated earlier, certain control dimensions are necessary. There are many variables that affect these control dimensions. Some of the variables are as follows: type of roadway classification, type of property development, volume of traffic and width of right-of-way.

3.3.10 Width of Curb Opening

The total width of curb opening for properties on various roadway classifications shall be in conformance with Table 3.1

**TABLE 3.1
WIDTH OF CURB OPENING - MAXIMUMS**

	RESIDENTIAL				
	SF	MF	COMMERCIAL /INDUSTRIAL	SERVICE STATION	
MAJOR ARTERIAL	N/A				
MINOR ARTERIAL	N/A				
MAJOR COLLECTOR	N/A	30'	35'	40'	
MINOR COLLECTOR	N/A	30'	35'	35'	
LOCAL	30'	30'	35'	35'	

Notes: Curb openings of 30-feet or more must be constructed with radius curb returns. For curb return driveways, the measured width of the driveway does not include the curb returns.

3.3.11 Corner Clearance

It is important to locate driveways away from major intersections. This constraint is as much for the ability to enter and exit the property as for the benefit of intersection safety and operations. Exiting a driveway during peak hour conditions at a signalized intersection is difficult because the queue of standing or slow-moving vehicles may not allow a sufficient gap for entry from the driveway. See Figure 3.2 for acceptable corner clearance distances.

MINIMUM CORNER CLEARANCE			
	CLASS OF MAJOR ROADWAY		
ITEM	ARTERIAL	COLLECTOR	LOCAL
A	115	75	50
B	85	85	50
C	115	75	50
D	115	75	50
E	210	115	50
F	210	115	50
G	50	50	50
H	210	115	50

NOTE:

This table does not apply to single family residential driveways. Single family residential driveways must access on the street of the lowest classification and at the side of the lot furthest away from the intersection.

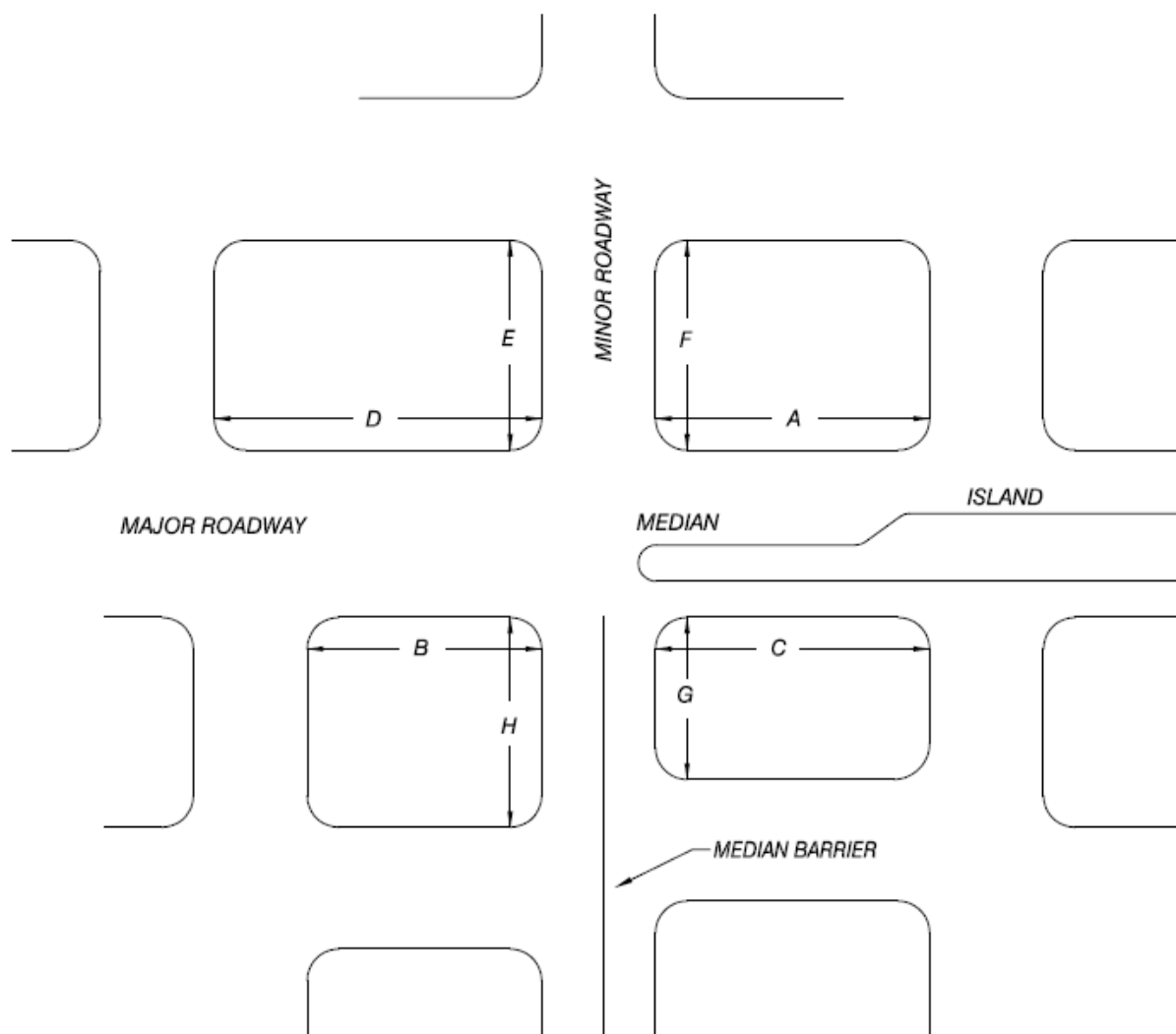


Figure 3.2 – Driveway Corner Clearances

3.3.12 Large Parking Areas

Large parking areas (250 parking spaces or greater) must provide a minimum throat length of two hundred (200) feet from the edge of the right-of-way to the nearest parking aisle, driving aisle, or parking space. The minimum throat length may be adjusted if justified by a traffic impact analysis.

3.4 UNPERMITTED ACCESS

Any access, driveway, or curb cut that is constructed within public ROW without the approval of the Town shall be subject to a “Stop Work Order” and shall be removed immediately. Failure to remove the unpermitted access may result in removal of said access by the Town (at the property owner’s expense). Failure to comply with the “Stop Work Order” may result in Town legal action and prosecution of the violators.

Section 4

TRAFFIC SIGNAL DESIGN

4.0 GENERAL INFORMATION

4.0.0 Scope

This section describes general signal design requirements for use in the Town of Castle Rock. It is the intent of the Town to first consider methods of traffic control other than traffic signals to control traffic at intersections. Other desirable methods include the use of roundabouts and innovative intersection designs.

4.0.1 Pre-Design Meeting with Traffic Engineering and Operations Division

Prior to beginning traffic signal design, a pre-design meeting may be requested by either the Town or the design consultant. A pre-design meeting is recommended.

4.1 TRAFFIC SIGNAL DESIGN CRITERIA

4.1.1 General Signal Design Requirements

1. All design elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.
2. All traffic signal equipment, structures and foundations shall be designed in accordance with CDOT's Traffic Signals and Lighting, Town of Castle Rock Detail Plans and Signal Construction Specifications, and CDOT Standard Specifications for Road and Bridge Construction.
3. All equipment and materials specified must conform to current CDOT specifications and be submitted for approval to the Traffic Engineering and Operations Division, prior to signal construction.
4. A sufficient pedestrian landing area that meets the Americans with Disabilities Act (ADA) requirements must be provided. Public Right-of-Way Accessibility Guidelines (PROWAG) are recommended best practices and are considered the state of the practice for areas not fully addressed by the present ADA standards.

5. All traffic signals for permanent installations shall use mast arm poles (RAL 6012 black green in color). Span wire applications may only be used for temporary signal installations.
6. All traffic signal poles, conduit and equipment must be located within public rights-of-way or easement.

4.1.2 Signal Head Placement and Sizes

1. All signal head placement and sizes shall comply with the latest MUTCD standards.
2. Far left and far right traffic signals should be provided. It is desirable to have a single head for each exclusive left turn lane and through lane. The need for one signal head per right turn lane should be determined on a site-specific basis.
3. Pedestrian signal heads **should** be provided for all marked crosswalks. Where pedestrian signal heads are provided, corresponding pedestrian push buttons **shall be provided**. All pedestrian signals shall be **"countdown" type and shall meet ADA requirements. Pedestrian signals must be 16-inch LED "Man/Hand" indication. Audible Separate bicycle signals shall be provided on a case-by-case basis as determined by Traffic Engineering and Operations Division, prior to signal construction.**
4. Where left turn arrows are included, at least two signal heads with left arrow sections shall be provided, with one of these located on the far left pole. 4-section flashing yellow arrow signal heads will be required for permissive left turn operation. If no protected left turn is necessary, 3-section flashing yellow arrow signal heads shall be used.
5. ~~All mast arm and span wire mounted signal heads shall have aluminum louvered back plates, black in color, with yellow reflective tape along the edges.~~ All mast arm and span wire mounted signal heads shall have aluminum louvered back plates either retroreflective yellow in color, or black in color with yellow retroreflective tape along the edges.
6. All signal heads shall have 12-inch lenses and shall be LED with tunnel visors. All indications shall be wide-angle, LED type lamps and meet ITE specifications for LED traffic signal indications. All pedestrian indications

shall also be LED type lamps. ~~Back plates and Tunnel~~ visors shall be installed on all signal faces and shall be black or green in color. The same color shall be used for all vehicular and pedestrian signals at an intersection.

7. Where mast arms extend over the left turn lane(s), “left turn only” sign(s) should be provided. Double lefts may be covered with one “left turn only” sign (R3-5) per lane, or one “double left turn only” sign located over the lane line between left turn lanes.
8. “Yield to pedestrian” sign(s), “right turn only” sign(s), and “combined through/right turn” lane use sign(s) shall be used if applicable.

4.1.3 Pole and Cabinet Placement

1. All signal poles, pedestals and cabinets shall be located so that there will be a minimum of 3 feet between the face of traffic signal equipment and the face of curb when curbing is present. The desirable separation is 5 feet.
2. The same separations noted above shall apply from face of traffic signal equipment to outside edge of shoulder when there is no curbing present. In this situation there should be a minimum of 5 feet between the face of traffic signal equipment and the edge of pavement. The desirable separation is 7 feet.
3. All pedestrian pushbuttons shall adhere to most current ADA and PROWAG standards including, but not limited to, location, spacing, height, and horizontal distance from walkway. ~~Poles shall be located so that pedestrian push buttons shall be within 5 feet of the point at which pedestrians will begin their crossing maneuvers.~~ Pedestrians will have unobstructed access to pedestrian signal pushbuttons. If a pole cannot be located within 5 feet, a separate pedestrian push-button post shall be installed.
4. The traffic control cabinet shall be placed in a location such that placement allows a technician working within the cabinet clear visibility of the intersection and approaching traffic from all directions. The cabinet should be located on the corner that does not block the view of side street traffic for ‘right turn on red’ vehicles.

4.1.4 Materials

1. The Controller shall be an Econolite Cobalt ATC traffic controller with ASC/3-LX software, or as specified at the time of design by the Town's Traffic Engineer.
2. The minimum cabinet size is to be 332, with "I", "J", and "K" files, with a single door on each side. Medeco electronic locks shall be provided for both doors in place of standard #2 key locks.
3. A Tesco uninterrupted power supply (22-000 BBS or newest model) ~~by Tesco~~ with ~~up to~~ a minimum of six gel batteries for auxiliary power shall be piggyback mounted to the cabinet.
4. Vehicle detection is to be provided by a nonintrusive devise (video, radar, or infrared), with advanced detection on the main street, as directed by the Town's Traffic Engineer. Inductive loops shall not be utilized unless requested by the Traffic Engineering and Operations Division.
5. All new signalized intersections shall include a fiber optic connection to the existing fiber optic network and be integrated into the Town's ~~Centra~~ traffic communication system.
6. Adaptive traffic control may be in operation on Town corridors and may be required for new traffic signals depending on the location of the new traffic signal. This shall be confirmed by the Town's Traffic Engineer at the time of design.
7. All materials must be approved by the Town prior to installation.

4.1.5 Pull Boxes and Signal Conduit

1. All pull boxes shall be fiber composite type, and marked "Traffic Signal" or "Traffic" on the lid.
2. Pull boxes shall not be placed in roadways or sidewalks. Conduit must be extended where necessary to relocate pull boxes to a non-traveled area.
3. A minimum of two (2), 2-inch conduits and one (1), 3-inch conduit shall be placed across each intersection approach. All conduits shall be Schedule 80 PVC. Any unused conduits must be sealed within the pull boxes.

4. All electrical service conductors shall be placed in a separate conduit from the traffic signal wiring.
5. Along all arterial roadways, one (1), 2-inch conduit must be placed within and parallel to the right-of-way to the nearest adjacent, existing traffic signal to allow for future signal coordination. Pull boxes must be placed a minimum of every 300' along a conduit run, with conduit ends terminating within each box. The conduit ends shall be sealed to prevent debris build up.

4.1.6 Lighting

1. Luminares shall be provided on all signal poles unless there is a utility conflict or unless directed otherwise by the Traffic Engineering and Operations Division.
2. Luminaire should be full cutoff LED with lumen output equivalent to a 250 Watt metal halide bulb.
3. Luminaire wire connections will only be made in pull boxes and not brought into the signal controller cabinet.

4.1.7 Illuminated Street Name Signs

1. Illuminated street name signs (ISNS) shall be provided for all approaches, unless directed otherwise by the Traffic Engineering and Operations Division.
2. ISNS wire connections preferred to be powered by luminaire photocell, or alternate method approved by the Town.
3. Sign features to conform with MUTCD letter size and spacing, and Town Sign standards in 4.2.10 below, including Town logo and blue background color as necessary.
4. All artwork and materials must be approved by the Town prior to installation.

4.1.8 Electrical Power

1. The signal designer shall contact the applicable power provider to determine the source for traffic signal power and to coordinate applicable requirements. At the time of construction, the location of the power connection may be revised if power has become available in closer or improved proximity to the proposed signal.
2. The electrical service shall have a separate meter and be addressed.
3. Circuit breakers and power disconnects should be located internal to service meter assemblies and signal controller cabinets, and should not be readily accessible to the public.

4.1.9 Emergency Vehicle Pre-emption

1. Emergency vehicle pre-emption shall be used for all directions and at all locations or as directed by the Town's traffic engineer. Additional sensors may be necessary if approaches are offset or vision is obstructed. Preemption must be compatible with the existing preemption system used in the Town.
2. Two (2) channel controls shall be provided at all intersections. The system shall be capable of controlling direction of travel, including arrow direction.
3. Two (2) emitters – one to the Fire and Rescue Department and one to the Police Department – shall be provided for each new signal.
4. Any upgrade or directional addition to an existing traffic signal shall include the installation of a traffic pre-emption system.

4.1.10 Signing and Striping

1. All regulatory, warning and route marker signs shall be provided with the traffic signal installation and shall be in accordance with the MUTCD.
2. Street name signs shall be installed for each approach, **see Illuminated Street Name sign section above.** The lettering on the signs must conform to MUTCD standards. Sign colors and design shall also conform to Town specifications.

- ~~3. Illuminated street name signs shall be installed at all standard signal locations along the Town's "ring roads": Meadows Boulevard, Meadows Parkway, Founders Parkway, Ridge Road, Plum Creek Parkway, and Coachline Road. Other locations may be considered at the Town's discretion. Sign display location, style, colors, and design shall conform to current Town details and specifications.~~
4. All necessary striping shall be provided with the traffic signal installation and shall be in accordance with the MUTCD.

4.2 CONSTRUCTION PLANS AND SPECIFICATIONS/ PROVISIONS

4.2.1 Traffic Signal Plan Content

1. The designer shall prepare separate drawings of all traffic signal installation and incorporate it as an integral part of the construction plans.
2. Traffic signal plans shall be developed in accordance with Town construction specifications and CDOT's Traffic Signals and Lighting—Standard Drawings and CDOT Standard Specifications for Road and Bridge Construction. All elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.
3. As a general guide, the traffic signal plans shall be drawn at a 1 inch = 20 feet scale, and shall include the following items:
 - A. Locate and identify all existing and/or proposed improvements, above and below ground, within 200 feet of the intersection including all utilities, traffic control boxes, pull boxes, signal poles and loops/vehicle detectors.
 - B. Locate and identify all existing and/or proposed pavement marking and signing.
 - C. Locate existing vegetation which could be in conflict with any proposed equipment locations or impact required signal visibility distances.
 - D. Provide a profile layout when vertical roadway alignment may impact

traffic signal visibility requirements. Provide roadway curve data if applicable.

- E. Locate all traffic signal equipment (poles, controller cabinet, electric service cabinet, etc.).
- F. Develop a phasing diagram for initial signal operation.
- G. Provide Town record drawings, sealed by a professional engineer, upon completion.

4.3 SPECIFICATIONS

Traffic signal specifications shall be developed in accordance with Town and CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 5

ROUNDABOUTS

5.0 GENERAL INFORMATION

5.0.0 Scope

Roundabouts can reduce accidents and improve traffic flow at intersections. The Town will consider the use of roundabouts on a case by case basis. Roundabouts are typically used as an alternative to traffic signals or to 4-way stop control. Roundabouts shall be constructed at all new collector/collector intersections or at intersections of roadways of a higher classification unless it can be demonstrated that a specific location is not a good candidate. This chapter provides the procedures and criteria for the design of roundabouts.

5.0.1 Use of National Standards

All roundabout designs will follow the most current guidelines for roundabouts, including proper treatment of pedestrian crossings, bicycle lanes and signage. See the Federal Highway Administration's Roundabouts: An Informational Guide (Latest Publication) and the Manual on Uniform Traffic Control Devices (MUTCD) for further information.

5.1 SITE DETERMINATION

The Town of Castle Rock considers the use of roundabouts as an essential element of traffic control, and shall consider each proposed roundabout on a case-by-case basis.

5.2 ROUNDABOUT DESIGN CRITERIA

5.2.1 General Design Criteria

1. The inscribed circle diameter shall be a minimum of 105 feet for single lane roundabouts and 150 feet for a two-lane roundabout. The inscribed circle diameter must be adequate to accommodate the anticipated vehicle types.
2. Design all legs to yield to traffic in center.
3. Provide channelized approaches/splitter islands for all legs. Vehicle deflection must be provided on all approaches at the splitter islands such

that vehicles cannot errantly continue straight into the interior circle roadway without hitting the splitter curb.

4. Intersection circle and splitter islands should follow the roadway design principles as described in the AASHTO Roadside Design Guide and should avoid structural elements that could likely be in the path of an errant driver.
5. Provide design geometry to slow speeds to less than 30 mph. The maximum speed difference between entering and circulating traffic should be 12 mph.
6. Discourage pedestrians from crossing to the center island. Provide pedestrian refuge in splitter islands. Pull the sidewalk away from curb near circle to encourage crossing at a splitter crossing. ADA requirements must be met. Multi-lane approaches must give careful consideration to treatments that can assist the visually impaired pedestrians.
7. Allow bikes to merge with vehicular traffic or exit to sidewalk/path or trail as available. Provide a directional curb ramp for bikes where the splitter island starts so that they have the option of using the sidewalk or mixing with the vehicles.
8. Accompanying design data must be provided that includes:
 - A. Existing weekday AM and PM peak hour
 - B. Peak hour of the generator turning volumes
 - C. Design year peak hour turning volumes (AM & PM weekday peak hours and peak hour of the generator)
 - D. Capacity calculations for existing 20 year projections

5.2.2 Design Vehicle Criteria

1. All intersections shall be designed to accommodate a WB-50 vehicle for all turning movements (which will accommodate fire trucks, sanitation trucks and most trailers). Larger vehicle types may be required to be accommodated on higher classification roadways. No entry or exit path overlap is permitted on any multi-lane approaches and exits.

2. Geometric layout should be checked with AutoTurn software or by a similar method.

5.2.3 Typical Signs and Markings

1. The following are the minimum number and type of signs/markings that may be required at an installation:
 - Yield sign for each leg
 - Offset regulator “One Way” signs in center island to line up with driver
 - Pedestrian crossing signs in splitter/median
 - Pedestrian activated warning signs are required for multi-lane pedestrian crossings.
 - Object marker and keep right sign at beginning of splitter/median
 - Advance roundabout warning sign with advisory speed plaque
 - Advance street name signs
 - Lane use markings (“fish hook” style)
2. The requirements may vary due to the location of the roundabouts, the amount of traffic that is expected to be present and the presence of pedestrians.

5.2.4 Lighting

1. Lighting layouts at roundabouts must adhere to the latest FHWA design guide for roundabouts and/or publications of the Illuminating Engineering Society (IES) concerning roundabout lighting.

5.3 CONSTRUCTION PLANS AND SPECIFICATIONS/ PROVISIONS

5.3.1 Roundabout Plan Content

1. The designer shall prepare separate drawings of all roundabout designs and installation and incorporate them as an integral part of the construction plans.
2. Roundabout plans shall be developed in accordance with Town specifications and CDOT's Standard Drawings and CDOT Standard Specifications for Road and Bridge Construction. All signage elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.

5.3.2 Specifications

Specifications shall be developed in accordance with Town specifications and CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 6

TRAFFIC SIGNING AND PAVEMENT MARKINGS

6.1 GENERAL INFORMATION

6.1.1 Scope

This chapter provides the procedures and criteria for the design and installation of street signage, striping and pavement markings.

6.1.2 Use of National Standards

The following current publications are to be used in conjunction with the design criteria in this manual for the design of traffic signs, striping and markings.

1. Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)-USDOT/FHWA, current version
2. Colorado Model Traffic Code

6.2 SIGNAGE DESIGN CRITERIA

6.2.1 Signage - Regulatory, Warning and Advisory

1. Design is to be in accordance with the MUTCD. The requirements of the MUTCD shall be applied to privately owned facilities where the public is able to travel.
2. All sign posts shall be telespar, pre-punched square steel tubing, (3/8" diameter holes on 1-inch centers, galvanized). Posts must be of appropriate length to meet the MUTCD requirements for the location. They also must conform to CDOT Specifications and must meet the Federal breakaway standards. Installation boots are to be driven to within 4" of ground level. The boots shall not be driven below ground level.
3. The height to the bottom of the sign assembly shall be at least seven feet above the top of the sign boot.
4. ASTM Type IV Sheeting (minimum) shall be used for all sign types.

5. School warning signs and accompanying placards must be ASTM Type DG-3 high intensity prismatic fluorescent yellow green sheeting.
6. Where the approach has multiple lanes and/or the posted speed limit is 40 mph or faster, stop signs (R1-1) shall have minimum dimensions of 36-inch by 36-inch. At other locations, stop signs shall have minimum dimensions of 30-inch x 30 inch or meet the minimum requirements in the MUTCD, whichever is greater.
7. Streetlight poles should be used for sign mounting when the light pole is within approximately 50 feet of the proposed sign location. This may not be possible for intersection control signs. Placement of signs shall be in accordance with the requirements of the MUTCD.
8. When No Parking signs are necessary, signs shall be installed in the direction of travel approximately every 250 feet unless specified closer by the MUTCD. Where possible, the sign face shall be oriented at an angle of 45 degrees to the direction of travel.
9. Speed limit signs (R2-1) are to be installed at 4 per side per mile or approximately every 900 feet in residential areas. Speed limit signs must also be placed where speed limit changes occur.
10. Backing plates shall be aluminum .080 gauge except for signs larger than 36" x 36", which shall be .100 or .125-gauge aluminum.
11. All proposed signage shall be located within the public right-of-way. If signage cannot be accommodated within public right-of-way, the signage will be located within an appropriate easement dedicated to the Town.
12. Each cul-de-sac shall include NO OUTLET signs. Cul-de-sacs, at 4-way intersections, longer than 300-150 LF (from nearest cross street flowline to furthest cul-de-sac flowline) shall feature 30-inch by 30-inch (W14-2) signs installed at the second property line entering the cul-de-sac. Shorter cul-de-sacs shall feature 36-inch by 8-inch (W14-2AR/W14-2AL) signs installed above the street name sign.

6.2.2 Signage - Street Name

1. Street names and 100-block designations (where applicable) shall be obtained from Douglas County through the Town's Geographic Information

Systems (GIS) Division. The County prescribes addressing in accordance with their existing policies.

2. Street name signs for all public streets shall be white lettering on a blue background. For all collector and arterial streets, the Town's logo shall be added to the street name signs. Additional criteria for street name signs are presented in Town standard detail ST-2. The Town logo may be obtained electronically by contacting the Town's Traffic Engineering and Operations Division.
3. For private streets, all street name signs shall be white lettering on a brown background. The Town logo is not allowed on private street name signs.
4. Lettering shall be a combination of upper case and lower-case letters and shall conform to the MUTCD.

6.2.3 Signage - Street Name Assemblies

1. Street name assemblies should be located at the point of curvature of the corner radius and should be placed according to the following, as measured from the edge of the sign. When the street name assembly is combined with regulatory signs, sign placement for the regulatory sign shall govern.
2. If street name signs are the only sign on the post, the height to the bottom of the assembly shall be at least eight feet above the sign boot.

6.3 STRIPING DESIGN CRITERIA

6.3.1 Striping

1. All permanent longitudinal pavement striping on asphalt surfaces (centerlines, lane lines, bay lines, etc.) shall be installed using an approved reflective traffic paint or thermoplastic material. Reflective beads shall be applied in accordance with CDOT's Standard Specifications for Road and Bridge Construction and the manufacturer's requirements. When tape is used on an asphalt street, it shall be "rolled" into the final lift. On concrete surfaces, tape shall be utilized with a contrasting black edge to white lines and grooved into the pavement shall be utilized.

2. All centerline striping shall be double yellow with each line being a minimum of 4 inches wide with 34 inches of separation. All solid lines are 6 inches, while skips are 4 inches. Transitional skips or intersection skips are 6" by 3' with 5' spacing. Other line widths shall be as specified by the Town. All turn lanes shall be 6 inches wide.
3. Paint material may be used upon approval by the Traffic Engineering and Operations Division if roadway geometry is not at full build out.
4. The type of material and the application process to be used must be approved by the Town's Traffic Engineering Division.

6.4 PAVEMENT MARKINGS DESIGN CRITERIA

6.4.1 Pavement Markings

1. Unless otherwise required by Town Public Works Department, all non-signalized or non-roundabout permanent lateral pavement striping (stop bars, crosswalk lines, etc.) shall be the paint type specified by the current CDOT standard. Reflective beads shall be applied in accordance with CDOT's Standard Specifications for Road and Bridge Construction and the manufacturer's requirements. Durable, thermoplastic type marking material shall be used at roundabouts and signalized intersections. On arterial and collector class roadways stop bars, symbols, and crosswalk lines need to be durable, thermoplastic type marking material.
2. All stop bars shall be white and a minimum of 24 inches wide.
3. All pavement markings on concrete must be recessed with contrasting black edging.
4. All thermoplastic pavement markings shall be recessed and installed per manufacturer's specifications.
5. Crosswalk bars shall be white. At signalized intersections, minimum crosswalk bar dimensions shall be 2 feet by 10 feet. At other locations, crosswalk bar dimensions shall be 2 feet by 6 feet.

6.5 TEMPORARY MARKINGS DESIGN CRITERIA

6.5.1 Temporary Pavement Markings & Striping

1. All temporary striping shall conform to the current edition of the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction.
2. All temporary pavement markings, including striping, shall be installed using reflective traffic paint.
3. All temporary markings shall be completely removed prior to the installation of the permanent markings. **Blackening out of pavement markings is not acceptable, markings need to be ground off or water blasted.**
4. Re-establish temporary striping periodically as required by Town Public Works Department.

6.6 CONSTRUCTION PLANS AND SPECIFICATIONS/ PROVISIONS

6.6.1 Signs and Markings Plan Content

1. The designer shall prepare separate drawings of all striping and signing and incorporate it as an integral part of the construction plans. Signing and pavement marking design should be shown in the same plan view on the same plan sheet if practical.
2. Plans shall be developed in accordance with Town specifications and CDOT's Standard Drawings and CDOT Standard Specifications for Road and

Bridge Construction. All elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.

3. Plan sheets are to be complete and to scale, no smaller than 1 inch = 40 feet.
4. The entire length of project is to be shown in plan view. Typical Sections representative of striping and/or signing will not be accepted.
5. Signing and pavement marking plans need to include all existing signing and pavement markings for a minimum of 300 feet past the limits of construction and include adequate transitions and tapers to existing pavement markings to maintain traffic at the design speed.
6. Rights-of-way lines are to be clearly identified.

6.6.2 Signing

1. All signs should be graphically depicted in the direction of travel. Signs shall be located within the right-of-way and at property lines where possible.
2. All signs shall be stationed and referenced to the appropriate MUTCD sign designation with size noted.
3. Speed limit signs should be posted in locations having adequate visibility to approaching traffic.
4. Existing or proposed roadway improvements, vegetation or structures shall not block traffic sign visibility.
5. Existing signs that are to remain, be removed, or be relocated and shall be identified by station and referenced by the appropriate MUTCD sign designation.
6. All existing signing applicable to the project shall be field verified and referenced as signs on the plan sheets, including location and/or station and proposed status of sign.
7. Where traffic calming devices are planned within the right-of-way, include warning signage along the approaches per MUTCD standards.

6.6.3 Striping

1. All existing striping that is to remain shall be fully shown (as screened lines or lightly inked pen lines), identified by type and width, and completely dimensioned across roadway.
2. Raised pavement markers shall be graphically shown in plan view and referenced by construction notation.
3. All new striping shall be clearly identified by color and line width. Beginning stations, ending stations and intermediate stations at all directional changes shall be noted.
4. Striping that is to be removed shall be identified as such on the plans.
5. All striping shall be fully dimensioned across roadway and tied to a construction centerline or monument line at each side of an intersection.
6. All pavement arrows, legends and crosswalks, etc., shall be located by station or dimension lines.

6.6.4 Specifications

Signs and markings specifications shall be developed in accordance with CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 7

TRANSPORTATION IMPACT ANALYSIS

7.1 INTRODUCTION

The importance of comprehensive and coordinated transportation planning is critical to the Town in order to provide a balanced transportation system. The application of sound design principles for new streets, preserving street capacities in existing areas, ensuring smooth traffic flow, accommodating all transportation modes, and increased safety are goals the Town must attain. In order for the Town to evaluate the impacts of Development proposals on the Town's transportation system, a Transportation Impact Analysis (TIA) prepared by a Colorado licensed engineer may be required for all Development proposals. This chapter provides guidelines for the preparation of a Transportation Impact Analysis. In addition, the Town's Transportation Master Plan or other transportation documents should be referenced for more detailed information.

7.2 PROCEDURE

The following steps outline the procedure the Town requires for the preparation and submittal of a TIA:

- Pre-Design Meeting
- Determination of Base Assumptions
- Submittal
- Town Comments and Recommendations

7.2.1 Scoping

At the Pre-Design Meeting, the Developer and the Town shall determine if a TIA will be required and to initiate the determination of the base assumptions to be utilized in the analysis.

A TIA requirement may be waived if the average daily trip generation of the proposed project is less than 200 vehicles per day of the generator or by special variance approved by the Town. If this condition is satisfied and Town does not have other concerns with the Transportation aspects of the proposed project, a memo shall be prepared by the Traffic Consultant Engineer showing the trip generation of the project and concluding that no transportation impacts are anticipated as a result of the proposed project.

At the Pre-Design Meeting, the Developer will provide information regarding:

1. Project description including type of land use (single family, fast food etc.) and size (number of dwelling units, square footage, etc.).
2. Preliminary project site plan showing all proposed access locations and proposed land uses.
3. Anticipated project completion date and project phasing.

The Town will review the applicant's project information and provide feedback as to any anticipated concerns regarding transportation issues, including but not limited to, access locations, types, potential impacts on adjacent neighborhoods, and initial identification of Study area. This initial scoping meeting will assist the Town and the Developer in determining the base assumptions and pedestrian analysis to be utilized in the TIA.

7.3 TRANSPORTATION IMPACT ANALYSIS

The intent of this TIA is to determine the potential impacts of the proposed Development upon the transportation system. Each TIA should address the following areas:

- Project Description
- Existing Conditions
- Future Background Traffic Projections
- Project Traffic
- Total Traffic Projections
- Site Circulation and Design Evaluation
- Transportation Impact Considerations
- Mitigation Measures to control speeding and cut-through traffic, and to improve pedestrian safety
- Neighborhood Transportation Impact Considerations
- Conclusions

7.3.1 Project Description

A description of the proposed project will be prepared and include the type of land use and size of the proposed project (number of dwelling units or building square footage). Any proposed phasing will be discussed and the anticipated completion date established. A figure depicting the proposed site plan will also be included and the proposed vehicular access locations will be described. This section will also include a description of how pedestrian and bicycle travel will be accommodated within the proposed site plan. This will include a discussion of types of sidewalks (attached/detached), pathways, and connections to location and perimeter destinations. Additionally, this will include a discussion of traffic calming methodologies included within the design of the project.

7.3.2 Existing Conditions

The TIA will establish the existing transportation system conditions. The assessment of existing conditions will include: a description of the surrounding roadway network, bicycle facilities, pedestrian facilities, and transit service; an evaluation of the AM/PM weekday peak hours, and peak hour of the generator, which may include a Saturday peak hour analysis.

1. Description of Existing Transportation System

A. The description of the roadway network will include:

- Number of travel lanes
- Street classifications per Town Transportation Master Plan
- Presence or not of pedestrian and bicycle facilities
- Posted speed limits
- Adjacent land use

B. Traffic data at the roadway network and Study intersections should be obtained through traffic counts and if possible from the Town's Traffic Engineering and Operations Division. Any recent (within the last one year) average daily traffic data that is available for the roadway network should be shown. Weekday AM & PM peak hour and peak

hour of the generator traffic data at the study intersections should be no older than **six months one year**. Any additional traffic counts that may be necessary are the responsibility of the Developer. All traffic count data **shall** be included in an Appendix to the TIA. Forty-eight (48) hour traffic counts should be performed within Tuesday through Thursday and used to determine the “average daily traffic”. Traffic counts shall not be done during a week containing a holiday, **or school break**.

- C. The existing transit facilities within one-quarter mile of the project should be described, **if necessary**.
- D. The description of the existing bicycle and pedestrian facilities **shall** include any facilities directly adjacent to the project site and within one-quarter mile. Analysis of pedestrian destinations, which are farther than one-quarter mile, may be necessary given particular site circumstances or the proposed project and land use (for example, the schools that will serve a residential development)
- E. If there are bicycle facilities, the type of facility (e.g. bike route, bike lane, sidepath, trail) **shall** be described. If the facility does not meet accepted standards or the Town’s criteria, the TIA needs to note this information.
- F. Special attention shall be given to the bicycle and pedestrian connections to specific uses such as schools, parks, transit stops, employment centers, commercial areas, shopping, and adjacent land uses.

2. Existing Levels of Service

- A. The existing levels of service (LOS) of the transportation system adjacent to the project site **shall** be determined. This includes the LOS for the adjacent roadways and for intersections within the study area. The study area shall be approved by the Town’s Traffic Engineer **or Planner** and may include streets and intersections not immediately adjacent to the project. All LOS calculations shall be determined based

upon procedures set forth in the latest edition of the HIGHWAY CAPACITY MANUAL.

- B. All level of service worksheets **shall** be included in the Appendices to the TIA report.

7.3.3 Future Background Traffic Projections

Background traffic projections shall be determined for each of the study years that are to be included in the TIA. These “future background” projections **shall** account for the following:

- Transportation System Improvements
- Cumulative Projects
- Overall Traffic Growth

A description of any planned transportation system improvements should be provided. This should include such improvements as: signalization, intersection improvements, roadway widening, bicycle/pedestrian projects, and transit capital and operating/service improvements.

The future background traffic projections **shall** include any individual development projects, that are within the Study area and that could impact the intersections being studied. Any major projects outside the Study area, that could impact the Study intersections, shall also be included in the background traffic calculations. All of the projects that have been included in the background traffic estimates **shall** be listed in the TIA by location, size, and proposed land use.

The overall growth in traffic within the Study area **shall** also be included in the future background traffic projections. Growth factors that should be applied to existing traffic within the study area will be provided by the Town or by DRCOG. Any projections should also reference any information taken from CDOT and Douglas County traffic models.

The resulting future peak hour traffic projections at the Study intersections **shall** be depicted on a figure.

7.3.4 Project Traffic

The potential transportation impacts of the proposed Development project will be determined based upon the following process:

- Determination of Trip Generation
- Determination of Trip Distribution
- Assignment of Project Traffic

1. Trip Generation:

The trip generation of the proposed project will be determined and provided in tabular form. The trip generation needs to be determined for total build-out conditions and for any Development phases. The trip generation table **shall** indicate the average daily trips and trips in the peak three hours (weekday AM, PM and peak hours of generator). This section of the TIA **shall** also include a description of the mode split data, which was assumed for the trip generation estimates.

The development of trip generation estimates for the project should be based upon data from the latest edition of the Institute of Transportation Engineers' (ITE) Trip Generation Handbook. However, other data sources or trip generation rate studies may be utilized if the manual does not contain data for the proposed project or additional data is available which better reflects the trip generation characteristics of the project. The use of other trip generation rate sources must be discussed with the Town in the Pre-Design Scoping Meeting.

Adjustments to the standard trip generation of the proposed project may be made to account for internal site trips, pass-by trips, or other unique characteristics of the proposed project. The allowance for these reductions will be discussed with the Town and, in most cases, should follow guidelines set forth in documents such as the ITE Trip Generation Handbook referenced above or local data. The adjusted trip generation for the proposed project **shall** be provided in tabular form.

2. Trip Distribution:

The trip distribution for the proposed project will be identified in the TIA. The distribution pattern will be based upon:

- The project's location within the Town
- Standard gravity model

- Existing traffic volume data
- Project marketing data
- Engineering judgment

3. Trip Assignment:

The project traffic will be assigned to the roadway system according to the trip distribution established above. The resulting project site-generated traffic will be depicted on figures for build-out conditions and any project phases. These figures will include daily and peak hour traffic volume information.

7.3.5 Total Traffic Projections

The total traffic projections will be determined for existing conditions and for each of the Study years identified earlier in the base assumptions. For existing conditions, the project-related traffic will be added to the existing three peak hours of traffic. The resulting total traffic projections for existing conditions will be depicted on a figure showing the project site, and the roadways within the study area. For each of the Study years, the total traffic projections will include the future background traffic plus the project-generated traffic. Background traffic will be developed by an annual growth rule obtained by the Town or obtained from the Town's Transportation Master Plan. The future total traffic projections will be depicted on figures for each Study year. Based upon the total traffic projections and the Roadway Design Criteria of this manual, the TIA shall provide roadway functional classification recommendations. For example, a roadway projected to carry between 3,500 and 5,000 vehicles per day would be recommended as a collector without parking, but if the projected traffic was less than 1,000 vehicles per day, it could be recommended to be a local street with parking.

7.3.6 Site Design and Circulation Evaluation

The project's site design shall be analyzed to determine if the proposed circulation system serves pedestrians, bicyclists, transit users, and vehicles. The site design should be evaluated to determine if facilities for vehicles, pedestrians, bicycles and transit meet these *Criteria*.

The project's site design should be evaluated to determine if traffic flows can be adequately accommodated. The on-site traffic flows should be evaluated to minimize areas where motorists would tend to speed, minimize potential conflict areas between vehicles and pedestrians/bicyclists, and to determine if circulation patterns are designed so as to avoid unnecessary traffic congestion and conflict points.

7.3.7 Transportation Impact Considerations

The TIA will determine if the project will create any significant impacts at the study intersections and street segments surrounding the project site. In order to determine this, the peak hour levels of service at each of the study intersections will be evaluated for each of the following scenarios:

- Total Existing Traffic Conditions
- Future Total Traffic Conditions for each Study Year

The level of service analysis for each of the traffic scenarios and Study years need to include mode split assumptions. The level of service findings shall be shown in the TIA in tabular form.

7.3.8 Minimum Acceptable Levels of Service

Minimum acceptable level of service (LOS) for all intersections in the Town shall be LOS D, except in Downtown (excluding the Plum Creek Parkway intersections) where the minimum acceptable LOS shall be LOS E. Where the LOS of the individual movements can be calculated, no through movements shall operate worse than LOS D. No left turn movements shall operate worse than LOS E, nor have queues that block through traffic during any peak hour. When the LOS of an existing intersection doesn't meet these criteria, the LOS of the intersection cannot be further degraded by traffic that will be generated by the proposed project without appropriate mitigation measures taken to keep the LOS at existing levels.

Note: For the purposes of this manual, the Downtown area is defined by the boundaries of the Downtown Overlay District as defined in the Municipal Code. The LOS E minimum level of service does not apply to Plum Creek Parkway intersections.

7.3.9 Significant Impacts

This section applies primarily to vehicular-related impacts associated with the proposed project. A project is defined as significantly impacting a study intersection when one of the following conditions is expected to occur within the first year of the project being completed. **Mitigation measures are required when an intersection is significantly impacted.**

1. For Signalized Intersections:
 - A. When the added project traffic causes an intersection to fail the minimum acceptable level of service standard; or
 - B. When the background traffic conditions (without project traffic) causes an intersection to fail the minimum acceptable level of service standards; and the project traffic causes more than a 2 percent increase in the intersection delay. The existing coordination timing plans are to be used in these assessments.
2. For Unsignalized Intersections:
 - A. When the added project traffic causes an intersection to fail the minimum acceptable level of service standard;
 - B. When vehicle queues to adjacent intersections would create impeded traffic flows and/or excessive congestion;
 - C. When added project traffic is determined to create potential safety problems.

7.3.10 Mitigation Measures

If the minimum LOS cannot be met once the project has been developed, the TIA shall include feasible measures to mitigate the project's impacts. The mitigation measures are intended to be **in addition to** the required improvements necessary to meet these *Criteria*. The goal of the mitigation measure(s) should be to minimize the demand for trips by single-occupant vehicles and to increase the use of alternative modes. Therefore, the following mitigation categories are listed in order of priority:

- Transportation demand management measures
- Transit capacity and access improvements

- Traffic signal operation improvements
- Street widening and other physical improvements
- Street restriping and parking regulations

The intersection LOS should be recalculated to reflect the effectiveness of the proposed mitigation measures: to show that the project-related impacts have been reduced; and to show that an acceptable LOS has been achieved. The LOS findings **shall** be shown in tabular form.

A. Transportation Demand Management (TDM) Measures:

TDM measures are designed to facilitate the use of alternative transportation modes in an effort to decrease demand on the roadway system by single-occupant vehicles. Examples of TDM measures include the following:

- Vehicle trip reduction incentives and services offered by employers to encourage employees to utilize alternative modes of travel such as carpooling, vanpooling, bicycling, walking, telecommuting, etc.
- Financial support for the capital and/or operating costs of enhanced transit or vanpool service to the project.
- Site trip “cap” and/or parking “cap” including trip-monitoring agreements.
- A detailed description of the proposed TDM measures and implementation plan must be included in the TIA for any project seeking TDM-related trip reductions. If the TDM program is acceptable to the Town, the Developer will be allowed to reduce total project vehicle trips by an amount commensurate with applicable trip reduction policies.

B. Transit Capacity and Access Improvements

Suggested elements of a transit program should include:

- Contributions of equipment or funds to increase the capacity of existing transit systems

- Transit shuttles provided by applicant (e.g. bus, taxicab, van, etc.)
- Contributions toward transit stations or centers

C. Traffic Signal Operational Improvements

Traffic signal operational improvements could include upgrading the signal to add additional signal phases, or to signalize an adjacent intersection in order to provide relief to the study intersection. Signal improvements and/or installations must meet MUTCD signal warrants and be approved by the Town.

D. Street Widening and Other Physical Improvements

Street widening and other physical improvements must be demonstrated to be physically feasible and must meet minimum standards in these *Criteria* for both on- and off-site improvements.

E. Street Restriping and Parking Regulations

Any proposed striping and parking regulations must be approved by the Town. Generally, street restriping is not a preferred mitigation measure because it often requires that parking be removed. This can cause secondary impacts within commercial and residential areas. Therefore, any parking impacts should be clearly identified and mitigated to the extent feasible.

7.3.11 Neighborhood Transportation Impact Considerations

The TIA should include a focused analysis of the potential project-related impacts on adjacent residential areas. The need for this Study will be identified as part of the Base Assumptions. If it is determined that a neighborhood transportation impact review is required, the following procedure should be used:

- Examine the existing transportation conditions within the neighborhood. This should follow the same procedure as set forth earlier for the transportation impact consideration. Daily and peak hour traffic volumes **shall** be collected for the local streets to be included in the analysis.
- Determine project-generated traffic for all modes within the

neighborhood and show on a figure.

- Determine total traffic projections for the local streets. This shall follow the same procedures as described earlier, including other projects and area-wide growth if applicable.
- Determine if the proposed project would create significant impacts to the residential streets using the conditions stated earlier.
- If necessary, develop measures including but not limited to traffic calming techniques to mitigate any significant impacts.

The neighborhood TIA should also discuss how pedestrians and bicyclists would access the proposed project to/from the adjacent neighborhood(s), and the need for special facilities to enhance direct pedestrian and bicycle connectivity.

7.3.12 Conclusions

The findings of the TIA shall be provided in summary format, including the identification of any areas of significant impacts and recommended improvements/mitigation measures to achieve the LOS standards for all modes and for each analysis year.

Section 8

PEDESTRIAN & BICYCLE FACILITIES

8.1 GENERAL

This section sets forth the minimum criteria to be used in the design of all pedestrian and bicycle facilities within the Town of Castle Rock's rights-of-way or easements. This section does not apply to recreational use trails.

8.1.1 Definition of Terms

The different types of pedestrian and bicycle facilities referred to in this chapter are described below. Collectively these terms are referred to as pedestrian and bicycle facilities.

1. Multi-use trails – are located off-street in and through parks and open space areas. They are typically paved and 8-10 feet in width. They can accommodate a variety of users such as pedestrians, bicyclists and skaters.
2. Multi-use sidepaths – are located off-street next to arterial and collector streets. They are typically paved 8-10 feet wide and are located within the street right-of way. They can accommodate a variety of users such as pedestrians, bicyclists, and skaters.
3. On-street bike lanes – are located on streets and are normally 6 feet wide (measured from curb face) and are marked and signed for bicycle travel.
4. Sidewalks – are typically located in residential areas and are generally 5 feet in width. They are typically used by pedestrians.

8.1.2 General Criteria

1. All projects shall optimize pedestrian and bicycle travel within the Town by providing sidewalks, multi-use sidepaths, multi-use trails and on-street bike lanes in all new developments in accordance with the applicable development regulations, the Town's Transportation Master Plan, the Town's trails plan, the Town's Bike Marking and Signage Policy, and other transportation documents
2. In this chapter the AASHTO's "Policy on Geometric Design of Highways and Streets ("Greenbook") and the "Guide for the Development of Bicycle Facilities" as published by the American Association of State Highway and Transportation Officials was used as a reference.

3. See Section 2 of this manual for designing Downtown pedestrian and bicycle facilities.
4. Off-site improvements may also be required to provide residents with access to schools and local commercial and community facilities.
5. Pedestrian and bicycle facilities where required by applicable Town ordinances, approved site plans, or development agreements shall be shown on the approved construction plans and shall meet, at a minimum, these *Criteria*.
6. The materials used in the construction of all pedestrian and bicycle facilities shall be in conformance to the Town of Castle Rock Detail Plans.
7. In locations within the development where pedestrian and bicycle facilities must be located on or across private property or coincide with private access facilities, the developer shall be required to provide the Town a public access easement through the private property. This will ensure that these facilities become part of the overall Town system and available for use by pedestrians and bicyclists from outside the development. The easement width shall be clearly indicated on the site plan and construction plans.
8. When pedestrian and bicycle facilities are to be constructed, their maintenance and operational responsibility will be determined during the site/subdivision plan approval process.
9. Manhole lids and other utility appurtenances should be located outside of the sidewalks, sidepaths, and trails, however, if it is necessary to construct within these improvements, the manhole lids or appurtenances shall be flush mounted and shall not create a tripping hazard.
10. Multi-Use Trails shall conform to ADA guidelines, in addition to AASHTO guidelines for bicycle facilities.
11. Storm inlet grates located in shoulders and bike lanes shall be “bike-friendly” type.

8.2 STANDARDS AND CRITERIA-OFF-STREET BICYCLE FACILITIES (Multi-Use Trails & Sidepaths)

Off-Street bicycle facilities consist of multi-use trails and sidepaths. In order to plan and construct multi-use trails and sidepaths in a consistent, usable and orderly fashion, it is necessary to establish basic standards and criteria. The standards and criteria in this section shall be utilized in the design and review of multi-use trails and sidepaths for all development projects.

8.2.1 Multi-Use Trail and Sidepath Width, Type and Surface

1. Multi-use trail and sidepath widths and surfaces shall be determined by the Town based on site conditions, expected usage, and street classification
2. Multi-use trails shall have a minimum finished surface width of 10 feet for two-way facilities and 8 feet for one-way facilities (where a bike sidepath path is present on each side of the street).
3. Multi-use sidepaths shall have a minimum width of 8 ft or 10 ft based on roadway classification.

8.2.2 Multi-use Trail and Sidepath Location

1. Multi-use trail and sidepath locations shall be based on safety, circulation, and access considerations. Multi-use sidepaths designated on the Town's Transportation Master Plan that are generally parallel to existing or proposed roadways shall be constructed within the street right-of-way. Any location in which a sidepath is not within the dedicated street right-of-way must be privately maintained unless a sidepath easement dedicated to the Town of Castle Rock, is provided of sufficient width to allow for maintenance activities and equipment. The multi-use trail system shall make use of, but not be limited to, the drainage and open space areas.
2. Where needed, an easement with a minimum width of 25 feet shall be provided for multi-use trails.

8.2.3 Clearance

1. Where possible, multi-use trails and sidepaths shall be located so as to minimize the loss of trees and disruption of natural environmental conditions. A minimum of two feet (2') clear zone is required between the bike path/trail edge and any horizontal obstructions such as trees, utility

poles, signs, fences or other obstacles. The clear zone shall be graded at a maximum 1:6 slope.

2. Regardless of multi-use trail surface, all vegetative material within 4 feet of the trail shall be removed prior to trail construction. This requirement is to be verified by the developer's engineer and specified on the approved plans.
3. All multi-use trails shall have a minimum of 10' clear vertical distance above the path.

8.2.4 Grade

1. If the multi-use trail or sidepath profile differs from the adjacent roadway profile, a profile of the proposed construction shall be included in the construction plans or site plan. Typical cross sections shall be provided for all critical points along the length of the facility.
2. A minimum grade of six tenths of one percent (0.6%) is recommended except in sags where proper drainage is provided by cross slope.
3. A maximum sustained grade of five percent (5%) is recommended. However, steeper grades will be considered in accordance with the latest edition of the AASHTO "Guide for the Development of Bicycle Facilities" and ADA requirements. Short dips in grade or excessively long steep grades will not be approved.

8.2.5 Cross Slope

The cross slope shall be a maximum 2.0% (1/4" per foot). Sloping in one direction instead of crowning is required. 1.5% maximum should be used in the design of cross slopes, providing a margin of error for construction.

8.2.6 Sight Distance

Minimum stopping sight distance shall be provided for horizontal and vertical curves in accordance with the design criteria presented in AASHTO's "Guide for the Development of Bicycle Facilities".

8.2.7 Design Speed

1. For paved surfaces, a minimum design speed of 20 m.p.h. shall be used. Where grades exceed 4 percent, a design speed of 30 m.p.h. shall be used.
2. For unpaved surfaces, a minimum design speed of 5-10 m.p.h. shall be used. Where grades exceed 4 percent, a design speed of 20 m.p.h. shall be used.

8.2.8 Radius of Curvature

Turning radii in accordance with the following table shall be provided.

TABLE 8.1
Minimum Radii for Paved Bike Paths Based on 2% Superelevation

Design Speed (MPH)	Minimum Radius (FT)
12	30*
20	90
25	155
30	260

* Only to be used under constrained conditions and with Design Variance approval. Standard Warning signs and pavement markings shall be installed in accordance with the MUTCD. Pavement widening through curves may also be required.

8.2.9 Drainage

1. All sidepath or trail facility designs shall meet the storm drainage requirements contained in Section 2.4. All inlet grates used within the designs shall be approved for use with bikes. Multi-use sidepaths or trails located within the state highway right-of-way shall meet CDOT drainage standards.
2. As a general guide, where a sidepath or multi-use trail is cut into a hillside, a ditch shall be placed along the high side of the path to prevent sheet flow across the path. In some circumstances, at the discretion of the Town, water may be allowed to sheet flow across the trail facility.

8.2.10 Safety Considerations

1. A setback area is required between the edge of the multi-use sidepath and the back edge of curb and gutter. Five feet (5') is the minimum requirement. Multi-use trails shall not be constructed directly adjacent to street curb or street pavement, except at street intersections.
2. Multi-use sidepaths adjacent to streets with speed limits exceeding twenty-five (25) mph, and which have slopes greater than six percent (6%), may require special safety measures such as the installation of barriers or other safety devices or an increase in the distance between the bike path and street.
3. Standard signing and markings from the MUTCD shall be included in the design and construction of the multi-use trails and sidepaths to alert users of potential hazards and to convey regulatory messages.
4. The Design Engineer shall address stopping and intersection sight distance at all path intersections, curves, and particularly where steep grades are proposed at roadway intersections. Obstructions to the visibility of motorists or path/trail users shall be removed or the path/trail shall be aligned around the obstruction to maximize visibility
5. Curb ramps conforming to ADA requirements will be provided at or near all curb crossings to allow continuity of use by bicyclists and persons with disabilities.
6. All multi-use trails that cross a drainage channel shall require either a bridge or a fair weather crossing. See Chapter 9, Bridges and Major Drainage Structures, for design requirements for bridges.
7. In accordance with the Town's Open Space and Trails Master Plan, grade-separated crossings of major collectors and arterials may be required. When an underpass or overpass is being considered a feasibility study may be required to assess the costs, the number of users, safety and operations of the proposed structure.
8. Railings, fences, or barriers on both sides of a multi-use trail or sidepath shall be at a minimum of 42" high. Smooth rub rails should be attached to the barriers at approximate handlebar height of 42" if the barrier is within 2 feet of the path. Barriers should not impede storm water runoff from the path.

9. All multi-use trail and sidepath bridge underpasses shall have lighting in accordance with Section 12, Lighting.
10. The minimum clearances for underpasses are as follows:
 - A. Horizontal: 12 feet
 - B. Vertical: 10 feet from trail surface to underside of bridge (8 feet for existing bridge structures), 12 feet if equestrian accommodation is required.
11. The trail surface elevation shall be at or above the high water mark for the 10-year storm.

8.2.11 Intersections

1. The following requirements apply to all multi-use trail and sidepath intersections with either streets or other pedestrian or bicycle facilities:

- A. Curb Ramps

Curb ramps in accordance with ADA requirements shall be provided at each street/driveway intersection.

- B. Sight Distance

Sight distance requirements shall be in conformance with AASHTO requirements. The Designer shall ensure sufficient stopping and intersection sight distance at all trail and sidepath intersections and curves, particularly where steep grades are proposed.

- C. Turning Radius at Intersections

The minimum turning radius at bike path intersections shall be 15 feet.

8.3 STANDARDS AND CRITERIA - ON-STREET BIKE LANES

8.3.1 On-Street Bike Routes

Streets designated as on-street bicycle routes shall be designed to provide additional width for bike lanes.

8.3.2 Width and Cross Sections

The bike lane shall be designed per the width shown in standard typical street sections. See Appendix A.

8.3.3 Signage and Striping

All designated bike lanes shall be signed and striped, as required by the MUTCD and as required in Section 6, Traffic Signing and Pavement Markings.

8.3.4 Traffic Signal Detection

Separate signal detection may be required in bike lanes at signalized intersections. Where inductive loop detectors are used, quadra-pole-type loops are required. Where video detection is used, detectors shall be placed and calibrated in a manner to detect bicycles in their appropriate lane(s). The type and placement of the detection shall be approved by the Town.

8.3.5 Bike Lanes at Intersections

At the intersections where a separate right turn lane exists and is striped, the bicycle lane shall transition and be placed between the through lane and the right turn lane. The bike lane width shall remain the same as the approaching bike lane. Refer to the MUTCD for typical signing and pavement markings.

8.4 STANDARDS AND CRITERIA – PEDESTRIAN FACILITIES (Sidewalks, Sidepaths and Curb Ramps)

8.4.1 ADA Requirements

All pedestrian facilities shall be designed in accordance with American Disabilities Act (ADA) regulations and the requirements of these *Criteria*

8.4.2 Sidewalks / Sidepaths

1. Sidewalks shall be constructed within the street right-of-way in accordance with Town Standards. Any location in which sidewalk is not within the dedicated street right-of-way must be privately maintained unless a sidewalk easement dedicated to the Town of Castle Rock, is provided of sufficient width to allow for maintenance activities and equipment.
2. The Downtown Mobility Master Plan (DMMP) is a planning tool for designing Downtown pedestrian and bicycle facilities.
3. A sidepath is a multi-use sidewalk having a minimum width of 8 ft. All design criteria for sidewalks, with the exception of width, shall apply to sidepaths. The Town has established a sidepath plan that complements the sidewalk/multi-use trail system. This plan is included in the Town's Transportation Master Plan. The developer must review the latest version of the plan. The requirement for sidepaths will eliminate the need for the sidewalks along the same segment of the street.
4. Sidewalks shall be installed at the time of roadway construction or widening unless otherwise approved through the development review process. The Public Works Department may allow the developer to pay a fee in lieu of constructing the sidewalk in certain locations. This fee must be paid prior to the issuance of the Construction Permit.
5. Sidewalk shall be provided along streets within new developments and expansions of existing developments.
6. The Town is receptive to reviewing alternate designs relative to the provision of pedestrian facilities. Such alternate designs may include greenways or a combination of sidewalks and greenways. The requirement for sidewalks may only be waived by the Town Council.
7. Where no curb and gutter exists on a road that requires sidewalks, the Town may require curb and gutter installation in addition to the installation of the sidewalk.
8. A sidewalk may be constructed so as to provide a gradual meander and to facilitate the installation of landscape material or to avoid existing obstacles such as power poles, trees, fire hydrants, street lights, etc.
9. The design of the sidewalk shall be such that pedestrian safety is provided and the usability of the sidewalk is not affected.

10. All sidewalks shall be constructed of concrete. Alternative type materials, such as asphalt, may be presented to the Town's Public Works Department for consideration. Pervious materials not meeting ADA requirements shall not be allowed due to concerns for pedestrian accessibility/usability and maintenance costs.
11. Pipes, drains, flumes or other concentrated stormwater devices shall not discharge across a sidewalk, but rather shall be piped or flumed under the sidewalk.
12. Minimum sidewalk widths for the various street classifications shall be as specified in Appendix A - Typical Cross Sections. The Town may require additional width within activity areas and for routes leading to and from these areas. The final sidewalk width shall be determined through additional study of higher pedestrian traffic areas. Refer to Section 2 for Downtown sidewalk widths.
13. All sidewalks that cross driveways and alleys shall be designed in accordance with ADA and AASHTO.
14. All street designs shall include sidewalks on both sides of the street.
15. In all existing areas previously developed, sidewalks, curbs, and gutters may be required to match existing conditions or standards, as determined by the Town.
16. When a sidewalk must be widened, the widening shall only be allowed for an increased width of 4 feet or more. If the added width needed is less than 4 feet, the existing walk shall be removed and reconstructed to the new required width.
17. Drainage shall meet the requirements specified in the "Storm Drainage Design and Technical Criteria Manual".
18. All detached sidewalks less than 8 feet in width and not within driveways shall be a minimum of 4-inch thick concrete. All detached sidewalks 8 feet and greater in width shall be 6 inches thick. All sidewalks within a driveway shall be a minimum of 6 inches thick. All attached sidewalks shall be a minimum of 6 inches thick. Sidewalks shall be a minimum of 8 inches thick where crossed by commercial or industrial traffic.

19. Slope:
 - A. Cross Slope. Maximum cross slope for sidewalks shall be 2%.
 - B. Longitudinal Slope. Longitudinal slope of attached sidewalks shall be consistent with the street slopes.
20. When required by the Town, grade separated pedestrian crossings (either underpass or overpass) shall be provided for regional paths and trails. These pedestrian crossings shall be coordinated with the appropriate Department.
21. Horizontal/vertical curves on all sidewalks shall follow the design criteria for bikeways.
22. Sidewalk vertical clearance shall be 10 feet.
23. Sidewalk horizontal clearance shall be meet AASHTO requirements.
24. The Town may require off-site sidewalk extensions to provide pedestrian connectivity to destinations within ¼ mile of the project as identified in the Transportation Impact Analysis. Additional off-site sidewalk construction extending greater than ¼ mile from the project may also be required in some circumstances such as when the project is within a school walking area boundary.

8.4.3 Curb Ramp Requirements

Curb ramps shall be installed at all intersections and at certain mid-block locations for all new construction or reconstruction of curb and sidewalk, as follows:

1. **4-Way Intersections**. Curb ramps shall be included at all intersections corners. Curb ramps shall be constructed in accordance with Town of Castle Rock Detail Plans.
2. **"T" - Intersections**. All "T" intersections shall have curb ramps for crossing both streets.
3. **Local Streets/Mid-Block**. Local Residential and Mixed-Use streets with block lengths longer than 600 feet will require mid-block curb ramps. In

general, spacing between curb ramps for crossing the street should not exceed 600 feet. ~~which should be spaced approximately 300 feet apart.~~

4. **Trail Crossings**. If a public walkway or bikeway intersects the street, a ramp shall be provided to connect the walkway or bikeway to the street. The ramp should line up with the crosswalk.
5. **Detached Sidewalks**. Where sidewalks are detached from the curb, directional ramps should be used. On arterial streets with detached sidewalks and corner radii greater than or equal to 35 feet, directional ramps shall be installed.

8.4.4 Use of Standard Drawings

Project drawings shall call out the specific detail from Town of Castle Rock Detail Plans to be used in construction for each curb ramp.

8.4.5 Sidewalk Chase Drains

Sidewalk drains shall not interfere with the pedestrian's use of the sidewalk. The chase drain shall be flush with the sidewalk surface and be securely fastened as specified. Sidewalk drains shall not be located within a curb ramp, curb cut, or driveway. This section also applies to bike paths, sidepaths, multi-use trails.

8.4.6 Curb Returns

In certain cases, the Town may require the radius of the curb return to be reduced from the values given in Table 2.2 (Chapter 2, Roadway Design and Technical Criteria), to reduce pedestrian travel time and distance.

8.4.7 Pedestrian Crossings

1. All crosswalks shall be marked in accordance with the MUTCD and Section 6, Traffic Signing and Pavement Markings. Crosswalk markings will be required at all signalized intersections, school areas, and high pedestrian

areas as designated by the Town's Traffic Engineering and Operations Manager.

2. **Cross Slope** - Sidewalk design cross slope shall be designed ~~maintained at~~ **2.1.5% across driveways, with a maximum of 2% constructed cross slope.**
3. **Crosspans** - Crosswalks shall not be located in crosspans.
4. **Maximum Crosswalk Length** - The maximum length for any non-signalized crosswalk shall be 56 feet. Any non-signalized street crossing wider than 56 feet shall be provided with pedestrian refuge area having a minimum width of 6 feet.

8.4.8 Traffic Signals

All pedestrian traffic signals shall be in accordance with the latest version of the MUTCD and Chapter 4, Traffic Signals. All traffic signals shall include pedestrian signal indications with countdown timers and pedestrian push buttons.

8.4.9 Pedestrian Refuge Areas

For arterials with raised medians and on splitter islands for roundabouts, a pedestrian refuge area shall be created in the median to increase pedestrian safety. The vehicle turning radii must be taken into account with the specific design of islands and medians. Curb ramps shall be aligned to guide the sight-impaired to the refuge area. The pedestrian refuge area should be eight (8) feet in width but no less than six (6) feet.

8.4.10 Pedestrian Minimum Clear Path

The minimum clear path around utility structures, street furniture and other encroachments shall be greater or equal to the sidewalk width listed in Table 2.2 (Section 2 – Roadway Design and Technical Criteria) for the applicable street classification.

8.5 RECTANGULAR RAPID FLASHING BEACON (RRFB) DEVICES (Supplemental Crossing Features)

1. RRFBs are pedestrian-actuated conspicuity enhancements used in combination with a pedestrian, school, or trail crossing warning signs to

improve safety at uncontrolled, marked crosswalks. The device includes a minimum of two rectangular shaped yellow indications, each with an LED-array-based light source, that flash with high frequency when activated.

2. Designers should use the FHWA's Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations in determining the best locations, and as otherwise directed by the Town.
3. Determining the need for a RRFB is to encourage and provide the safest crossing for pedestrians and bicyclists, and not over saturate crossings with signs and beacons which reduces effectiveness.
4. Consideration will be made based on vehicle traffic volume, speed of the roadway, nearby pedestrian generators, pedestrian and bicycle activity, and other nearby crossing location options.
5. Placement
 - A. Installations need to follow Town's standard RRFB installation details, including pavement marking, signage, RRFB equipment, push buttons and advanced signage and beacons, if necessary.
 - B. Beacons and signage shall be located in the median wherever possible.
 - C. If no median is present, devices need to be double sided on both sides of the roadway.
 - D. If the median is greater than 8-feet wide, two, single sided beacons and signs shall be provided in the median.
 - E. Advanced beacons may be required if the speed is 40 mph and higher, or limited sight distance exists.

Section 9

BRIDGES, CULVERTS & RETAINING WALLS

9.1 GENERAL INFORMATION

9.1.1 Scope

This chapter describes general bridge, culvert and retaining wall design requirements for use in the Town of Castle Rock.

9.1.2 Pre-Design Meeting

Prior to beginning a bridge or major culvert design, a pre-design meeting may be requested by either the Town or the design consultant. A pre-design meeting is recommended.

9.1.3 Independent Review of Plans

The applicant shall be responsible to contract with a reputable engineering firm to conduct an independent review of the design construction plans. Comments and corrections recommended by the independent review firm shall be incorporated into the final plans. The Town will issue a permit to allow construction only upon written verification of the independent review & comment incorporation process. All costs associated with this process shall be borne by the applicant.

9.1.4 Construction Inspection

The applicant shall be responsible to contract with a reputable engineering firm to conduct appropriate inspection of the bridge or major culvert construction. The applicant, through the engineering firm, shall be responsible for ensuring compliance of construction with the approved plans and specifications. The Town will issue a permit to allow construction only upon written verification that a contract is in place for this work. All costs associated with the inspection shall be borne by the applicant.

9.2 BRIDGE & CULVERT CRITERIA

9.2.1 General Design Requirements

1. All bridge and culvert elements shall be designed in accordance with:
 - A. AASHTO, “LRFD Standard Specifications for Transportation Materials and Methods of Sampling and Testing”, latest edition and applicable interims.
 - B. CDOT, “Standard Specifications for Road and Bridge Construction”, latest edition and Standard Special Provisions and Bridge-specific Project Special Provisions.
 - C. CDOT, “Bridge Manual”, latest edition and Bridge Technical Memorandums.
2. Any structure over a 20 ft. span must be designed to current AASHTO vehicular live loading.
3. All box culverts and bridges shall have the year of construction permanently indented on the downstream headwall face in legible numbers. The numbers shall be 3” high by 1½” deep in the headwall face.
4. Culvert and bridge waterway opening designs shall also conform to the parameters set forth in the “Town of Castle Rock Storm Drainage Design and Technical Criteria Manual”, latest edition.
5. If a vehicular railing or safety-shaped barrier is within the clear zone as defined by AASHTO Roadside Design Guide, approach guardrails are to be installed on all approach ends in accordance with AASHTO guidelines.
6. The crown should be centered on the bridge except for 1-way bridges, where a straight cross slope in one direction may be used. The cross slope should match that of the approach pavement.
7. Approach railings are required at the ends of bridges exposed to approach traffic. The type of approach railing selected should match the rail to be used on the bridge. Approach railings must have an approved end treatment that meets current standards at any exposed end. (For detailed information see the AASHTO “Roadside Design Guide”.)

8. Timber bridges are not allowed.
9. A safety railing is required on or adjacent to vertical faces such as retaining walls, wing-walls and abutments, etc., and where the vertical fall is 2 feet or more. The safety railing shall be placed on top of the vertical face structure of the vertical drop.

9.3 RETAINING WALL CRITERIA

1. Recommended types of retaining walls include reinforced concrete and structural masonry. Heavy timber construction is not encouraged. The walls need to include integral attachments for railings and weep drainage where applicable.
2. In general, the materials and design of retaining walls need to match or blend with the adjacent natural features, landscaping and/or buildings.

9.4 STRUCTURAL CLEARANCES

9.4.1 Horizontal Clearances

1. Clear roadside design is recommended for all arterials and collectors whenever practical. Where the roadway is curbed, the clearance between curb face to edge of the object should be a minimum of 3 feet. For further guidance, refer to the AASHTO "Roadside Design Guide".
2. The horizontal clearance to bridge piers, abutments, headwalls and retaining walls on all streets can be no less than 10 feet from the edge of the traveled way and may require protection depending on the roadway design speed.
3. Drainage structures (pipes, box culverts, etc.) are to be extended to a distance of 10 feet from the edge of the travel way. A lesser clearance may only be allowed when rights-of way limitations make the desired clearance unreasonable and appropriate traffic barriers are installed in accordance with the AASHTO "Roadside Design Guide".

9.4.2 Vertical Clearance

Minimum vertical clearance shall be 16.5 feet over the entire width of the traveled way of an arterial street or major collector street. On other streets, the minimum shall be 14.5 feet.

9.5 CONSTRUCTION PLANS AND SPECIFICATIONS

9.5.1 Bridge Plan Content

1. The designer shall prepare separate drawings of all bridge elements and incorporate them as an integral part of the construction plans.
2. As a general guide, the plans shall be drawn at a 1 inch = 20 feet scale, and shall include the following items:
3. Locate and identify all existing and/or proposed improvements, above and below ground, within 200 feet of the structure including all utilities.
4. Locate and identify all existing and/or proposed pavement marking and signing.
5. Locate existing vegetation.
6. Provide a profile layout and roadway curve data.

9.5.2 Specifications

Specifications shall be developed in accordance with CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 10

TRANSIT FACILITIES

This section is reserved for future use when transit services are available in Castle Rock.

Section 11

NEIGHBORHOOD TRAFFIC MANAGEMENT

11.1 GENERAL INFORMATION

11.1.1 Scope

This section of the Transportation Design Criteria Manual presents acceptable methods for implementing neighborhood traffic management (traffic calming) for new local streets so that future neighborhoods are not negatively impacted by vehicular traffic.

11.2 TRAFFIC CALMING DESIGN CRITERIA

11.2.1 General Requirements

1. Proposed land uses, and their associated travel demands, shall be designed so that they do not negatively impact surrounding/adjacent residential neighborhoods.
2. The design of residential areas shall limit “unwanted” vehicle traffic while maintaining emergency access. “Unwanted” vehicle traffic is defined as any one of the following:
 - Traffic operating at excessive speeds
 - Vehicles with an origin and destination outside the neighborhood
 - An excessive volume, as defined by the Town, of traffic on a local street.
3. All proposed local streets with long, uninterrupted segments shall incorporate traffic calming measures. Long uninterrupted segments are generally defined as relatively straight (curves allowing design speeds greater than 25 mph), and longer than 600 feet.
4. In general, the design guidelines for local street sections, as presented in Section 2 of this manual (Roadway Design Criteria), are intended to discourage high operating speeds, high volumes and cut-through traffic.
5. Yield and stop signs may be used to break up long stretches of streets only if they can be shown to be in conformance with the latest MUTCD. Traffic calming treatments must be utilized if intersection signage is not appropriate.

6. Traffic calming may be required for some collector class streets in areas of high pedestrian traffic, for example: schools & parks.

11.2.2 Traffic Calming Measures

1. The following traffic calming measures are examples that may be considered for incorporation into the design of new streets. The use of any of these measures shall require the prior approval of the Town Manager or designee.
 - A. Entry Island: Entry Islands are typically at the perimeter of a neighborhood. They can incorporate neighborhood identification signing and monumentation.
 - B. Raised Pedestrian Crossing: A flat-topped speed table built as a pedestrian crossing. Commonly includes a median refuge island, curb extensions, or both to shorten crossing and improve safety. May also include specialty pavement treatments. Note: Any vertical traffic calming element must be approved by the Town's Fire Department.
 - C. Curb Extensions: Segments of roadway narrowing where roadway edges or curbs are extended toward the center of the roadway. Vehicles may slow as they pass through the narrowed section. Curb extensions can be used in conjunction with midblock pedestrian crossing treatments. May also be designed with curb chase to maintain existing flow line. Should not be used where they would encroach into bike lanes.
 - D. Partial Medians: A raised median in the center of the roadway with one-way traffic on each side. Can only be constructed at mid-block locations to allow all turning movements at intersections.
 - E. Traffic Circle: A raised circular median in an intersection with counter-clockwise traffic flow. Vehicles must change their travel path to

maneuver around the circle and are typically controlled by “Yield on Entry” on all approaches.

F. Speed humps and speed cushions: Raising short sections of the street to control speeds. Note: Any vertical traffic calming element must be approved by the Town’s Fire Department.

G. See examples of traffic calming in Appendix B.

H. Other traffic calming measures not identified above or in Appendix B will also be considered with approval of the Town Manager or designee.

11.3 CONSTRUCTION PLANS

11.3.1 Traffic Calming Plan Content

1. The designer shall include all traffic calming elements as an integral part of the construction plans.
2. All signage elements must comply with the MUTCD.

Section 12

LIGHTING

12.0 GENERAL INFORMATION

12.0.0 Scope

This chapter provides the procedures and criteria for the design and installation of street and pedestrian lighting.

12.1 LIGHTING DESIGN CRITERIA

12.1.1 General Lighting Design Requirements

1. All equipment and materials specified must conform to current **Core Electric Cooperative** specifications. The Developer is responsible for coordinating all aspects of design and installation with **Core Electric Cooperative**. If **Core Electric Cooperative** offers multiple fixture choices, the Town must approve the fixture choice prior to installation.
2. All fixtures, poles, and designs must be reviewed and approved by the Town and **Core Electric Cooperative**.
3. All lamps are ~~to be either Metal Halide (MH) or~~ Light Emitting Diode (LED). The Town reserves the right to specify which type will be used. On traffic signals, the lamps must conform to Section 4, Traffic Signal Design.

12.1.2 Light Spacing and Layout

1. This section ~~only~~ refers to lighting on all streets within the Town.
2. The lighting type and spacing shall be as follows:

**TABLE 12.1
STREET LIGHT REQUIREMENTS AND SPACING**

Roadway Classification	Luminaires	Staggered Spacing
Arterial	75-W LED, fiberglass pole, 30-foot mounting height	150 feet
Collector & Industrial	75-W LED, fiberglass pole, 30-foot mounting height	200 feet
Local Residential	50-W LED, fiberglass pole, 15-foot mounting height	300 feet
Downtown Streets	The Town requires custom streetlights and pedestrian lights in the Downtown area. See Public Works Details and Forms.	Spacing of Pedestrian Lights is approx. 40 feet separation on each side of the street. Also see Intersection Light Locations for Downtown.

3. Street lighting shall be installed behind sidewalks where sidewalks are attached to the curb. Lighting on local residential streets shall be located a minimum of 12 inches behind the adjacent walk but must be within easements or right-of-way. For major collectors and arterials, the light must be offset a minimum of 24 inches from the curb face and yet leave at least 36 inches of clear space between the light pole and the edge of the sidewalk, also 24 inches of clear space if adjacent to a multi-use trail or sidepath.
4. All lighting in residential areas shall be installed to minimize light shining on or negatively affecting the neighboring residences.
5. A streetlight is required in the turnaround area of a cul-de-sac.
6. On curved streets, the Town may consider streetlight spacing based on adequate illumination rather than a specific separation distance. A photometric analysis is required to demonstrate adequate illumination.
7. Luminaries may be revised administratively when equipment becomes obsolete and improved luminaire standards are adopted by Core Electric

and/or the Town. Streetlight spacing may be revised administratively based on the photometrics of luminaires and adequate illumination needs.

12.1.3 Intersection Lighting

1. The positioning of light standards at intersecting streets. See Table 12.2.

**TABLE 12.2
INTERSECTION LIGHT LOCATIONS**

Intersection Type	Luminaires	Light Locations
Arterial/Arterial	75-W LED(or highest wattage available by Core Electric Cooperative if less), fiberglass pole, 30-foot mounting height	4 lights, one on each corner
Collector/Arterial	75-W LED, fiberglass pole, 30-foot mounting height	4 lights, one on each corner
Collector/Collector	75-W LED, fiberglass pole, 30-foot mounting height	2 lights, one each on opposite corners
Local/Collector	50-W LED, fiberglass pole, 18-foot mounting height	2 lights, one each on opposite corners
Local/Local	50-W LED, fiberglass pole, 18-foot mounting height	1 light on one corner
Downtown	See Public Works Details and Forms for custom light specification.	Streetlights required. 4 lights, one on each corner

2. Lighting locations at roundabouts will vary from the above chart. Lighting layouts at roundabouts must adhere to the latest FHWA design guide for roundabouts and/or publications of the Illuminating Engineering Society (IES) concerning roundabout lighting.
3. Signalized intersections will be lighted using combined streetlights and mast arms. Since these fixtures are owned by the Town, not Core Electric Cooperative, the wattage for street light fixtures on signals shall be 75-W LED with the fixture housing approved by the Town.

12.1.4 Installation

1. Street lighting shall be installed with underground electric service on all public streets in the Town. ~~If existing lighting is served by overhead electric service, it may continue to be served in that manner.~~
2. It shall be the responsibility of the Developer of new or upgraded street improvements to install street lighting fixtures and the associated power sources to adequately light the public improvements. Street lighting fixtures are to be owned and operated by **Core Electric Cooperative**. The developer is responsible for all charges by **Core Electric Cooperative** until all public improvements associated with the project are conveyed and accepted by the Town.

12.1.5 Other Lighting

1. Railroad crossing lighting will conform to FHWA's Railroad-Highway Grade Crossing Handbook.
2. All bridge or road underpasses, where vehicles, pedestrians, or bicyclists may be present, shall require lighting.

12.2 CONSTRUCTION PLANS AND SPECIFICATIONS

12.2.1 Lighting Plan Content

1. The designer shall show proposed lighting installations on the following sheets of the construction plans.
 - A. Overall Plan
 - B. Plan and profiles
 - C. Signing and Pavement Markings

Section 13

UTILITY INSTALLATION AND COORDINATION

13.0 GENERAL INFORMATION

13.0.0 Scope

This chapter provides the procedures and criteria for the installation and maintenance of public and private utilities within the Town's streets and/or rights-of-way. Coordination of utilities' installation and maintenance is required to ensure the most efficient use of the Town's rights-of-way and to prevent unnecessary disruptions to the public.

13.1 UTILITY FACILITIES CRITERIA

13.1.1 General Requirements

1. All utilities, including water, sanitary sewer and storm sewer, shall be stubbed out to the property line/edge of right-of-way at all locations that are planned for future tie-ins. Sanitary and Storm sewer shall include a manhole at the property line to demarcate the limits of Town maintenance versus private maintenance. Water main shall include a valve at the property line for the same purpose. Other reasonable stub-outs may be requested by the Town based on sound engineering judgment and knowledge of adjacent Development. Castle Rock Water's criteria manuals shall be adhered to for any conflicts in criteria with this section.
2. Private utility companies shall install all facilities within a Schedule 40 PVC sleeve across all public streets to accommodate future repairs without street cuts. Sleeves shall be installed at a minimum depth of 36" to the top of the pipe from the top of the curb/pavement. A pull string and tracer wire shall be installed directly above the pipe. Sleeve location shall be determined on a case-by-case basis. The Town may require increased depths where street construction may interfere with utilities.
3. For conduits, the sleeve must also terminate into a pull box at each end.
4. All electric service shall be placed underground within the Town. If existing lighting is served by overhead electric service, it may continue to be served in that manner.

5. Trees or shrubs shall not be planted within 10 feet of buried water, sanitary or stormwater utilities. ~~Within the sight distance triangle at intersections or accesses.~~ Trees or shrubs shall not be planted over other utilities and/or per the specifications of the utility company.

13.2 UTILITY LOCATION CRITERIA

13.2.1 Public Utilities

The locations of Water mains, Sanitary Sewer mains and Storm Sewer pipe in the public right-of-way are addressed in the Town's design criteria manual for each system.

13.2.2 Natural Gas Mains and Appurtenance

Gas mains shall be located either within the Right-of-Way or in an adjacent easement on the south and west sides of the street to ensure adequate utility separation. If the gas company wishes to run double mains (a main on each side of the street), the location of the double mains in relation to other utilities must be coordinated with and approved by the Town.

13.2.3 Electric, Telephone, Cable and Fiber Optic Lines and Appurtenances

Generally, electric, telephone, cable, fiber optic & any other dry utility lines shall be located within an easement adjacent to the right-of-way or along property lines. Some utilities have franchise agreements with the Town which allow the use of the street right-of-way for location of utilities.

13.3 Utility Appurtenances

1. Utility appurtenances (including but not limited to electric controls, sprinkler controls, valve boxes, inlets, signs, telephone or light poles, switching cabinets, etc.) shall not be placed within the public rights-of-way or easements in a manner that interferes with or obstructs the operation and maintenance of the roadway including driveways and any pedestrian and bicycle facilities. Any utility structures, appurtenances or other

physical improvements may not interfere with or obstruct the sight lines of traffic along the roadway or at intersections.

2. The Town of Castle Rock is not responsible for repair of private irrigation within public right of ways. Irrigation sleeves may be placed across the street by permit from the Town. Irrigation sleeves shall be installed per the Town's Construction Specifications
3. Poles, signs and any other above-ground streetscape (except regulatory signs), shall be generally located within 5 feet of the Right-of-Way line or 10 feet from the edge of the travel lane (flowline), whichever is most restrictive.
4. All manhole lids, utility access covers and pull boxes shall be depressed $\frac{1}{4}$ inch to $\frac{1}{2}$ inch below the adjacent finished street surface.

13.4 Subsurface Utility Engineering (SUE)

1. A project requires a SUE if it meets all of the following conditions:
 - A. Involves a construction contract with a public entity, construction in the public ROW or easement, infrastructure that will be dedicated to the Town, or other work as determined by the Town Manager or designee; and
 - B. Primarily involves horizontal construction and does not primarily involve the construction of buildings; and
 - C. Anticipated excavation footprint exceeds two feet in depth and is at least a contiguous 1,000 square feet (excluding fencing and signing projects) or involves utility boring or any utility crossing of public water, sanitary or stormwater systems; and
 - D. Requires the design services of a licensed professional engineer.
2. If all the above criteria are met, subsurface utility engineering documentation shall be required for approval of any Construction Documents and Right-of-Way Permits. Note: The Quality Levels A and B investigation is not required for the initial Construction Document or Right-

of-Way Permit submittal to the Town, however Quality Levels A and B are required for final Town approval. The Town may further specify SUE submittal criteria within the Town's Development Procedure's manual.

3. The following is required for the Town review/approval:

- A. Depiction of utilities on stamped plans in such a way that they meet or exceed ASCE 38 or provide documented reasons from a licensed professional engineer why they do not meet or exceed Quality Level B.
- B. Meeting or exceed Quality Level A for underground facilities at the point of a potential conflict with water mains and gravity fed systems including sanitary and/or stormwater facilities.
- C. Test hole location symbols shown of each potential utility conflict.
- D. A Test Hole Summary Report shall be provided on the plans with:
 - Test Hole Number
 - Utility Type
 - Utility Material
 - Utility Size
 - Approximate Station
 - Approximate Station Offset
 - Depth (Top)
 - Elevation (Top)
 - Cross Sectional View
 - Utility Direction
 - Surface Type
 - Pavement Thickness
- E. The horizontal accuracy and Vertical Accuracy for QLA and QLB points shall be:
 - QLA: 0.2' Horizontal & 0.1' Vertical
 - QLB: 0.4' Horizontal (Vertical is not applicable)

F. Engineer's Certification Statement is required for the Subsurface Utility Engineering information. See Town of Castle Rock Code Central for Certification Language.

G. Quality-level requirements for subsurface utility engineering vary by project phase and are as follows:

- Project Planning – Quality Level D
- Preliminary Design – Quality Level C
- Final or 100% Design – Quality Level A and B.

The above Quality Levels provide general guidance for project planning. Refer to C.R.S. 9-1.5 for exact Quality Level requirements. Quality Level A is generally required at potential conflicts for water and gravity fed utilities in public right-of-ways and easements. Quality Level A may not be required in areas without any sanitary sewer, storm sewer, other potential utility conflicts, paving or grading conflicts. The highest level of accuracy and comprehensiveness is generally not needed at every point along a utility's path, only where conflicts with design features are most likely to occur. Hence, lesser levels of information may be appropriate at points where fewer conflicts or no conflicts are expected. A Colorado licensed Professional Engineer must determine the appropriate Quality Level based on C.R.S. 9-1.5 and document the reasons why any facilities were not located to the particular Quality Level.

13.4.2 Definitions of the Quality Levels are as follows:

1. Quality Level D is the most basic level of investigation and includes verbal recollections and review of existing records such as as-built drawings, utility system drawings, permit logs, field sketches, site visit logbooks, old surveys, one-call marks, and prior SUE investigations by others.
2. Quality Level C includes surveying those utilities that are visible above ground and use of surface features that indicate subsurface alignment such

as valve covers, fire hydrants, pull boxes, manholes, and telephone pedestals. These should be reconciled to ASCE Quality Level D records.

3. Quality Level B includes the use of geophysical methods to determine the existence and horizontal position of all subsurface utilities. Quality Level B can be assigned to a utility segment or subsurface feature whose existence and position are based upon geophysical methods combined with professional judgment and whose location is tied to the project survey datum.
4. Quality Level A requires precise mapping via exposure of the utility. It provides type, size, condition, and material of the utility. Quality Level A includes using nondestructive excavating equipment at critical points to determine the precise horizontal and vertical position, type, size, condition, material, and any other characteristics of underground utilities. The utility should be vertically and horizontally tied to the project datum.

Section 14

PAVEMENT DESIGN CRITERIA

14.0 GENERAL

All applicants must refer to the most recent version of the Metropolitan Government Pavement Engineers Council (MGPEC) "Pavement Design Standards" for pavement design requirements.

REVIEWER: The Town's previous Pavement Design Criteria is being replaced entirely with MGPEG, with the following exceptions shown below in Section 14.

You may review the current MGPEG Pavement Design Standards at: https://users.neo.registeredsite.com/3/3/0/21318033/assets/MGPEC_Pavement_Design_Standards_-94640.pdf

14.1 Pavement Life Cycle Costs

1. MGPEC's Life Cycle Cost Analysis with Recommended Maintenance criteria shall include analysis of various pavement sections and the different types of maintenance treatments and schedules to assess the total lifecycle cost of each option. Maintenance treatments assessed should use contracted market rates. Lowest lifecycle costs should be calculated per the methods identified within the MGPEG standards.

2. The considered pavement sections shall include:
 - A. The identified maintenance schedule with recommended treatments at year points from construction/reconstruction
 - B. Unit cost (\$/lane-mile) for the initial construction, or reconstruction, and each maintenance treatment
 - C. Total lifecycle unit cost (\$/lane-mile/year).
 - D. Total lifecycle unit cost should be reported for other sections and schedules not selected.

14.2 Alleys

1. Public and private alleys require pavement design approved by the Town of Castle Rock.

14.2.2 Alternate Pavement Designs

1. The Town understands the need to consider emerging technologies in pavement design. In light of this, any alternate pavement design will be reviewed and considered with respect to the following criteria:
 - Initial construction cost
 - Life cycle cost
 - Construction delay and impact
 - Facility maintenance and ease of repair
 - Pavement noise, smoothness
 - Industry capacity and local contractor capability
 - Special design provisions such as edge drains behind the curbs to intercept moisture from adjoining development and prevent it from adversely affecting the road subgrade and paving section.

2. Public Works reserves the right to make the pavement type selection using these and/or other criteria on Town funded projects.
3. Warm mix asphalt (WMA) is allowed as an alternate asphalt mixture provided that all material requirements and specification standards are met and as approved by the Town.

Special Drainage Considerations: The design engineer should anticipate the future developed condition of the land adjacent to the roadway when making the paving design recommendations. Even when no shallow groundwater is present in the pre-developed condition it is expected that certain land uses such as single-family homes and projects with irrigated landscaping present the possibility of water entering the road subgrade and adversely affecting the performance and longevity of the pavement. ~~Public Works forces have to install retrofit underdrain systems in many streets to mitigate these kinds of problems.~~ Appropriate design features (underdrains) to stop water from infiltrating into the pavement section are required. ~~Desired.~~ Underdrains are required on the downstream side of lot to lot drainage and where substantial open space drainage drains to the street. An additional 1 feet of easement may be required adjacent to the public right-of-way to accommodate underdrain systems or comparable design features. See the Storm Drainage Design and Technical Criteria Manual for further information and requirements on underdrain systems.

14.3 PAVEMENT DESIGN REPORT

All pavement design reports shall be prepared by or under the supervision of, and stamped and signed by, a Professional Engineer licensed in the State of Colorado.

14.3.1 Report Submittal

1. Pavement design reports for new subdivision streets are submitted to the Town. Pavement design reports for Public Works capital projects are submitted to the Public Works Project Manager.
2. If a street is to be built in phases (i.e., the center two lanes are built first, then at some later date, more lanes are added), a new pavement design

investigation and report for the additional lanes will be required if it has been at least two years since the original design was made.

14.3.2 Subgrade and Aggregate Base Course

All prepared subgrade and aggregate base course, including recycled concrete, must meet the material specifications and construction standards presented in the current version of the CDOT Standard Specifications. Aggregate base course shall extend to the back of curb as a minimum. If combination curb, gutter and sidewalk is planned, the prepared subgrade and aggregate base course shall extend to the back of the attached sidewalk.

14.3.3 Proof Rolling

1. The Subgrade platform shall be thoroughly proof-rolled to the satisfaction of the Town Construction Inspector prior to placement of base course (or paving) and the base course shall be thoroughly proof-rolled to the satisfaction of the Town Construction Inspector prior to paving. Proof Rolling equipment should meet the requirements in CDOT Standard Specifications.

14.3.4 Water Testing

- ~~1. As soon as practical upon final pavement construction the finished pavement surface shall be water tested to the satisfaction of the Town Construction Inspector to confirm positive surface drainage in all directions prior to acceptance of the street. Water shall be applied using a water truck spray bar or similar device at a rate adequate to demonstrate positive drainage flow across the crown and into the street gutters.~~

Section 15

SITE EARTHWORK AND GRADING

15.1 General

15.1.1 Scope

This Section provides general procedures and criteria for the grading and earthwork involved in the development of roadways and public easements in the Town. Please consult the most recent version of the Town of Castle Rock Temporary Grading, Erosion, and Sediment Control (TESC) and Drainage Erosion, and Sediment Control (DESC) Manual. The manual can be found on the Town's website along with a related checklist and permit application.

15.1.2 Grading and Earthwork Design Criteria

1. Trees and other plants which will remain shall be protected at all times. Grass, weeds, plants, and trees shall be grubbed to at least 6" below present grades.
2. Excavation of all materials shall be performed to the lines and grades shown on the drawings. Suitable material removed from the excavation may be used in the right-of-way or easement as permitted by the Town's inspector. Where material encountered within the right-of-way or easement, is considered unsuitable by the Town's inspector, such material shall be excavated below the grade shown on the drawings and replaced with suitable material.
3. Unused excess material shall be removed from the work site at no cost and requiring no incidental work by the Town.
4. Unless otherwise specified, the material obtained from the excavations will be suitable for use as fill or backfill, provided that all organic material, rubbish, debris, and other objectionable material contained therein is first removed. Rocks, concrete, and bituminous type pavement obtained from

the project excavations will be permitted in the backfill or fill with the following exceptions:

- A. The maximum dimension of any piece used shall be 6".
 - B. Pieces larger than 4" shall not be placed within 12" of any structure.
 - C. Pieces larger than 3" shall not be placed within 12" of the subgrade for paving.
 - D. Voids caused by concentrations of large pieces shall not be permitted.
5. Before placing the material for the compacted fills, the subgrade shall be moistened, compacted and scarified, according to the requirements set forth for subsequent layers of fill. The fill material shall be placed in approximately horizontal, evenly-distributed layers not exceeding 8" in depth. Each layer of fill material should cover the full length and width of the entire area to be filled before the next higher layer of material is placed. After each layer of fill has been spread, worked and properly moistened, it shall be compacted to produce the specified density. Each layer should be keyed one layer to another. Grading shall be performed so that the finished surfaces are in uniform planes with no abrupt breaks in the surfaces.
6. Each layer of fill shall be moistened as necessary. Material, which is over optimum moisture content in amounts to cause "pumping" or "heaving", shall not be incorporated into the work. In case any layer of fill is too wet to attain the specified density, the compacting work shall be delayed until the material has dried sufficiently to attain said density. Moisture content shall not vary on the dry side by more than 2.0% of optimum.
7. Hauling material on or across existing roadways using scrapers or other non-wheeled heavy equipment will only be allowed on a case-by-case basis. Additional requirements related to protection and maintenance of the existing roadway(s) will be required before approval is granted. For further information on temporary roadway crossings see the Temporary Erosion and Sediment Control (TESC) Manual.

Section 16

WIRELESS COMMUNICATION FACILITIES

16.1 General Information

1. These guidelines are intended to assist applicants and reviewers of small cell facilities to better meet the requirements established in Chapter 17.60 – Wireless Communication Facilities (WCFs) of the Town of Castle Rock Municipal Code. Due to changes in technology and site-specific design constraints, these guidelines will not address all possible scenarios but is intended to cover most anticipated design types.
2. The applicant is expected to have reviewed the approved Master License Agreement, Chapter 17.60 of the Town’s Municipal Code, the applicable sections of the Town’s Transportation Design Criteria Manual and these Small Cell Design Criteria in detail before proceeding with formal submittal of WCF plans. This will help the applicant to move through the Town’s approval process more efficiently.
3. Regarding locations proposed in residential neighborhoods: Except for small cell facilities located within collector or arterial designated right-of-way, an applicant for a new WCF shall demonstrate a diligent effort has been made to locate the WCF in other areas and due to valid considerations including, without limitation, physical constraints, or technological feasibility, no appropriate location is available.

16.2 Installation Hierarchy

1. To avoid visual clutter and maximize the joint use of existing infrastructure in the right-of-way, the Town has established colocation and siting

preferences for small cell sites in the Town code. The order of preference shall be:

- A. Colocation or modification to an existing small cell in the right-of-way
 - B. An existing street light pole (Core Electric Cooperative first and then Town owned)
 - C. A new freestanding streetlight
 - D. A new freestanding pole
 - E. Town owned traffic signal pole
2. A given small cell may be required to be designed and constructed to accommodate at least two (2) wireless service providers on the same small cell pole unless an alternative design is approved by the Town. Upon request of the Town, the small cell owner or operator shall provide evidence explaining why colocation is not possible on a particular small cell pole.

16.3 Small Cell Plan Review Submittal Requirements

16.3.1 A complete submittal includes the following:

- 1. A typewritten legal description and survey for each location signed and sealed by a surveyor registered in the State of Colorado
- 2. A narrative describing consistency and compliance with the Town's Code, the Transportation Design Criteria Manual and the Town Small Cell Design Guidelines
- 3. Each site location included with the submittal shall be provided in a tabular form that provides the following:

Wireless Site ID No. and Address	Street Name / Intersection and Quadrant Pole is located on	State Plane Coordinates		Existing Pole Type	Existing Pole Height
		Easting (X)	Northing (Y)		

4. An exhibit detailing existing utility or traffic poles height within 500 feet of the proposed location. This exhibit should also show that the 600-foot minimum distance to the nearest other small cell has been met, unless the WCF is deployed on or is a replacement pole in the public right-of-way.
5. For all existing poles, whether Core Electric Cooperative or Town owned, documentation verifying the location is eligible for use as a small cell facility
6. Plans showing site plan, photo simulation, elevation / plan views of the small cell facility, engineering design, and specifications for installation of the small cell facility, including the location of radios, antenna facilities, transmitters, equipment shelters, cables, conduit, point of demarcation, backhaul solution, electrical distribution panel, electric meter, electrical conduit and cabling, location of any potholes, pullboxes and all other associated equipment. The design documents shall also include specifications and detail drawings on all replacement pole designs and caissons. For replacement traffic signal poles, this includes an engineering analysis showing that the given small cell facility location meets specific loading criteria and required AASHTO standards. Such information shall be prepared by a Professional Engineer licensed in the State of Colorado.
 - A. The plans shall show existing sidewalk size, existing utilities per subsurface utility legal requirements, existing trees and other existing improvements.
 - B. The plans shall include a separate sheet showing traffic control signs and equipment.
7. A signal interference letter and analysis from a qualified radio frequency engineer certifying, all WCFs that are the subject of the application shall be designed, sited and operated in accordance with applicable federal regulations addressing radio frequency interference, and that a technical evaluation of existing and proposed facilities indicates no potential

interference problems showing that the proposed equipment for the WCF will not interfere with the Town's wireless network operating in the 400MHz, 900MHz, 2.4GHz, 4.9GHz, 5.0GHz and 5.9GHz frequencies

8. A radio frequency emissions statement and the proposed notification signage to be posted at the small cell facility location
9. A completed Town of Castle Rock small cell facility application submittal checklist
10. Upon receipt of a full Supplemental Site License submittal, the Town shall process the request within ninety (90) days or as determined by Development Services Department, or within such other time as designated by applicable law

16.4 Technical / Site Requirements

16.4.1 General requirements

The following design guidelines are in support of or in addition to those outlined in Section 17.60.050 of the Municipal Code and the applicable sections (i.e. lighting) of the Transportation Design Criteria Manual. The intent of these requirements is to minimize the roadside visual clutter of utility infrastructure as much as possible, and to be as consistent as possible with the "look" of existing infrastructure.

1. All WCF equipment and cabling shall be internal to the pole structure and shrouded from view, this includes any equipment at ground level
2. All pole base installations should be consistent with surrounding utility base designs and shall be smooth and straight with limited flat surfaces at the transition between the base cabinet and the upper pole.
3. All cantenna transitions shall be smooth (see center below) or tapered (see right below) between the upper pole and the cantenna attachment and shall inconspicuously transition from the upper pole
4. Any replacement pole shall be in the same relative position and alignment as the pre-existing pole
5. All replacement poles shall comply with AASHTO Roadside Design guidelines and shall not be sited where sight distances for vehicular, bicycle or pedestrian travel would be impeded. Compliance to these guidelines shall be documented by engineering letter or on the plans.
6. All replacement poles shall be placed to allow for safe use of the sidewalk in compliance with ADA standards. Separation of the structure to edge of sidewalk shall meet the Town's standards. Replacement poles shall not interfere with roadway pavement, public utilities, curb, or supporting subsurface structure.
7. The replacement pole shall be structurally adequate to support the items on the pre-existing structure (i.e. light, signal heads etc.), at least two small cell installations, and maintain 10% remaining structural capacity. Compliance to these guidelines shall be documented with structural calculations and in a stamped engineering evaluation letter or on the plans.
8. The street light fixture on any replacement pole shall be placed in the same relative position to the roadway as the previous light fixture.
9. The applicant will be responsible for electric, and any other utility service used or consumed in connection with its small cell facilities. In no event will the applicant or any user of the small cell facilities at any wireless site secure its utilities by sub-metering from the Town
10. When a new small cell facility is proposed in a neighborhood or area with unique streetlight characteristics, the proposed design shall closely match

the existing streetlight aesthetics. Unique assemblies may include mast arms, decorative pole bases, architectural luminaires, mounting heights, pole colors, etc., that deviate from typical Town standards.

11. Typically, the new or replacement pole color shall match the existing or adjacent streetlights.
12. Any existing luminaire shall be upgraded to LED and meet the Town's streetlight requirements.
13. When placed adjacent to residential property, the small cell shall be placed in proximity to a common property line between adjoining residential properties, such that it minimizes visual impacts equitably among adjacent and nearby properties.

16.4.2 Core Electric Cooperative or Town owned streetlight

1. All cabling for the small cell facility equipment must be physically separated from the cabling needed for the Town maintained streetlight and must not interfere with access to or operation of any street light equipment

16.4.3 New freestanding pole or streetlight

1. If proposing a freestanding pole, justification must be provided and approved by the Town that documents why an existing pole location cannot be used
2. Any proposal for a new standalone pole shall consider the need for additional street lighting in the area. A photometric study of the area, including existing light levels and modeling the post-constructions lighting levels must be submitted with the design plan package

16.4.4 Town owned traffic signal pole

1. Traffic signal poles already supporting police equipment, closed circuit television cameras and Town owned radios are not eligible to be considered for small cell facilities
2. All cabling for the small cell facility equipment must be physically separated from the cabling needed for the Town maintained traffic signal equipment

and must not interfere with access to or operation of any traffic signal equipment

3. Per the MUTCD, any devices that interfere with safe operation of the traffic signal will not be permitted or will be removed from the traffic signal pole.

16.5 Permits, Construction, Operation and Maintenance in Right-of-Way

16.5.1 Right-of-Way Permit

1. Submittal Requirements:

- A. The Town utilizes an on-line program for applying for Right-of-Way permits. See CRGOV.COM website for links and application instructions.
- B. Each small cell facility site will require its own permit unless the sites are grouped in such a way that will allow for a single permit at the discretion of the Town. The Town may require the WCF owner to apply for the ROW Permit online.
- C. Building Permit form, completed and signed for electrical and structural installations.
- D. Permit fee (inspection and use tax) (see Development Services Fee Schedule)
- E. Approved Haul Route (if needed)
- F. Street / Lane Closure Application and traffic control plan (if needed). A traffic control plan (TCP) shall meet all the requirements of the Manual of Uniform Traffic Control Devices (MUTCD), latest revision, and shall be prepared by a certified ATSSA traffic control supervisor or licensed professional engineer qualified in transportation engineering.
- G. For small cell installations using Town traffic signal poles, the personnel involved in the installations work must hold at least a Level II IMSA Traffic Signal certification to demonstrate comprehension of traffic

signal operations and construction. Certification cards that document these certifications may be requested by the Town.

H. Performance Surety with Town approved language for public improvements, if applicable.

16.5.2 Maintenance

1. Any installation or servicing of equipment located on traffic signal poles or Town owned streetlights shall be coordinated with the Town's Traffic Engineering Division a minimum of three business days in advance and may necessitate a ROW permit. A Street / Lane Closure application and traffic control plan will be required for any maintenance work that requires a lane closure.
2. Any public rights-of-way, public property or private property that is disturbed or damaged during, or as a result of, the construction, reconstruction, repair, replacement, removal, relocation, operation or maintenance of any WCFs by the applicant shall be promptly repaired to the reasonable satisfaction of the Town by the applicant at its sole expense. The applicant must provide written notification to the Town within 24 hours of the damage and report corrective activities after completion to the Town.

16.6 Additional Requirements

1. Adjacent property owner notification must be sent to all property owners within 300 feet of the installation of a new freestanding pole or new streetlight or new WCF. Please send a scanned copy of the certificates of mailing to the Town of Castle Rock Engineering Division before receiving your approved right-of-way permit.
2. Applicants are strongly encouraged to meet with abutting property owners, homeowners' associations, and metropolitan districts in the vicinity of the proposed wireless facility or wireless facility network to discuss design and placement options prior to and during the application process.

Appendix A

TYPICAL STREET CROSS SECTIONS

Note: Typical Street Cross Sections are not changing with this update, with the exception of the tree symbols have been removed from the medians.

Appendix B

TRAFFIC CALMING EXAMPLES

Note: Traffic Calming Examples are not changing with this update.

TRANSPORTATION DESIGN CRITERIA MANUAL

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Section 1

GENERAL PROVISIONS

1.1 GENERAL INFORMATION

1.1.1 Scope

This manual provides minimum design criteria for planning, designing, and preparing final plans for modifying and constructing transportation facilities within the Town of Castle Rock. It addresses traffic impact analysis, rights-of-way considerations, street geometrics, traffic signal design, signs and markings, transit amenities, bikeways, pedestrian facilities, neighborhood traffic calming, pavement design and wireless facilities. All development and redevelopment of sites, or any other proposed construction submitted for acceptance under the provisions of the ***Town of Castle Rock Development Procedures Manual*** (hereafter *Procedures Manual*) shall include adequate and appropriate transportation system planning, analysis, and design.

1.2 APPLICABILITY OF CRITERIA

These criteria and design standards together with all future amendments shall be known as the ***Town of Castle Rock Transportation Design Criteria Manual*** (hereafter “*Criteria*”). All reports, plans, analyses, and proposed transportation improvement designs submitted as a requirement of the *Procedures Manual* shall comply with these *Criteria*.

1.3 ENACTMENT AUTHORITY

The *Procedures Manual* has been adopted pursuant to the statutory authority conferred within: Article 28 of Title 30 (County Planning); Article 2 of Title 43 (State, County, and City Highway Systems); Article 67 of Title 24 (Planned Unit Development Act); Article 20 of Title 29 (Land Use Control and Conservation); and other applicable sections of Colorado Revised Statutes, as amended.

1.4 JURISDICTION

These *Criteria* shall apply to all land within the incorporated area of the Town of Castle Rock, including any public lands. These *Criteria* shall apply to all developments and facilities constructed in or on Town Rights-of-Way, easements dedicated for utilities across public or private property, easements for public use. These *Criteria* shall also apply to privately owned streets that have the same functionality as public streets i.e. streets that provide a direct thoroughfare between two public streets, excluding multi-family driveways.

1.5 INTERPRETATION AND APPLICATION OF CRITERIA

In the interpretation and application of the provisions of these *Criteria*, the following shall govern:

The provisions shall be regarded as the minimum requirements for the protection of the public health, safety, and welfare of the residents of the Town. These *Criteria* shall therefore be regarded as remedial and shall be liberally construed to further its underlying purposes.

Whenever a provision of these *Criteria* and any other provision of the *Procedures Manual* or any provision in any law, ordinance, resolution, rule or regulation of any kind, contains any requirement(s) covering any of the same subject matter, the requirements that are more restrictive or impose higher standards shall govern.

These *Criteria* shall not abrogate or annul any easements, permits, reports or construction drawings that are recorded, issued, or accepted by the Town prior to the effective date of these *Criteria*.

1.6 VARIANCES

1. Variances to these criteria shall require a formal variance request. Variances from the provisions of these Criteria may be considered on a case-by-case basis for specific applications only and shall not establish a precedent for any other project or future development. All revisions to these Criteria shall be documented on CDs for construction and inspection purposes and on Record Drawings for operational purposes. All Variances on a project shall be listed on Site Plans (if applicable) and CDs including the Variance Number, description of the Variance, and conditions of approval, and the approval date. Formal requests for variances from the standards, policies or requirements of these Criteria shall be submitted with documentation and justification to the Development Services Project Manager. The Variance request and supporting documentation will be reviewed by the Public Works Department, and the Public Works Director or designee will issue a formal response to the request. Submittal requirements for variances and information regarding the appeals process shall be as established in the Development Procedures Manual.

2. Variances that are granted for improvements that have not been constructed are not valid if the Town's criteria are revised for the specific criteria originally varied from.

1.7 AMENDMENTS AND REVISIONS

The policies and criteria may be amended as new technology is developed or if experience gained in the use of these *Criteria* indicates a need for revision. All technical criteria and policy changes must be recommended by the Town Manager or designee. Minor revisions will require the approval of the Town Manager or designee. All major revisions will require adoption, by resolution, of the Town Council following a public hearing thereon. The Public Works Department shall monitor the performance and effectiveness of these *Criteria* and will recommend amendments and revisions as needed.

Examples of Minor and Major Revisions

Minor	Major
Grammar	Policy Changes
Submittal Requirements	
Clarifications	
Construction Detail Revision	
Technical Criteria Changes	

1.8 ENFORCEMENT RESPONSIBILITY

The Town shall review all reports, plans, analyses, and designs, submitted as a requirement of the *Procedures Manual*, for compliance with these *Criteria*. The *Procedures Manual* is enforced by the Town of Castle Rock and its authorized representatives.

1.9 REVIEW AND ACCEPTANCE

The Town shall review all proposed transportation and roadway improvements for general compliance with these *Criteria*. Approval by the Town does not relieve the owner, engineer, or designer from the responsibility of ensuring that the design, calculations, plans, specifications, construction, and record drawings are in compliance with these *Criteria* as stated in the owner's and engineer's certifications.

The Town may, but is not required to, refer submittals to other agencies that have an interest in or responsibility for transportation issues. Other review agencies may include regional, state, or federal agencies responsible for highways, streets, roadway, traffic and other transportation related issues.

1.10 RELATIONSHIP TO OTHER STANDARDS

If the State of Colorado, Federal Government, or other applicable regulatory agency imposes stricter criteria, standards, or requirements than those contained herein, such provisions shall be considered a part of the *Procedures Manual* and these *Criteria*.

1.11 PLANNING PRINCIPLES

The Town recognizes that every project is unique. The setting and character of the area, the needs of the residents and users of the transportation system are all factors that must be considered, along with the values of the community, to achieve a successful project.

The Town of Castle Rock Transportation Master Plan includes a Master Street Plan based on traffic volumes, land use and expected growth. The Master Street Plan classifies each roadway as a local, collector or arterial street. The following criteria apply to each classification. Typical roadway sections are presented in Appendix A of this manual.

1.11.1 Design Characteristics

A local circulation system functions as a traffic management method, implemented to convey vehicular, pedestrian and bicycle traffic through developed areas. Basic considerations in the design of local circulation systems must recognize the following factors:

Safety – for vehicular, pedestrian, and bicycle traffic.

Efficiency of Service – for all users including pedestrians and bicyclists.

Livability – as it is affected and shaped by traffic and transportation elements.

Economy – balancing the cost of providing the necessary infrastructure with the need to provide safe and efficient roadways and other transportation elements.

1.11.2 Principles

The following principles are an elaboration of these design characteristics. The principles are not intended as absolute criteria, as instances may occur where principles conflict. The principles should, therefore, be used as guidelines to design proper circulation systems layout.

Universal Design – The primary function of a local street is to serve the abutting properties and all street users including pedestrians, bicyclists, and drivers of passenger vehicles, waste removal vehicles, delivery trucks, and emergency vehicles. Street widths, placement of sidewalks, patterns of streets and number of intersections are related to the safe and efficient access to abutting lands. The typical street cross sections depicted in Appendix A are intended to accommodate and balance the needs of all users.

Minimize Through Trips – Through traffic on local and collector streets increases the average speed and volume and thus the accident potential, thereby reducing residential amenities. Through traffic can be discouraged by creating a circuitous route between neighborhoods and higher volume streets and by channeling or controlling median crossings along peripheral routes.

Control Access to Arterials – Local circulation systems and land development patterns should not detract from the efficiency of peripheral arterial facilities. Ideally, land development should occur so that no local residential streets require direct access to

arterial routes. The number of street access points between the local circulation system and arterial system should be minimized. Intersections along arterial routes should be properly spaced for efficient signalization and traffic flow. The streets that do intersect the arterial system will tend to have higher volumes since they are the only access points.

Vehicle Speeds Are Controlled – All streets should be designed to eliminate excessive speed. On residential streets the ideal speed of vehicles should be no more than 25 mph. This can be accomplished through the use of curvilinear alignments and circuitous routes in the street system. Traffic calming devices placed along residential streets at distances no greater than 600 feet, along uninterrupted stretches, may also be utilized. The designer must utilize one or a combination of the above principles to keep the 85th percentile speed at or below 25 mph, for residential streets. The design criteria for the traffic “calming” elements included in these *Criteria* (See Section 11 – Neighborhood Traffic Management) are intended for use in the design of residential streets within newly developing neighborhoods. Traffic calming techniques and criteria to be used in existing neighborhoods are included in the Town’s Neighborhood Traffic Calming Program that has been reviewed and approved by Town Council.

Minimize Pedestrian & Vehicular Conflicts – Pedestrian travel from within a residential area to points outside should require a minimum number of street crossings. This can often be achieved through proper design of street patterns, land use arrangements and pedestrian routes. Typical methods include use of cul-de-sacs, loop streets, special pedestrian routes or walkways and the proper placement of high pedestrian traffic generators. In general, while vehicular flow must be outward oriented to the peripheral arterials, pedestrian travel should be inward-oriented to avoid these heavier vehicular flows.

Minimize Space Devoted to Street Use – It is desirable to minimize local street widths to reduce construction and maintenance costs as well as to allow for the most economic land use. Streets should also have an appearance commensurate with their function. They should be in keeping with the residential character. The street cross section options provided by the Town are intended to achieve this goal.

Topography is Used to Its’ Advantage – Local streets will be more attractive and economical if they are constructed to follow existing topography. Using the existing topography of the area can assist in limiting the needs for an extensive storm drainage piping system. The streets will also be more accessible during inclement weather.

Layout Streets to Achieve Optimum Subdivision of Land – The arrangement of streets should permit economical and practical patterns, shapes and sizes of development parcels. Distances between streets, the number of streets, and related elements all have a bearing on the efficiency of a subdivision. Access to adjoining properties and links to other streets is encouraged. Access type to residential lots, front loaded versus alley loaded, should be consistent within a block or similar group of blocks.

New Private Street Development - Private streets will not be permitted within single-family residential zoned areas of all new developments that include one family or two-family dwellings as defined in the Municipal Code. For purposes of this policy, and in order to distinguish between a driveway, a private street includes curb and gutter, however this policy shall not preclude private shared driveways. Private streets will be permitted for new single-family home projects where there will be a single owner/association/district of all the homes in the project.

Phased Street Construction - Where streets longer than 150 feet temporarily dead end due to phasing, an interim turnaround shall be required. Each dead end shall be provisioned with signage per MUTCD.

Ensure Vehicular, Pedestrian and Bicycle Access –The complete transportation system should encourage and enhance bicycle, pedestrian and other non-motorized travel modes. Designers shall accommodate direct bicycle, pedestrian, and other non-motorized access through drainage channels tracts, dead ends, walls, cul-de-sacs, open space, and other barriers to reach neighborhood destinations such as homes, schools, parks, libraries, retail centers, civic spaces, and other trip generators. Where needed, as determined by the Town and to meet all current ADA standards, street designs shall include appropriate ramps, sidewalks, and other basic amenities to facilitate and encourage non-motorized transportation.

1.12 ACRONYMS

As used in these *Criteria*, the following acronyms shall apply:

AASHTO - American Association of State Highway and Transportation Officials

ADT - Average Daily Traffic

ADAAG – American Disability Act Accessibility Guidelines

ANSI - American National Standards Institute

ASCE – American Society of Civil Engineers

ASTM - American Society for Testing Materials

BMP – Best Management Practices

C&G – Curb and Gutter

CDOT – Colorado Department of Transportation

DMMP – Downtown Mobility Master Plan

DRCOG – Denver Regional Council of Governments

DU – Dwelling Unit

e – Rate of Superelevation

FHWA – Federal Highway Administration

FL – flowline

Ft – Feet

GIS – Geographic Information Systems

HC – Horizontal Curve

HCM – Highway Capacity Manual

IES - Illuminating Engineering Society

ITE – Institute of Transportation Engineers

LOS – Level of Service

Max – Maximum

Min – Minimum

MGPEC - Metropolitan Government Pavement Engineering Council

mph - miles per hour

MUTCD - Manual on Uniform Traffic Control Devices

NFPA - National Fire Protection Association

P.E. - Professional Engineer

P.L.S. - Professional Land Surveyor

PCR - Point of Curb Return

PI - Point of Intersection

PROWAG – Proposed Accessibility Guidelines for Pedestrian Facilities in the Public

Right-of-way

PVC - Polyvinyl Chloride Pipe

ROW - Right-of-Way

SD - Sight Distance

TCR - Town of Castle Rock

TDM - Transportation Demand Management

TRB – Transportation Research Board

US DOT – United States Department of Transportation

VPD - vehicles per day

VPH - vehicles per hour

1.13 DEFINITIONS

Criteria - Town of Castle Rock Transportation Design Criteria Manual

Downtown - The Downtown area, as it pertains to specific Downtown criteria in this manual, is defined by the boundaries of Plum Creek Parkway on the south, the railroad right-of-way on the east, Wolfensberger Road on the north and Interstate 25 on the west.

Procedures Manual - Town of Castle Rock Development Procedures Manual

Public Entity – The State of Colorado or a county, city and county, town, or district, including any political subdivision thereof.

Right-of-Way - Also "Public Right-of-Way", shall mean a public street, way, alley, sidewalk, easement, park, square, plaza, tract, and Town-owned lands or any other public property owned and controlled by the Town or dedicated to public use

Sight Distance Lines – The term "Sight Distance Lines" include Intersection Sight Distance Triangles, Sight Distance Easements and sight lines required for minimum Stopping Sight Distance. Each of these define areas that should be clear of obstructions that might block a driver's view of potentially conflicting vehicles or pedestrians.

Stop Work Order – A written instruction/notice from the Town, revoking the Developer's Construction Permit and subsequent right to continue work on the project, due to non-conformance with these criteria.

1.14 REFERENCES

The most current version of the following codes, manuals and regulations are adopted as a secondary code to this Transportation Design Criteria Manual:

AASHTO - "A Policy on Geometric Design of Highways and Streets" (Greenbook)
AASHTO - "Guide for the Development of Bicycle Facilities"
AASHTO - "Guide for Design of Pavement Structures"
AASHTO - "Roadside Design Guide"
ADA - "ADA Standards for Accessible Design"
CDOT - "Roadway Design Guide"
CDOT - "M & S Standard Plans Book"
CDOT - "Model Traffic Code for Colorado"
CDOT - "Standard Specifications for Road and Bridge Construction"
CDOT - "State of Colorado - State Highway Access Code"
CDOT - "Rules and Regulations of the Colorado Department of Transportation, Pertaining to Accommodating Utilities in the State Highway Rights of Way"
FHWA/U.S. DOT - "Manual on Uniform Traffic Control Devices" (MUTCD)
FHWA/U.S. DOT - "Roundabouts: An Informational Guide"
IES - "Design Guide for Roundabout Lighting"
ITE - "Traffic Access and Impact Studies for Site Development – A Recommended Practice"
ITE - "Traffic Control Devices Handbook: An ITE Informational Report"
ITE - "Trip Generation Handbook: An ITE Recommended Practice"
ITE - "Trip Generation – An ITE Informational Report"
MGPEC - "Pavement Design Standards and Construction Specifications Manual"
NCHRP - "Roundabouts: An Informational Guide"
Town of Castle Rock - "Construction Methodology and Materials"
Town of Castle Rock - "Detail Plans List"
Town of Castle Rock - "Bike Marking and Signage Policy"
Town of Castle Rock - "Standard Special Provisions"
Town of Castle Rock - "Downtown Mobility Master Plan"
Town of Castle Rock - "Transportation Master Plan"
TRB - "Highway Capacity Manual" (HCM)

Section 2

ROADWAY DESIGN CRITERIA

2.0 GENERAL INFORMATION

2.0.0 Scope

This section sets forth the minimum design, technical criteria and specifications to be used in the preparation of all roadway plans.

2.0.1 Reference Materials

Within this section of the *Criteria*, “Green Book” refers to the current edition of “A Policy on Geometric Design of Highways and Streets”. Other documents referenced within this section are listed in Section 1.

2.1 FUNCTIONAL CLASSIFICATION

2.1.1 Local Residential Streets (Single Family and Multi-Family)

1. Street Function and Characteristics:
 - A. Local residential street is a general term denoting a roadway that will serve a residential area. Its primary function is to provide direct access to adjacent residential properties and to uses normally found within residential areas, such as parks, schools, and community areas. These roadways should have limited continuity and be designed to discourage the through movement of vehicles, i.e. those vehicles having neither an origin nor a destination within the neighborhood.
 - B. Local residential streets should be designed to accommodate and encourage pedestrian and bicycle activity. When necessary, traffic calming measures may be required on streets where average vehicle speeds are expected to exceed the posted speed limit. This normally occurs when there are relatively straight, unobstructed street segments in excess of 600 ft. See Section 11 – Neighborhood Traffic Management.
 - C. Parking is allowed on this street classification, however parking is restricted within 30 feet of the PCR on approaches where traffic control is present. All other approaches and departures shall have no

parking or driveway access within 20-feet of the PCR. See Table 2.1 for minimum design standards.

2. Traffic control

Traffic control for this type of street will normally be limited to stop and yield signs. Roundabouts may be used in place of multi-way stop control. Although discouraged, traffic signals may be needed at intersections with collector streets. To prevent this, the design of the neighborhood street system should limit daily traffic volumes on streets to less than 1,500 vpd.

3. Access Conditions

Local residential streets should intersect with other local streets and minor collector streets. Local residential streets should not intersect with major collectors or arterial streets. In some cases, an entry street may be used to connect a local street to a major collector or arterial. Access to commercial properties will not be allowed. See Figure 3.1 for intersection spacing. See Section 3.1.6 for access criteria.

4. Sidewalks and Bike Lanes

Local residential streets shall have sidewalk on both sides of the street. See Table 2.1 for exceptions in neighborhoods where the housing density is considered Medium and Large Lot Residential. Streets proposed to have a single sidewalk must accommodate pedestrian transitions from neighboring areas with sidewalks on both sides. Bike lanes are not necessary on local residential streets. See Appendix A for typical cross sections. See Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs & Knuckles

- A. Cul-de-sacs may be incorporated into a neighborhood design. A cul-de-sac should have a maximum length of 600 ft. (measured from the right-of-way line of the intersecting street to the end of the cul-de-sac), and a maximum of 25 dwelling units. For cul-de-sac lengths in excess of 600 feet to be permitted, the Town of Castle Rock Fire Department shall determine the necessity of automatic sprinkler systems in structures beyond 600 feet. Any cul-de-sac in excess of 1,200 feet will require the approval of the Town of Castle Rock Fire Department. For cul-de-sacs

in excess of 600 feet, a maximum of 40 dwelling units will be permitted. See the Town of Castle Rock Public Works Details and Forms for cul-de-sac specifications and Section 2.8 for additional criteria.

- B. Knuckles may be incorporated into a neighborhood design on Local streets. Knuckles can be used at street corners with no other intersecting streets. Knuckles should not be used in lieu of minimum centerline street radii. See the Town of Castle Rock Public Works Details and Forms for knuckle specifications.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria:

The design criteria for local residential streets can be found in Tables 2.1, 2.2, 2.3, 2.4 and 2.5. Typical sections are shown in Appendix A.

**Table 2.1
Residential Street Minimum Design Standards Matrix**

Housing Density ⁷	Dwell-ing Units per total lot acre	Street Width ¹ Parking on Both Sides	Street Width ¹ Parking on One Side	Right-of-way Width ²	Front Setback ³	Street Elements				
						Curb Type	Side-walk	Planting Strip	Street Trees	Traffic Calm-ing
Res. Large lot	2.0 or less	32' Min.	26' Min.	36' Min.	varies, based on PD	No Curb w/ 1' Edge Band ⁴ , Mountable or Vertical Curb	Min. 2 sides ⁵ 5' min. each side	Optional for all neighborhood types Min. width (with overhead irrigation): 10' Min. width (with drip irrigation): 8' (See Town's Landscape & Irrigation Performance Standards and Criteria)	Incorporate into planting strips or on private property: 5' – 8' from back of walk (See Town's Landscape & Irrigation Performance Standards and Criteria)	Integrate into design as needed
Res. Medium Lot	2.1 - 4.0	32' Min.	see note ⁶	36' Min.	varies, based on PD	Mountable or Vertical Curb	Min. 2 sides ⁵ 5' min. each side			
Res. Typical Suburban ; Multi-family; Small lot	4.1 and Higher	32' Min.	n/a	36' Min.	varies, based on PD	Mountable or Vertical Curb	Min. 2 sides 5' min. each side			

1 - Street width is the flowline–flowline width. For streets without curb, width is measure from outside edge of edge band.

- 2 – Sidewalk planting strip, and underdrain easements must be provided if minimum right-of-way width is utilized.
- 3 - The location of the sidewalk will be considered when determining the front setback. The setback should provide for parking in the driveway, without blocking the sidewalk.
- 4 - For streets without curb, roadside drainage swales will be necessary with drainage easements. The HOA, District or adjacent property owner will be required to maintain the roadside drainage swale and driveway culverts.
- 5 - Sidewalks on both sides of the street are required unless it is demonstrated that one sidewalk is adequate due to the character and/or density of the proposed neighborhood. For example: houses limited to one side of street; pedestrian routes are met through a separate trail network.
- 6 - 26' street widths will be considered for the lower densities of this category (2.1-3.0 DUs per acre). For 26' streets in higher densities (3.1–4.0 DUs per acre) the developer must demonstrate that parking is not necessary on both sides of the street due to circumstances such as: housing on one side of the street; housing product where on-street parking is less likely.
- 7 - The Town may apply different housing density categories to different neighborhoods of the same subdivision.

2.1.2 Local Mixed-Use Streets

1. Street Function and Characteristics:

- A. A local mixed-use street is a general term denoting a roadway serving an area with intentionally mixed commercial and residential uses. These streets provide direct access to high density development with compatible uses separated horizontally or vertically within the same or multiple buildings.
- B. The streets should be designed to accommodate and encourage pedestrian and bicycle activity. When necessary, traffic calming measures may be required on lengths of street where average vehicle speeds can be expected to exceed the posted speed limit. This will normally occur when there are unobstructed segments of street in excess of 600 ft. See Section 11 - Neighborhood Traffic Management.
- C. Parking is allowed on this street classification, however parking is restricted within 30 feet of the PCR on approaches where traffic control is present. All other approaches and departures shall have no parking or driveway access within 20-feet of the PCR.

2. Traffic control

Traffic control for this type of street will normally be limited to stop and yield signs. Roundabouts may be used in place of multi-way stop control. Although discouraged, traffic signals may be needed at intersections with collector streets. The design of the mixed-use street system should limit daily traffic volumes on streets to less than 15,000 vpd.

3. Access Conditions

Local mixed-use streets should intersect with other local streets and minor collector streets. Local mixed-use streets should not intersect with major collectors or arterial streets. An entry street may be used to provide access with a major collector or arterial. See Appendix A for the entry street typical cross section. See Figure 3.1 for intersection spacing. See Section 3.1.6 for access criteria.

4. Sidewalks and Bike Lanes

Local mixed-use streets shall have sidewalk on both sides of the street. Bike lanes are not necessary on local mixed-use streets. See Appendix A for typical cross sections. See Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs & Knuckles

Cul-de-sacs and knuckles are not recommended for local mixed-use streets.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria:

The technical design criteria for local mixed-use streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are shown in Appendix A.

2.1.3 Industrial Streets

1. Street Function and Characteristics:

- A. An industrial street is a general term denoting a roadway that will serve industrial properties. These streets will not provide access to single family, residential properties although access to multi-family properties may be permitted.
- B. Properties being developed along these types of streets will be granted access based upon the existing conditions of the street, the amount of traffic expected at the access points, and the traffic impacts expected from the development. All of these factors must be described in the Traffic Impact Analysis (see Section 7).

2. Traffic control

Traffic control for this type of street will normally be stop signs. Roundabouts may be used in place of multi-way stop control. Traffic signals may be needed at intersections with collector and arterial streets, as warranted. The design of the industrial street system should limit daily traffic volumes on streets to less than 3,000 vpd.

3. Access Conditions

Industrial streets will connect with other industrial streets, collectors, and arterial streets. They will not intersect with residential streets. Intersection spacing will meet the criteria of local streets. See Figure 3.1 for intersection spacing.

4. Sidewalks and Bike Lanes

Industrial streets shall have sidewalks on both sides of the street. Bike lanes are typically not required unless the street is identified as a bicycle route in the Town's Transportation Master Plan. Additional pavement width & right-of-way is required to accommodate bike lanes, if necessary. See Appendix A for typical cross sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs & Knuckles

Cul-de-sacs may be permitted if no other street layout is possible. Knuckles are not permitted. Cul-de-sacs may be a maximum of 600 feet in length, measured from the right-of-way line of the intersecting street to the end of the cul-de-sac, and shall have a maximum of 25 lots. For cul-de-sac lengths in excess of 600 feet to be permitted, the Town of Castle Rock Fire Department shall determine the necessity of automatic sprinkler systems in structures beyond 600 feet. Any cul-de-sac in excess of 1,200 feet will require the approval of the Town of Castle Rock Fire Department. For cul-de-sacs in excess of 600 feet, a maximum of 40 dwelling units will be permitted. The traffic impact analysis must be able to show that the maximum traffic volume on a cul-de-sac within this type of area will not serve more than 1,000 vpd. See the Town of Castle Rock Detail Plans for cul-de-sac specifications. See Section 2.8 for additional criteria.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way width. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for industrial streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.4 Collector – Minor Residential

1. Street Function and Characteristics

- A. A minor residential collector street is a general term denoting a street whose primary purpose is to move traffic through a residential area to major roadways outside of the neighborhood. While they should be continuous, care must be taken to ensure that they do not function as arterials or encourage “cut-through” traffic within residential neighborhoods.

- B. The streets should accommodate both pedestrian and bicycle activity. Due to the fact that they may have traffic volumes higher than the residential streets they serve, parking should not be permitted. This type of street should have a maximum traffic volume of 7,000 vpd.

2. Traffic Control

Traffic control will normally be limited to stop signs, although when necessary, roundabouts will also be considered. At intersections with major collectors and arterials, traffic signals may also be required. Turn lanes may be required at major intersections.

3. Access Conditions

Minor residential collectors may intersect local residential and mixed-use streets, non-residential and major collectors, and arterial streets. There should be no house frontage or other accesses along the street. See Figure 3.1 for Intersection Spacing and Section 3.1.5 for access criteria.

4. Sidewalks and Bike Lanes

Detached sidewalks will be installed along both sides of the street. A bike lane will be marked in each direction of travel. See Appendix A for the typical sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor residential collector streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.5 Collector – Minor Non-residential

1. Street Function and Characteristics

- A. A minor non-residential collector street is a general term that denotes a street whose primary purpose is to move traffic through a primarily non-residential area to major roadways outside of the neighborhood. This type of street may serve commercial, industrial and mixed-use developments.
- B. A minor non-residential collector should have a maximum traffic volume of 7,000 vpd. On-street parking should not be permitted. Although they should be designed to accommodate larger volumes of traffic, care should be taken to not encourage through traffic from outside of the area to be served. A higher percentage of truck traffic will be found on this classification of street than the residential collector.

2. Traffic Control

Traffic control will normally be limited to stop signs, although when practicable, roundabouts will also be considered. At intersections with major collectors and arterials, traffic signals may also be required. Turn lanes may be required at major intersections.

3. Access Conditions

Non-residential collectors may intersect with both local residential and mixed-use streets, residential and major collectors, and arterial streets. There should be no residential frontage permitted along this classification of street. Driveway access to commercial, industrial or mixed-use developments is permitted. See Figure 3.1 for Intersection Spacing and Section 3.1.5 for access criteria.

4. Sidewalks and Bike Lanes

Sidewalks will be located along both sides of the street to accommodate both pedestrian and bicycle traffic. Due to the larger volumes of truck and turning traffic, bike lanes will not be required except when the roadway is identified as a bicycle route in the Town's Transportation Master Plan. See Appendix A for the Typical Sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and "knuckles" shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor non-residential collector streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.6 Collector – Major**1. Street Function and Characteristics**

- A. A major collector's function is to provide access from the lower street classifications to the arterial street system. They will be continuous by design and provide for the unimpeded movement of traffic, but care should be taken to ensure that they do not function as arterial streets.
- B. This classification of street will typically have 2 travel lanes and dedicated turn lanes. Collector streets having greater than 7,000 vpd should be considered "major" collectors. Parking shall not be permitted on this classification of street.

2. Traffic Control

Traffic control will include traffic signals, stop signs, and when practicable, roundabouts. Roundabouts should be used whenever possible so as to reduce delay. Turn lanes may be required at all intersections.

3. Access Conditions

Major collectors should be used to facilitate the movement of traffic and not to provide access to adjacent properties. They may be intersected by arterial, collector streets, and by local mixed-use categories of streets. There should be no residential frontage permitted along this classification of street. No driveway access is permitted, although curb cuts serving commercial, industrial or mixed-use developments may be permitted. See Section 3.1.5 for access criteria.

4. Sidewalks and Bike Lanes

Sidewalks will be located along both sides of the street to accommodate both pedestrian and bicycle traffic. Bike lanes will be required for both directions of travel. See Appendix A for the Typical Sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for major collector streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.7 Arterial – Minor

1. Street Function and Characteristics

- A. The primary function of a minor arterial is the unimpeded movement of traffic through the Town. Minor arterials should be located adjacent to, but not within, neighborhoods. Arterials should form boundaries between developments and types of land uses.
- B. A minor arterial street will be provided for traffic volumes either in excess, or expected to ultimately be in excess, of 12,000 vpd. It will typically have 2 traffic lanes in each direction with auxiliary turn lanes. Parking shall not be permitted on this classification of street.

2. Traffic Control

Traffic control will primarily be either through the use of roundabouts or traffic signals. Roundabouts should always be the first choice when practicable. When neither a traffic signal nor roundabout can be installed, access from side streets should be limited to right-in/right-out movements only.

3. Access Conditions

Control of access is a priority for this street classification. The spacing of access points/intersections should be limited to one-quarter mile intervals or more in order to optimize traffic signal progression. See Section 3.1.4 for access criteria.

4. Sidewalks and Bike Lanes

Detached sidewalks and on-street bike lanes will be provided on both sides of the street. See Appendix A for the typical sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor arterial streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

2.1.8 Arterial – Major**1. Street Function and Characteristics**

- A. The function of a major arterial is the unimpeded movement of traffic through the Town. Major arterials should be located adjacent to, but not within, neighborhoods and form boundaries between developments and types of land uses.
- B. A major arterial will be provided for traffic volumes either in excess, or expected to ultimately be in excess, of 15,000 vpd. It will have a minimum of 2 traffic lanes in each direction with auxiliary turn lanes. Parking shall not be permitted on this classification of street.

2. Traffic Control

Traffic control will primarily be either through the use of roundabouts or traffic signals. Roundabouts should always be the first choice when

practicable. When neither a traffic signal nor roundabout can be installed, access from side streets should be limited to right-in/right-out movements only.

3. Access Conditions

Control of access is a priority for this street classification. The spacing of access points/intersections should be limited to one-half mile intervals or more in order to optimize traffic signal progression. See Section 3.1.3 for access criteria.

4. Sidewalks and Bike Lanes

Detached sidewalks and on-street bike lanes will be provided on both sides of the street. See Appendix A for the typical sections and Section 8 – Pedestrian and Bicycle Facilities.

5. Cul-de-sacs and Knuckles

Cul-de-sacs and “knuckles” shall not be permitted on this street classification.

6. Right-of-Way

See Appendix A for the typical sections showing the minimum right-of-way widths. Additional right-of-way may be required for auxiliary lanes. Sight distance triangles should be accounted for with restrictions, easements or within the right-of-way.

7. Technical Design Criteria

The technical design criteria for minor arterial streets can be found in Tables 2.2, 2.3, 2.4 and 2.5. Typical sections are included in Appendix A.

TOWN OF CASTLE ROCK TRANSPORTATION DESIGN CRITERIA MANUAL

Table 2.2 - Street Design Criteria

Criteria	Local		Industrial	Collector			Arterial	
	Residential	Mixed Use		Minor Residential	Minor Non-Residential	Major	Minor	Major
Average Daily Traffic (VPD)	< 1,500	< 15,000	< 3,000	< 7,000	< 7,000	> 7,000	> 12,000	> 15,000
Design Speed (mph)	25	25	30	30	30	35	40	45
Posted Speed (mph)	25	25	30	30	30	35	40	45
Minimum-Maximum Street Grade	1 - 8% ^{5, 8}	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸	1 - 6% ⁸
Minimum Center Line Radius (ft)	200'	200'	330'	330'	330'	510'	762'	1040'
Min. Tangent Between Reverse Curves	0'	0'	0'	50'	50'	100'	100'	See ¹
Vertical Curve Min. K-Value (Crest)	12	12	19	19	19	29	44	61
Vertical Curve Min. K-Value (Sag)	26	26	37	37	37	49	64	79
Min. Length Vert. Curve - Crest / Sag (ft)	See AASHTO Design Controls for Vertical Curves - Crest and Sag							
Min. Stopping Sight Distance (ft)	155' ⁷	155' ⁷	200' ⁷	200' ⁷	200' ⁷	250' ⁷	250' ⁷	360' ⁷
Min. Stopping Sight Distance at Intersections & Turning Roadways	Based on Design Speed of the Vehicle Path on the Curve (Applicable to Intersections, turning roadways and knuckles) ⁷							
Travel Lane Width	See Typical Sections in Appendix							
Number of Travel Lanes								
Right-of-Way Width								
Paved Width								
Curb Type								
Sidewalk Width								
Roadway Cross Slope								
Parking Lane (Y/N)	Y	Y	Y	N	N	N	N	N
Parking Lane Width (ft)	See Typical Sections in Appendix			N/A	N/A	N/A	N/A	N/A
Bike Lane (Y/N)	N	N	N ⁶	Y	N ⁶	Y	Y	Y
Bike Lane Width (ft)	N/A	N/A	See Typical Sections in Appendix					
Median Width (ft)	N/A	N/A	N/A	See Typical Sections in Appendix				
Minimum Pavement Section	Based on Approved Pavement Design Report - See Pavement Design Section							
Curb Return Radii (ft) ⁴								
Arterial Intersection	35' ²	35' ²	50'	35'	35'	35'	50'	50'
Collector Intersection	30'	30'	35'	30'	30'	30'	35'	35'
Industrial Intersection	35'	35'	35'	35'	35'	35'	50'	50'
Local Intersection	20'	30'	35'	30'	30'	30' ²	35' ²	35' ²
Entry Street ³	20'	30'	35'	30'	30'	30'	35'	35'
Intersection Spacing	See Figure 3.1							
Driveway and Street Access	See Section 3 - Access Requirements & Criteria							
Design Vehicle	SU	WB-50	WB-50	WB-50	WB-50	WB-50	WB-50	WB-67

Notes

1. Min. tangent length between curves shall be equal to or greater than the sum of Superelevation Runoff and Tangent lengths as per AASHTO Greenbook"
2. Arterial/Local and Major Collector/Local intersections are not allowed. An Entry Street may be necessary. Listed values may apply to existing intersections.
3. See Appendix A for Entry Street typical section
4. Curb returns must accommodate largest design vehicle so that conflicting approach lanes are not encroached upon.
5. The max. grade for Local Residential roads may be increased to 8% for southerly facing slopes between South 60° East and South 45° West.
6. Bike lanes shall be required when street is a proposed bike route in the Transportation Master Plan.
7. Stopping Sight Distance: The height of eye is 3.5 ft and the height of object is 2.0 ft.
8. To meet ADA Accessibility Guidelines (ADAAG) for accessible routes, a maximum grade of 5% is recommended (not required) for streets with adjacent sidewalk.

2.2 DESIGN CRITERIA - SIDEWALKS, CURB RAMPS, AND DRIVEWAYS

2.2.1 Sidewalks

1. Sidewalks or bicycle paths shall be constructed on both sides of all roadways unless specifically deleted by action of the Town Council. Per Table 2.1, some low density residential streets may limit sidewalks to one side of the street if it is demonstrated sidewalks on both sides are unnecessary. The site plan for these low density neighborhoods must be approved by Town Council.
2. Combination curb, gutter, and sidewalk shall be approved for use on local residential and industrial roadways only. Vertical curb, gutter and detached walk shall be used as shown on the typical sections in Appendix A.
3. Downtown sidewalks vary from sidewalks in other areas of the Town. The Downtown area where the following standards apply is consistent with the Downtown Overlay District area as defined in the Municipal Code.
 - A. The minimum sidewalk width in Downtown shall be 8 feet if the sidewalk is detached from the curb by a 4-foot minimum landscaping strip.
 - B. The minimum sidewalk width in Downtown shall be 8 feet with a minimum 2-foot curb shy accent between the sidewalk and curb when attached to the curb. See Figure 2.0. Additional sidewalk width and/or curb shy may be required with respect to scale, surrounding development patterns, and right-of-way availability.
 - C. The preferred width for an attached sidewalk is 12 feet. This width includes a 4-foot wide accented furnishing zone for amenities such as benches, trash cans, bike racks, and shade trees. See Figure 2.1
 - D. All street trees, unless in a landscape strip, shall be placed in ADA compliant tree grates.
 - E. These standards (Section 2.2.1.3) apply to all redevelopment within the defined Downtown area as determined by the Town with respect to

scale, surrounding development patterns, and right-of-way availability. These standards can apply where the street can be practicably narrowed without compromising the street function.

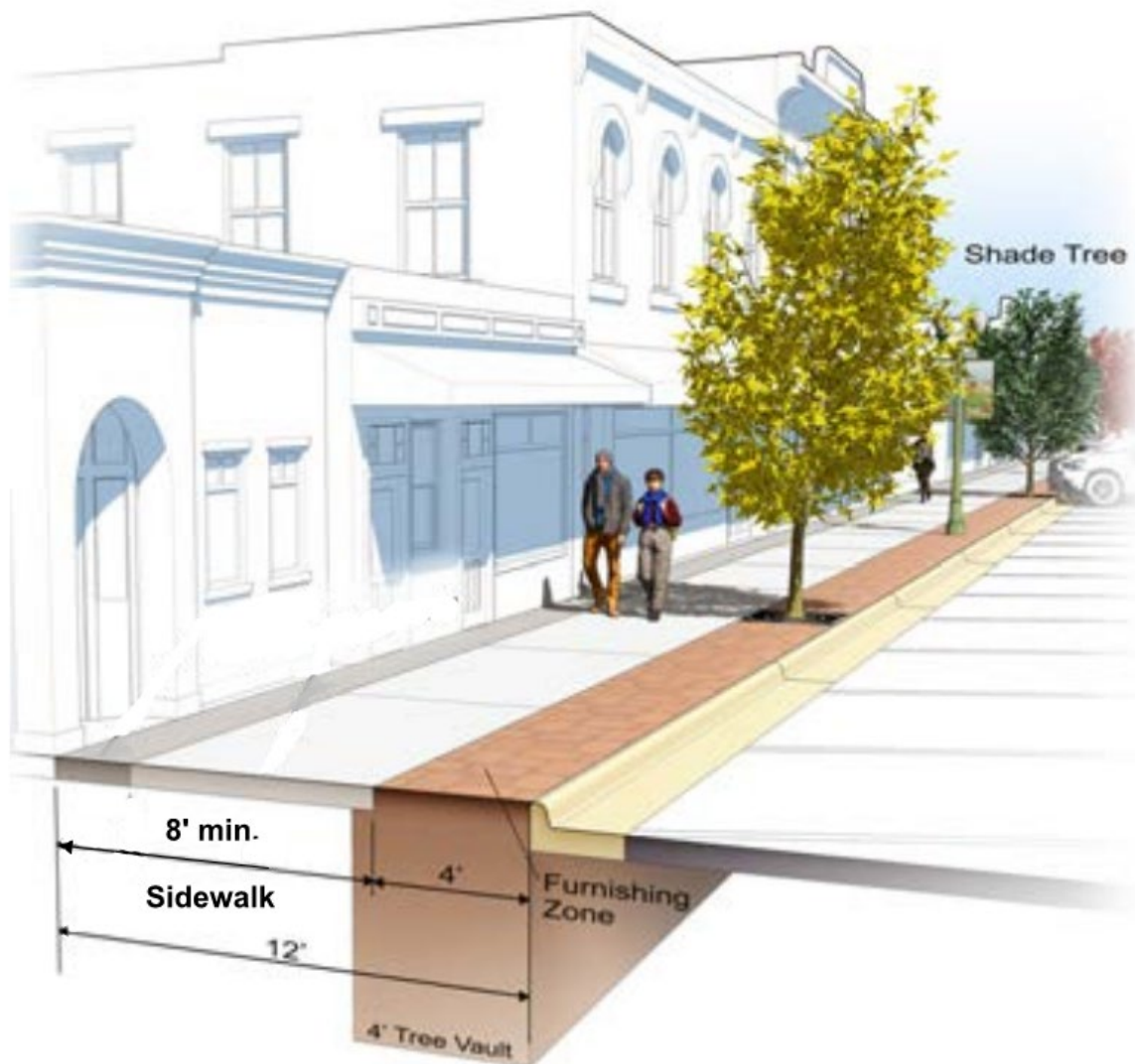
- F. These standards (Section 2.2.1.3) shall not apply to tenant finish permits or architectural façade revisions or where available width for the sidewalk is constrained by existing buildings, structures, mature desirable trees or comparable features.

- 4. See Section 8 of these Criteria for additional criteria related to sidewalks.

Figure 2.0



Figure 2.0-A



2.2.2 Pedestrian Curb Ramps

1. Federal law requires ADA-compliant pedestrian curb ramps at all intersections and at certain mid-block locations for new construction or reconstruction of roadways, curb, and sidewalk. Ramps shall be constructed

in accordance with the Town of Castle Rock Detail Plans or CDOT M&S Standards

2. Pedestrian curb ramps shall be installed at all curb returns and at all “T” intersections directly opposite either curb return.
3. Whenever referencing a handicap ramp, the designer shall call out the specific standard detail to be used to construct the ramp.
4. Detailed curb ramp design shall be provided on construction plans to demonstrate compliant grades, turning space dimensions, etc.
5. Mid-block curb ramps should be located to avoid interference with future driveways.

2.2.3 Driveways

1. When the number of parking spaces serviced by the driveway exceeds 10, radius returns may be required. The Town shall review the parking area size and location relative to the street, in addition to the anticipated type of vehicles, to approve the proposed type of street access; i.e. curb cut or curb returns. See Chapter 3 of these *Criteria* for entrance requirements.
2. Where curb cuts are allowed based on traffic considerations, concentrated storm water runoff must not be discharged across the sidewalk. These flows must be directed to storm sewers or a detention facility. If this is not possible due to grading restraints, radius returns and a crossspan must be used.
3. Driveway access to public streets shall be constructed in accordance with the Town of Castle Rock Detail Plans.
4. See Section 2.4.2 for driveway grades approaching public streets.

2.2.4 Design Criteria - Drainage

The storm drainage system shall be designed in accordance with the Town of Castle Rock’s Storm Drainage Design and Technical Criteria Manual. In the case of a conflict caused by these requirements the stricter drainage requirements should govern.

2.2.5 Crosspans

1. Crosspans are not permitted across entry streets, collectors (minor or major), or arterials (minor or major) but may occur parallel to these streets across a local street intersection. If there is storm sewer in the street within 100 feet, no crossspan shall be allowed across a local street.
2. Crosspans shall be constructed in accordance with the Town of Castle Rock Detail Plans.
3. If pavement is concrete, any drainage conveyance, such as crosspans, may be poured monolithically with the main line paving process.
4. Mid-block crosspans are not permitted.
5. Crosspans in the public right-of-way are not permitted across the entrance to private streets or driveways at signalized or future signalized intersections where the traffic flow would be negatively affected by the crossspan, as determined by the Town. Crosspans in public right-of-way shall have a minimum width of 8 feet. The Town may require 10' width for certain intersections where traffic operations would be detracted by using an 8 foot crossspan.
6. Pedestrian crosswalks/routes shall not be located within drainage crosspans.

2.2.6 Inlets

1. Inlets shall be located to intercept the curb flow at the point curb flow capacity is exceeded by the storm runoff. Refer to Storm Drainage Design and Technical Criteria Manual for additional details.
2. Inlets shall be installed to intercept cross-pavement flows at points of transition in superelevation. Roadways shall not be designed to allow water to sheet flow across the road pavement or across intersections.
3. Inlets are not allowed in the curb returns but will be located at or behind the tangent points of the curb returns.
4. Inlets shall be required as needed for medians with “catch” curb.

5. Inlets shall be located a minimum of 5 feet away from driveways.

2.2.7 Cross Slope

1. Except at intersections, roadways shall be level from top of curb to top of curb (or flowline to flowline) and shall have a 2% crown.
2. Parabolic or curved crowns are not allowed. In no case shall the pavement cross slope at warped intersections exceed the grade of the through street.
3. The rate of change in pavement cross slope when warping side streets at intersections shall not exceed 1% for every 25 feet horizontally on a local roadway; 1% for every 37.5 feet horizontally on a collector roadway; or 1% for every 56.5 feet horizontally on arterial roadways.
4. Flowline profiles shall be provided wherever the flowline is not symmetrical with the street centerline profile.

2.2.8 Sidewalk Chase Drains

1. Storm water from concentrated points of discharge shall not be allowed to flow over sidewalks, excluding standard swales on property lines in residential neighborhoods.
2. Sidewalk chase drains will only be allowed in special situations, on a case-by-case basis, as determined by the Town. Sidewalk chase drains, when permitted, are to be used to allow surface drainage to enter into the street gutter rather than being used to avoid the use of a standard inlet.
3. Sidewalk chase drains shall not be located within a curb cut or driveway.
4. Sidewalk chase drains shall be designed in accordance with the Town of Castle Rock Detail Plans.

2.2.9 Temporary Erosion Control

1. Temporary erosion control shall be provided in accordance with the Town's Temporary Erosion and Sediment Control Criteria.
2. Temporary erosion control is required along and at the ends of all roadways that are not completed due to project phasing, subdivision boundaries, etc. Such erosion control measures shall be maintained by the property owner in good working condition and at no cost to the Town.

2.3 HORIZONTAL ALIGNMENT

2.3.1 Horizontal Curves

1. Horizontal curves for all roadway types shall be designed in accordance with the latest version of the AASHTO design criteria or as shown in Table 2.2.
2. Shifts in through lane alignments to accommodate auxiliary lanes must meet or exceed MUTCD and/or AASHTO standards, in addition to minimum radii requirements.

2.3.2 Design Speed

1. Horizontal alignment design speed shall be consistent with the requirement for vertical alignment design speed.
2. Design speed must be based on providing all geometric elements to maintain the design speed along the entire stretch of the road.
3. Drivers tend to travel somewhat faster in the downgrade than in the upgrade direction. This should be recognized in the designs for roadways on steep grades.

2.3.3 Superelevation

1. The use of superelevation shall not be allowed on any roadways with a design speed of 40 mph or less.

2. The use of superelevation on Town roadways with a design speed of 45 mph may be considered on a case-by-case basis as determined by the Public Works Department. If approved, such roadways shall be designed in conformance with these standards and the AASHTO "Green Book".

2.3.4 Sight Distance – Horizontal Alignment

1. The major considerations in alignment design are safety, grade, profile, road area, design speed, sight distance, topography, drainage, and performance of heavy-duty vehicles. Alignment should provide for safe and continuous operation at a uniform design speed. Road layout shall bear a logical relationship to existing or platted roads in adjacent properties.
2. The horizontal alignment must provide at least the minimum stopping distance for the design speed at all points. This includes visibility at intersections as well as around curves and roadside encroachments.
3. The lateral clearance, the distance from the inner edge of pavement to sight obstructions, for various radii of inner edge of pavement and design speeds, is shown graphically in the AASHTO "Green Book". The position of the driver's eye and the object sighted are assumed to be 6 feet from the inner edge of pavement, with the stopping sight distance being measured along this arc.
4. Whenever possible, intersections shall be made at right angles or radial to a curve. No intersecting angle less than 80 degrees will be allowed.

2.3.5 Stopping Sight Distance

1. See Table 2.2 for minimum stopping sight distance for the roads design speed.
2. The minimum stopping sight distance is the distance required by the driver of a vehicle traveling at the design speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is calculated in accordance with the AASHTO "Green Book", latest edition.
3. Where an object off the pavement or in the median that restricts sight distance, the minimum radius of curvature is determined by the stopping sight distance. In no case shall the stopping sight distance be less than as

specified in AASHTO “Green Book”. A likely obstruction may be a bridge abutment, a line of columns, walls, fences, cut slopes, or buildings.

4. The sight distance design procedure shall assume a 6’–0” fence (as measured from actual finished grade) exists at all property lines except in the sight-distance triangles required at all intersections.

2.3.6 Approach Sight Distance

Intersections with yield signs or no traffic control

1. Sight Triangle – There shall be an unobstructed sight distance along both approaches of both sides at an intersection and across their included corners for distances sufficient to allow the operators of vehicles, approaching simultaneously, to see each other in time to prevent collisions at the intersection. The sight triangle shall meet requirements found in AASHTO “Green Book”. See Section 2.3.8 for sight distance line criteria.

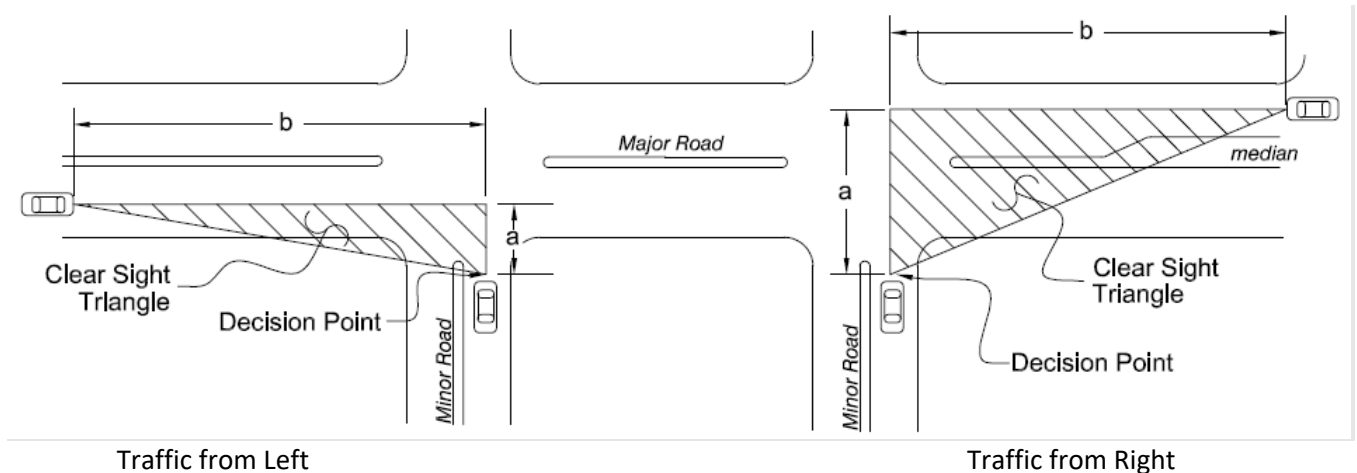
These criteria also require the elimination of parking within the sight triangles on non-local roads and applies whether the intersecting roads are level or on grades.

2.3.7 Departure Sight Distance

Intersection Sight Distance from stop condition

1. The clear sight line for viewing traffic approaching from both the left and the right shall use the minimum intersection sight distance detailed in the AASHTO “Green Book”. See Section 2.3.8 for sight triangle restrictions.
2. To determine the clear sight distance for viewing traffic approaching from the left, see AASHTO “Green Book” for the dimension of Leg “b” of the Departure Sight Triangle. Leg “a” for a two-lane road shall always be $\frac{1}{2}$ of the lane width + 14.5 feet. See Figure 2.1
3. To determine the clear sight distance for viewing traffic approaching from the right, see AASHTO “Green Book” for the dimension of Leg “b” of the Departure Sight Triangle. Leg “a” for a two-lane roadway shall always be 1 lane + $\frac{1}{2}$ of a lane width + 14.5 feet. The distance for Leg A and the distances shown in AASHTO “Green Book” will vary based on the width of the roadway. See Figure 2.1

4. For private driveways, a distance of 10 feet may be used in place of the 14.5 feet dimension in the Leg “a” formula above. For private driveways that have the same function of public streets (direct connection between two public streets), the Leg “a” shall be the same as public street intersections.
5. The impacts of median height and landscaping on departure sight distance shall also be evaluated. The evaluation of the sight distance shall take into account both when the trees are newly planted and once mature.



Approach Sight Triangles for viewing traffic approaching the minor road from the left and the right.
(Minor Road is a Stop Condition - See Section 2.3.7 additional information)

Figure 2.1 – Intersection Sight Triangles

2.3.8 Sight Distance Line Criteria

1. No solid object (excluding fire hydrants and traffic control devices, streetlights and traffic signs) exceeding thirty (30) inches in height above the flowline elevation of the adjacent street, including but not limited to buildings, utility cabinets, walls, fences, landscape plantings, crops, cut slopes, and berms, shall be placed within sight distance lines.
2. Within sight distance lines, trees with a caliper of no greater than twelve (12) inches and a branching height no less than eight (8) feet, as measured from the adjacent street flowline, will be allowed if it can be demonstrated that these trees will not negatively impact the vehicular sight distance. The tree species will be of a type that will naturally conform to these specifications when mature. All limbs must be maintained such that no branches fall below the 8 feet height.

3. Sight distance lines should be contained in the public right-of-way. In areas where sight lines unavoidably cross private property, a sight distance easement shall be described and conveyed to the Town. In cases, where an off-site sight distance easement is necessary, the easement must be acquired by the developer and conveyed to the Town.
4. On local residential streets, the streets and lots should be designed to avoid sight lines crossing residential lots. Where sight lines on private lots are unavoidable, the sight distance line should have minimal impact on the residential lot. Sight lines are not permitted to cross property lines that are fenced or have the ability to be fenced. Sight distance lines in the front yards of residential lots shall not encroach more than five (5) feet.
5. All sight distance lines must be shown on the site plan, landscape plans and construction drawing plan/profile sheets.
6. Sight Distance Line Criteria within the Downtown area shall be reviewed on a case-by-case basis with respect to on-street parking and existing obstructions.

2.3.9 Intersection Safety Triangle

At every intersection of two (2) or more existing or proposed streets, a safety triangle shall be calculated by extending a line twenty-five (25) feet in length at the point of the intersection of the edges of the driving surface of the corner property from the intersection corner and traversing across the property between the two (2) end points of such lines. Such a safety triangle shall be calculated for every corner of every intersection. Additionally, safety triangles shall be calculated at the intersections between all driveways or bike paths with streets and alleys utilizing a similar method with fifteen (15) foot lengths on the sides. Within these safety triangles there shall be no solid objects between two and one-half (2½) feet and ten (10) feet above street elevation. (Ord. 2001-37 §4, 2001)

2.3.10 Vertical Sight Distance

The vertical sight distance shall be verified to ensure that the sight distance along the major street is sufficient to allow a vehicle to cross or turn left, whichever is required. All vertical sight distance measurements must conform to AASHTO "Green Book" criteria.

2.4 VERTICAL ALIGNMENT

2.4.1 Vertical Curves

1. Vertical curves for all roadway types shall be designed in accordance with Table 2.2 or the latest version of the AASHTO design criteria.
2. K values exceeding 125 on curbed streets should be checked for drainage. Multiple inlets may be required within long sag vertical curves where the longitudinal slope is less than 1%.

2.4.2 Roadway Grades

1. See Table 2.2 for minimum and maximum street grades.
2. The use of grades breaks in lieu of vertical curves is discouraged. However, if a grade break is necessary and the algebraic difference in grade does not exceed one percent (1%) along the roadway, the grade break will be permitted.
3. The maximum grade break allowed at the point of tangency at a curb return for local and collector class roads shall be two percent (2%). For arterial class roads the maximum grade break at curb returns shall be one percent (1%).
4. See Table 2.3 for the maximum permissible centerline grade at intersections. These grades are maximum instantaneous flowline grades for each side of street of the minor (intersecting) street. Desirable intersection grades should be in the range of one (1) to four (4) percent for all intersecting streets with the limit of two (2) percent for arterials. ADAAG Standards for pedestrian crossings must be met at all intersections.
5. The intersection grade of the major (through) street at the intersection may be dictated by design considerations for that street. However, if the major street intersection grade exceeds 3% the type of access and access control will be dictated by the Town. See Table 2.4

6. The length of the maximum grade (4%) for private commercial/industrial driveways shall be a minimum of 25 feet measured from the flowline intersection of the public roadway.

Table 2.3
Maximum Permissible Intersection Approach Grades for Minor Streets

		Major Street (Through Street)				
		Local	Minor Collector	Major Collector	Minor Arterial	Major Arterial
M i n o r S t r e e t	Local					
	Industrial	L – 95' G – 4% ¹	100' 4% ¹	100' 4% ¹	125' 4% ¹	125' 4% ¹
	Entry Street					
	Minor Collector	L – G –	100' 4% ¹	120' 3% ¹	150' 3% ¹	150' 3% ¹
	Major Collector	L – G –		120' 3% ¹	150' 3% ¹	200' 3% ¹
	Minor Arterial	L – G –			200' 2%	200' 2%
	Major Arterial	L – G –				200' 2%

L = Minimum length of maximum permissible intersection grades for minor streets.
(Measured from the flowline intersection of the minor and major street)

G = Maximum grade of the minor street within the “L” length

1 - Intersection grades shall meet the Public Right-of-way Accessibility Guidelines (PROWAG) for maximum grades at intersections with respect to the cross slope of the crosswalks. The maximum grade may be less than shown for street approaches that have a stop condition.

**Table 2.4
Maximum Permissible Intersection Grades for Major Streets**

M i n o r S t r e e t	Major Street (Through Street)						
		Local	Industrial	Minor Collector	Major Collector	Minor Arterial	Major Arterial
	Local	5% ¹	5% ¹	5% ¹	5% ¹	5% ¹	5% ¹
	Industrial	N/A	5% ¹	5% ¹	5% ¹	5% ¹	5% ¹
	Entry Street	N/A	N/A	5% ¹	5% ¹	5% ¹	5% ¹
	Minor Collector	N/A	N/A	5% ¹	5% ¹	5% ¹	5% ¹
	Major Collector	N/A	N/A	N/A	5% ¹	5% ¹	5% ¹
	Minor Arterial	N/A	N/A	N/A	N/A	5% ¹	5% ¹
	Major Arterial	N/A	N/A	N/A	N/A	N/A	5% ¹

1 - Intersection grades shall meet the Public Right-of-way Accessibility Guidelines (PROWAG) for maximum grades at intersections with respect to the cross slope of the crosswalks. The maximum grade may be less than shown for street approaches that have a stop condition.

2.4.3 Intersection Grades

1. The grade of the “through” street shall take precedence at intersections. At intersections of roadways with the same classification, the more important roadway, as determined by the Town of Castle Rock Public Works Department, shall have this precedence. The design should warp side streets to match through streets per Section 2.2.7.
2. The key criteria for determining the elevation of the curb return on the side street and the amount of warp needed on a side street transitioning to a through street are:
 - A. Pavement cross slope at the PCRs on the side street and permissible warp in pavement cross slope. (See Section 2.2.7 of these *Criteria*).
 - B. Normal vertical curve criteria (See Section 2.4 of these *Criteria*).

- C. Vertical controls within the curb return itself (See Section 2.4.4 of these Standards).
3. The elevation at the PCR of the curb return on the through street is always set by the grade of the through street in conjunction with normal pavement cross slope allowances.
 4. Carrying the crown of a side street into the through street is permitted only when drainage considerations warrant such a design.
 5. Dipping the flowline to the extent that the lip of gutter is dipped is not permitted, except as specified by Town of Castle Rock Detail Plans concerning curb opening inlets. Tipping an inlet for the benefit of drainage is also not permitted.
 6. A more detailed review shall be performed for arterial-arterial intersections to maximize drivability. Few arterial intersections will have a uniform 2.0% cross slope, the majority of them having one or more sides warped. (See Section 2.2.7 of these standards for rates of pavement warp allowed). A Plan View drawing of all arterial/arterial intersections will be required showing spot elevations on a 10-foot by 10-foot grid.

2.4.4 Curb Returns

1. Minimum fall around curb returns for flow along the curb line shall be as follows:

Table 2.5

Radius	MINIMUM FALL (FT)
15	0.30
20	0.40
25	0.50
30	0.60
35	0.70
40	0.80
50	1.00
Note	<ul style="list-style-type: none">• For Curb Returns where flows travel directly between the PCR and the PI of a crossspan, 1% is the minimum flowline grade.

	<p>1% may be used from the high point of the Curb Return to the PCR</p> <ul style="list-style-type: none"> • PROWAG standards for curb ramp cross slopes are required when curb ramps are within the curb return.
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2. Curb return profiles are required for all curb return radii equal to or greater than thirty (30) feet within the public right-of-way. A midpoint elevation along the arc length of the curb return shall be shown for all curb return radii. Curb return design shall be set in accordance with the following design procedure.
3. General standards for flowline control and profiles within the curb returns shall be as follows:
 - A. The point of tangency at each curb return shall be determined by the projected tangent grade beginning at the point of intersections (PI) of the flowlines.
 - B. The arc length of the curb return shall be computed and indicated on the drawing.
 - C. Show the corresponding flowline (or top of curb) grade for 25-feet on each roadway beyond the PCR.
 - D. Design the flowline of the curb return such that a maximum cross slope between the midpoint of the curve and the PI (tangent intersect) does not exceed eight (8) percent. Grade breaks at the PCRs will not exceed two (2) percent for local and collector streets and one (1) percent for arterials. The flowline design of the curb return will be accomplished within the return without affecting street grades beyond the PCR. Maximum vertical curves will equal the arc length of the curb return. The elevation and location of the high or low point within the return, if applicable, is to be called out in the profile.

- E. Scale for the curb return profile shall match the plan and profile scale which the curb return is shown on.

2.4.5 Connections to Existing Roadways

1. Connections with existing roadways shall be smooth transitions conforming to normal vertical curve criteria if the algebraic difference in grade between the existing and proposed grade exceeds 1.0%. When a vertical curve is used to make this transition, it shall be fully accomplished prior to the connection with the existing improvement, and also comply with the grade requirements at intersection approaches.
2. Existing grade shall be shown for at least three hundred (300) feet, with field verified record drawings, showing stations and elevations at twenty-five (25) foot intervals. In the case of connection with an existing intersection, these record drawings are to be shown within a three hundred (300) foot radius of the intersection. This information will be included in the plan and profile that shows the proposed roadway.
3. Previously approved designs are not acceptable means of establishing existing grades. However, they are to be referenced on the construction plans, where they occur.
4. The basis of the record drawing elevations shall be the same as the design elevation (i.e. either flowline or top of curb) when possible.

2.5 ROADSIDE DESIGN CRITERIA

2.5.1 Clear Zones and Recovery Zones

1. This section shall primarily apply to streets with design speeds in excess of 30 mph. Clear zone mitigation may be applied in any other situations where an unsafe condition is proposed or observed.
2. Roadside clear zones and recovery zones shall be designed utilizing the latest version of the AASHTO Roadside Design Guide.

3. The Recovery Zone is the area adjacent to a roadway that is needed to recover a vehicle when it leaves the roadway. This area must meet certain slope requirements and be clear from any obstructions or additional safety measures may be required. On foreslopes (also called fillslopes) a slope of 4:1 or flatter is considered recoverable. Non-recoverable foreslopes (slopes ranging from 3:1 to 4:1) shall be designed in accordance with the latest AASHTO Roadside Design Guide. Critical foreslopes (slopes steeper than 4:1) shall require guardrail or other form of roadside barrier if closer to the traveled roadway than the recommended clear zone distance.
4. The Clear Zone is the distance necessary to meet the recovery zone slope requirements for safe recovery of a motor vehicle in the event it leaves the roadway. Acceptable clear zone distance shall be determined utilizing the latest version of the AASHTO Roadside Design Guide for determining clear zone distance.

2.5.2 Obstructions

Roadside obstructions include both non-traversable terrain and fixed objects (inlets, trees, buildings, pedestrians, etc.). Roadside obstructions within the clear zone are strongly discouraged. In the event that obstructions do exist within the clear zone, roadside barrier warrants shall be checked to determine if a roadside barrier is necessary. Curb alone is not a sufficient roadside barrier. In the event warrants are met, the applicant shall be responsible for providing an acceptable type of roadside barrier.

2.5.3 Guard Rail

Guard Rail requirements shall meet or exceed the minimum standards set for in the AASHTO Roadside Design Guide. Guard Rail options may also be selected using the CDOT Standards.

2.6 OFFSITE DESIGN

1. The design grade, and existing ground at the design grade, of all roadways that dead end due to project phasing, subdivision boundaries, etc., shall be continued, in the same plan and profile as the proposed design, for at least five hundred (500) feet or to its intersection with an arterial roadway as

determined by the Public Works Department. This limit shall be extended to one thousand (1,000) feet when arterial roadways are being designed.

2. If the offsite roadway, adjacent to the proposed development is not fully improved, the developer is responsible for the design and construction of a transition for the safe conveyance of traffic from the improved section to the existing roadway. The roadway transition should occur in the offsite area.

2.7 AUXILIARY LANES

2.7.1 Deceleration & Acceleration Lanes

1. The need for deceleration lanes shall be determined through an analysis in the approved Traffic Impact Analysis for the Site Plan or Final Development Plan.
2. Requests for exemption from the requirements for deceleration lanes shall be based upon a traffic engineering study that presents trip generation data for the proposed development in terms of impacts upon through traffic flows. Such requests shall be reviewed by the Town and may be approved, except if any of the following conditions exist during the long range traffic planning horizon:
 - A. For exemption of a right turn deceleration lane, the traffic volume in the travel lane must fall below 150 VPH during both the A.M. and P.M. peak hour.
 - B. For exemption of a left turn deceleration lane, the opposing traffic volume must fall below 100 VPH during both the A.M. and P.M. peak hour.
 - C. Other unique conditions that warrants special design consideration.
3. Deceleration lanes may be required along segments of collector streets if the proposed development constitutes a potential for creating a traffic hazard or unnecessarily impedes through traffic movements. In the event deceleration lanes are required for a collector roadway, the designing engineer shall conform to all of the deceleration lane design standards detailed in the latest edition of the AASHTO "Green Book".

4. Deceleration lanes shall have a minimum paved width of ten (10) feet.
5. The design standards for deceleration lanes on Arterial roadways were determined using the minimum standards set forth in the State of Colorado's "State Highway Access Code - Volume 2". The following tables detail the requirements for the determination of Roadway Classification, Acceleration and Deceleration Lengths, Taper Lengths, Storage Lengths and when each of the criteria should be accounted for in design.
6. The access classification should be determined by utilizing the Town's Transportation Master Plan roadway designations and then determining the corresponding access classifications. The table below lists the Access Classification for Collectors and Arterial Roadways:

**TABLE 2.6
ACCESS CLASSIFICATION
FOR COLLECTORS AND ARTERIALS**

ROADWAY TYPE	ACCESS CLASSIFICATION
MINOR COLLECTOR	NR-C
MAJOR COLLECTOR	NR-C
MINOR ARTERIAL	NR-B
MAJOR ARTERIAL	NR-B

From the State of Colorado's State Highway Access Code Volume 2, Code Of Colorado Regulations 601-1.

7. The components of Speed Change Lanes vary based on the roadway access classification. The table below lists the components for speed change lanes for each access classification:

**TABLE 2.7
COMPONENTS OF SPEED CHANGE LANES LENGTH
FOR COLLECTORS AND ARTERIALS**

ACCESS CLASSIFICATION	LEFT TURN DECELERATION	RIGHT TURN DECELERATION	ACCELERATION
NR-B	TAPER + STORAGE	TAPER + STORAGE	ACCEL. LENGTH
NR-C	TAPER + STORAGE	TAPER + STORAGE	ACCEL. LENGTH

From the State of Colorado's State Highway Access Code Volume 2, Code Of Colorado Regulations 601-1.

8. The minimum Acceleration and Deceleration Lengths for Major Collectors and Arterials are detailed in the following table:

**TABLE 2.8
ACCELERATION AND DECELERATION LENGTH
FOR MAJOR COLLECTORS AND ARTERIALS**

DESIGN SPEED	MIN. LENGTH (FEET) ACCEL.	MIN LENGTH (FEET) DECEL.
30	190	250
35	270	310
40	380	370
45	550	435

9. Minimum storage length required based on turning vehicles per hour is detailed in the following Table 2.9. The required storage length may be distributed over multiple turn lanes.

**TABLE 2.9
ACCELERATION AND DECELERATION STORAGE LENGTH
FOR COLLECTORS AND ARTERIALS**

VEHICLES PER HOUR	BELOW 30	30	60	100	200	300
REQUIRED LANE LENGTH	25'	40'	50'	100'	200'	300'

10. The lead-in taper length for the deceleration lane shall be based upon the posted speed limit along the street, except that a minimum of one hundred

sixty (160) feet shall be required. The following table details the taper ratios for each possible posted speed limit:

**TABLE 2.10
DECELERATION TAPER LENGTH
FOR COLLECTORS AND ARTERIALS**

POSTED SPEED (MPH)	TAPER RATIO
30	8:1
35	10:1
40	12:1
45	13.5:1
50	15:1

- 11.** Auxiliary lanes and the associated signage and pavement marking shall be installed prior to the issuance of any Certificate of Occupancy within the development.
- 12.** Curb and gutter transitions from through lane section to turn lane sections shall use radii.
- 13.** Shifts in through lane alignments to accommodate auxiliary lanes must meet MUTCD and/or AASHTO standards.

2.8 CUL-DE-SACS

2.8.1 Geometry

1. The following criteria shall be used for cul-de-sac horizontal geometry:

Minimum right-of-way radius	50 feet
Minimum flowline radius	43 feet
Maximum length of cul-de-sac, (as measured along and between the radius point and the ROW line of the abutting street whichever is greater)	1,200 feet or a maximum of 40 dwelling units

2. Cul-de-sac lengths over 600 feet require structures with built-in fire suppression. (for those structures beyond 600').

2.8.2 Number of Dwelling Units with a Single Access

The number of dwelling units with a single access shall generally be as described in Section 2.8.1.1. If an Entry street (main access to subdivision) is the single access to a group of homes, depending on the internal street alignments, up to 100 dwelling units may be allowed with written approval of the Fire Department. Factors that affect the allowable dwelling units with a single access are: the length of the streets from a through Collector or Arterial; if, after entering the Development, there is a circle drive so there is more than one way to get to a particular dwelling unit; topography; vegetation; and other considerations deemed important by the Town for emergency access.

2.9 ENTRY STREETS

1. Only minor collectors or entry streets may connect residential neighborhoods to major collectors or arterials. When minor collectors are not appropriate, entry streets shall be used and meet the following criteria:
 - A. A typical cross section for an entry street is shown in Appendix A. Entry streets shall be a minimum of 200' in length and/or shall extend to the

first intersection from the arterial or collector. No driveway access shall be allowed. Entry streets shall be posted "No Parking".

- B. An "entry street" is considered a lower classification street than a collector but greater than a local street. Therefore, for example, entry street criteria for separation between intersections along a minor collector cannot be used to place a collector street within 160 feet of another intersection.

2.10 MEDIAN ISLANDS

1. No permanent improvements (trees, poles, large rocks, etc.) shall be placed within 10 feet of the traveled lane unless a raised planter box median (per Town of Castle Rock Detail Plans) is constructed. Permanent improvements shall not obstruct sight distance or violate clear zone requirements. Planter boxes may be allowed in raised medians on Entry Streets, Major Collectors and Arterials on a 'case-by-case' basis as approved by the Town.
2. The nose of the median island shall not extend past the curb return at the intersection. Each intersection with median islands must be designed using the appropriate design vehicle and associated turning clearance requirements for the functional classification of the roadway. The higher class roadway shall take precedence for design vehicle. Diagrams using turning templates of the design vehicle may be required as part of the roadway plan submittal. Tapered curbs should be included at the end of the median.
3. A minimum flowline to flowline roadway dimension of 18 feet must be maintained on both sides of all median islands to accommodate disabled and emergency vehicles.
4. Median islands four (4) feet wide or less may not be landscaped and must be hardscaped. See the Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria Manual for acceptable hardscapes.

2.11 SECONDARY ACCESS AND FIRE LANES

2.11.1 Design Criteria

1. Any secondary access roads, including fire lanes, not constructed as part of the public street system shall meet the following design criteria in addition to the roadway design criteria within this manual.
 - A. The slope of the access road shall be a minimum of 1% and a maximum of 8%.
 - B. The cross slope of the access road shall be a minimum of 1% and a maximum of 4%.
 - C. The lane width shall be a minimum of 20 feet.
 - D. There shall be a minimum of 18 feet of vertical clearance over the entire access road.
 - E. The surface of the roadway must be paved. All pavements shall be designed in accordance with Section 14 – Pavement Design.
 - F. The fire lane shall be equipped with a gate that is approved as a "break away" by the Fire Department. An electronic detection system (i.e. Opticom) may also be required.
 - G. The Owner shall be responsible for maintenance of the emergency access including snow removal, gate and electronic detection system.

2.11.2 Fire Lanes

Fire lanes shall be required when safe access to structures within a project area is limited. Fire lanes require approval of the Town's Fire Department.

2.11.3 Alleys

- A. Where proposed, alleys should be open at both ends of a block.
- B. An approved turnaround area, capable of accommodating fire department vehicles, shall be provided in dead-end alleys with lengths exceeding 150 feet.
- C. Public and private alley pavements require the submittal of a Pavement Design Report for Town review and approval.
- D. Alleys are not considered primary access to parcels.
- E. The spacing requirement for alleys shall be consistent with Local streets.

2.12 RAILROAD CROSSINGS

All railroad crossings shall be designed in accordance with AASHTO “Green Book” and must be approved by the affected railroad company.

2.13 CONSTRUCTION TRAFFIC CONTROL

2.13.1 Vehicular Traffic

- 1. Construction work zone traffic shall be controlled by signs, barricades, detours, etc. which are designed and installed in accordance with the MUTCD, most recent edition, and applicable Castle Rock Traffic Standards.
- 2. A traffic control plan shall be submitted and approved by the Public Works Department prior to the start of any construction or work in the right-of-way.
- 3. All street closures will require a permit from the Town must be submitted 7 days prior to lane closure and 21 days prior to a street closing.
- 4. Newly constructed roadways shall not be opened until the roadway is conveyed to and accepted by the Town.

5. The MUTCD shall be the basis upon which the construction traffic control plan is designed. All necessary signing, striping, coning, barricading, flagging, etc., shall be shown on the plan.
6. Town streets shall not be closed overnight.
7. Street or lane closures will not occur before 8:30 a.m. or after 3:30 p.m. If exceptions to this are required, this shall be so noted on the construction traffic control plan.
8. Directional access on roadways may be restricted, but proper controls including flagging, are required.
9. Removal of on-street parking should be considered, and noted where applicable.

2.13.2 Pedestrian Traffic

1. Pedestrian access shall be maintained on the existing sidewalks at all times or as approved by the Town.
2. Where construction interrupts the continuity of the sidewalk, suitable bridge or deck facilities shall be provided, to be supplemented by the use of such devices and measures as prescribed in the Manual of Uniform Traffic Control Devices (MUTCD) most recent edition, for the safe and uninterrupted movement of pedestrian traffic.
3. The edges or ends of the pedestrian bridge or decking shall be beveled or chamfered to a thin edge to prevent tripping.
4. Temporary diversion walkways shall be hard surfaced and electric lighting shall be provided and kept continuously burning during hours of darkness.
5. Flaggers shall be provided for guidance as necessary.
6. Pedestrians shall not be channeled to walk on the traveled portion of a roadway.
7. Under certain conditions, it may be necessary to divert pedestrians to the sidewalk on the opposite side of the street. Such crossings shall only be made at intersections or marked pedestrian crossovers.

2.13.3 Barricades

- 1.** Whenever roadways terminate due to project phasing, subdivision boundaries, etc., barricades shall be installed and maintained.
- 2.** Design and installation shall comply with the requirements of the MUTCD, most recent edition.
- 3.** The barricades shall be shown on the construction drawings.

Section 3

ACCESS REQUIREMENTS & CRITERIA

3.0 ACCESS APPROVAL PROCESS

3.0.0 Access to public right-of-way is approved through one of two processes:

1. For new development or development amendments, access is approved through the process outlined in the Town's *Procedures Manual*.
2. For properties modifying the access to public right-of-way, approval may be acquired through the Construction Permit process. These processes are explained in more detail below.
 - A. For new development or redevelopment of parcels in the Planned Development (PD) zones or Straight zones that require a Site Development Plan or a Site Development Plan Amendment, the new or altered access will be reviewed and approved through the Town's Site Development Plan process. A Site Development Plan application accompanied by appropriate plans for the access and technical justifications for its location, size, and extent of improvements will be necessary.
 - B. For existing developed parcels that are proposing minor changes to their access or changes that are only in the public right-of-way, and do not require a Site Development Plan Amendment, the access may be reviewed and approved through a Construction Permit process.

The Town's Technical Review Committee (TRC) is available to provide advice on the extent of technical justification required for any access request. It is recommended that this advice be sought prior to submitting any application.

3.1 CRITERIA FOR ACCESS ONTO ROADWAYS

3.1.1 Access onto State Highways

1. For specific technical criteria regarding access spacing, widths, turn lanes, alignment, grades and other roadway design criteria, see Section 2, Roadway Design and Technical Criteria.
2. The State Highway Access Code governs access onto State Highways.

3. All access onto State Highways is controlled by the CDOT. The Town of Castle Rock has no jurisdictional authority over access onto a State Highway. The Town reserves the right to deny any proposed access location, including access that may meet CDOT requirements. The Town is not the issuing authority for access permits on State Highways.

3.1.2 Interstate 25

1. CDOT and FHWA rules and regulations shall apply to all Interstate Highways.
2. CDOT and the FHWA control all accesses onto interstates. The Town has no jurisdictional authority over access onto an interstate. The Town reserves the right to deny any proposed access location, including access that may meet CDOT and FHWA requirements

3.1.3 Major Arterials

1. A detailed Traffic Impact Analysis (see Section 7) shall be completed for any proposed access point to a major arterial to ensure adequate levels of service can be maintained if the access is allowed to be constructed. An Access Management Plan may be required.
2. Generally, no private direct access onto major arterials shall be permitted unless a signal progression plan has been approved and it is determined that the proposed access will cause no significant impacts to traffic operations. Private direct access to a major arterial may be permitted only when the property in question has no other reasonable access to the general roadway network, or when denial of a direct access to a major arterial will cause unacceptable traffic conditions and/or safety problems on an alternative lower classified roadway. When direct private access must be provided on a major arterial roadway, the following shall be considered prior to approval of the proposed access location:
 - A. Such access shall continue only until such time that some other reasonable access to a lower classification roadway is available and permitted. The approval documents should specify the future reasonable access location, if known, and under what circumstances the modifications will be triggered and what changes will be required.

- B. No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that: (1) allowing only one access conflicts with safety regulations (i.e. Fire access), or (2) additional access would significantly benefit safety and operation of the major arterial and is necessary to the safe and efficient use of the property.
 - C. An access shall be limited to right-turn only movements, unless (1) it has the potential for future signalization or a roundabout, (2) left turns would not create unreasonable congestion or safety problems and lower the overall intersection level of service, and (3) alternatives to the left turn movements would cause unacceptable traffic conditions and safety problems to the general roadway network.
- 3. Direct public access onto a major arterial roadway, where left turns are permitted, shall meet the signalization spacing criteria in Section 3.1.3.4. Those that do not meet these requirements shall be limited to right turn only movements unless they meet the requirements in Section 3.1.3.4.C. No local streets shall be permitted to intersect with major arterials. However, in some situations, Entry Streets may be used to transition from a local street to a major arterial.
- 4. Spacing and Signalization Criteria:
 - A. Refer to Figure 3.1 for spacing requirements.
 - B. In general terms, full access to major arterials shall be limited to one-half (1/2) mile intervals or more, plus or minus 200-feet, in order to achieve good speed, capacity and optimal signal progression.
 - C. An approved traffic engineering analysis of signal progression shall be completed to properly locate any proposed access that may require signalization. The consultant for the applicant shall contact the Town's Traffic Engineering Division for direction in preparing the signal progression analysis.

3.1.4 Minor Arterials

1. A detailed Traffic Impact Analysis shall be completed for any new proposed access point on a minor arterial to ensure adequate levels of service prior to issuance of an access permit.
2. Generally, no private direct access onto a minor arterial shall be permitted unless a signal progression plan has been approved and it is determined that the proposed access will cause no significant impacts to traffic conditions. Private direct access to a minor arterial may be permitted only when the property in question has no other reasonable access to the general roadway network, or when denial of a direct access to a minor arterial will cause unacceptable traffic operations and/or safety problems on an alternative lower classified roadway. When direct private access must be provided on a minor arterial roadway, the following shall be considered prior to approval of the proposed access location:
 - A. See 3.2.3.2 A, B, & C
 - B. Location has the potential for signalization or roundabout, if it meets spacing requirements for intersecting public roadways stated in 3.1.4.4 and does not interfere with the location, planning and operations of the general roadway network and access to nearby properties.
3. Public direct access onto a minor arterial roadway, where left turns are permitted, shall meet the signalization spacing criteria in Section 3.1.4.4. Those that do not meet these requirements shall be limited to right turn only movements, unless they meet the requirements in Section 3.2.3.2.C No local streets shall be permitted to intersect with minor arterials. However, in some situations, Entry Streets may be used to transition from a local street to a minor arterial.
4. Spacing and Signalization
 - A. Refer to Figure 3.1 for spacing requirements.
 - B. In general terms, full access onto minor arterials shall be limited to one-quarter (1/4) mile intervals, plus or minus approximately 200-feet,

in order to achieve good speed, capacity and optimum signal progression.

- C. However, to provide flexibility for both existing and future conditions, an approved traffic engineering analysis of signal progression shall be completed to properly locate any proposed access that may require signalization. The consultant for the applicant shall contact the Town's Traffic Engineering Division for direction in preparing the signal progression analysis.

3.1.5 Major and Minor Collectors

1. Single-family residential access onto collectors is not permitted within new developments. See Section 3.2 Curb Opening and Driveway Criteria.
2. Public streets shall intersect minor collectors no closer than 330 feet from each other (centerline to centerline), and shall intersect major collectors no closer than 660 feet from each other (centerline-centerline). On minor collectors, the closest local street intersection to an arterial shall be 400 feet (centerline of arterial to centerline of a local street) and on major collectors shall be 660 feet from the arterial (centerline of arterial to centerline of a local street). Further study may be required at the discretion of Town Staff, regarding access location and spacing.

3.1.6 Local Streets

1. Residential driveway locations shall be no closer than 20-feet from the Point of Curb Return (PCR) of a local street intersection.
2. Public streets should not intersect local roadways closer than 150 feet from each other (centerline to centerline). On a local street, the closest intersection to a collector street shall be at least 200 feet (centerline to centerline). The developed portion of a lot should not face directly into the oncoming traffic of an intersecting street of a "T" intersection.

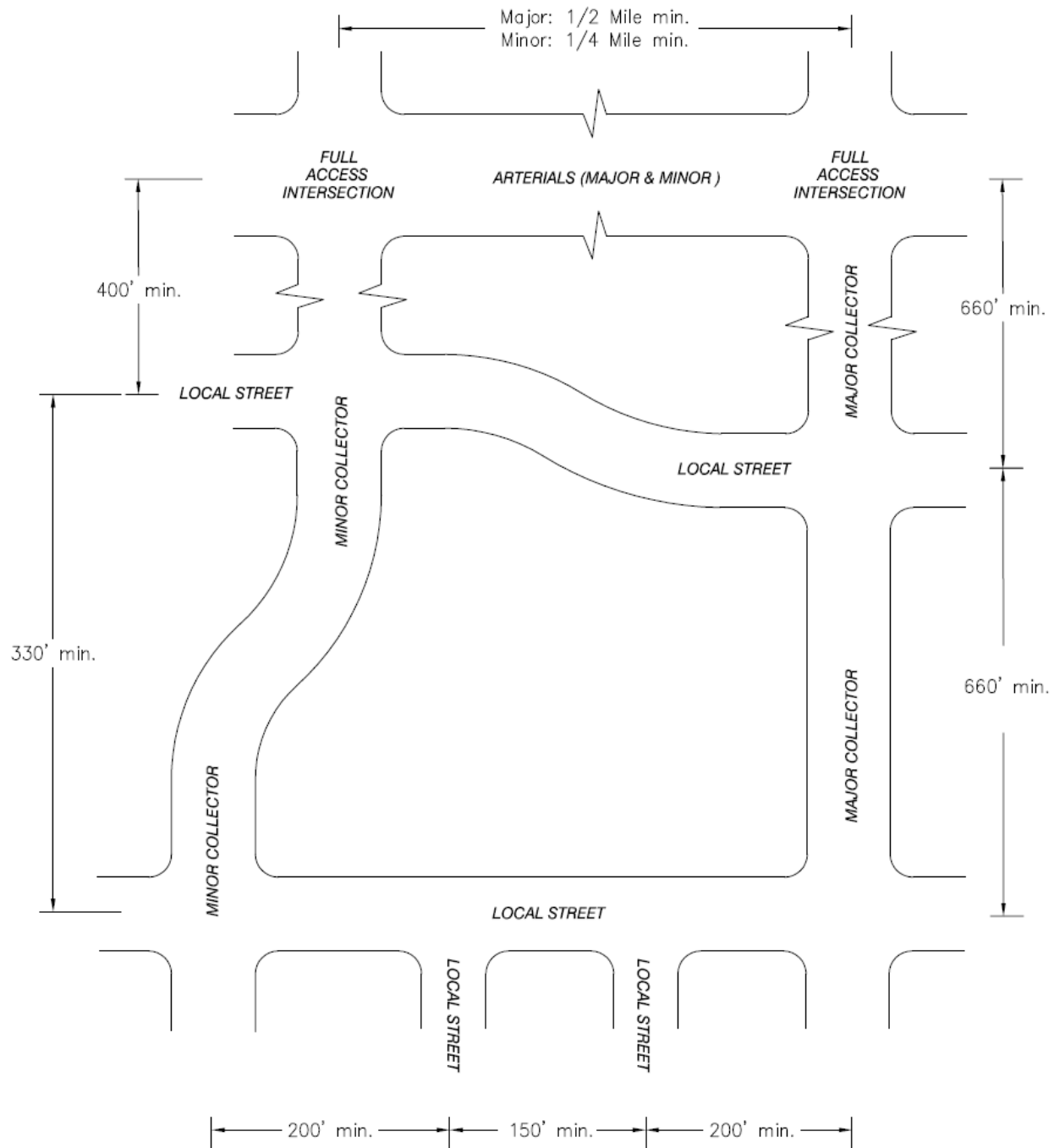


Figure 3.1 – Intersection Spacing

3.2 BASIC PRINCIPLES FOR CURB OPENINGS AND DRIVEWAYS

3.2.1 Curb Openings

1. Certain design criteria for curb openings and driveways require minimum dimensions in some instances and maximum dimensions in others. The design of curb openings and driveways within the range of these dimensions will provide for good service on the part of the motorist using the driveway while at the same time minimizing the interference to the traffic using the street. By controlling the location and width of openings or driveways along the street, it will be possible to avoid or eliminate long open stretches where motorists can indiscriminately access onto the street. The width of opening established in these *Criteria* is based on studies, which indicate that the various width openings will accommodate vehicles of maximum size authorized on our Town Streets. In case of conflict between requirements in the various sections of these Criteria, the more restrictive condition shall normally apply.
2. The curb opening or driveway width should be adequate to properly handle the anticipated traffic volume and traffic characteristics, as well as being within the limits specified for the type of property development.
3. The curb opening or driveway shall be designed to accommodate emergency response vehicles.
4. See Section 2.2.3 Driveways criteria.

3.2.2 Sight Distance

1. All openings for driveways shall be located at the point of optimum sight distance along the street. For openings and driveways to commercial establishments and service stations there shall be sufficient space reasonably cleared of any obstructions such that drivers entering the property will have sufficient sight distance to enable them to make proper and safe movements. The profile of a driveway approach and the grading of the adjacent area shall be such that when a vehicle is located on the driveway outside the traveled portion of the street the driver can see a sufficient distance in both directions so as to enable the driver to enter the

street without creating a hazardous traffic situation. See Section 2.4.2 for maximum driveway grades.

2. Sight distance for curb openings to private property shall meet all sight triangle and sight line requirements detailed in Section 2.3. This does not apply to single-family residential driveways using mountable curb, gutter, and sidewalks.

3.2.3 Utility Conflicts and Abandoned Driveways

Any adjustments which must be made to utility poles, street light standards, fire hydrants, catch basins or inlets, traffic signs and signals, or other public improvements or installations which are necessary as the result of the curb openings or driveways shall be accomplished without any cost to the Town. Driveways shall not interfere with operations or locations of any drainage appurtenances or handicap ramps. Also, any curb opening or driveway, which has been abandoned, shall be restored by the property owner except where such abandonment has been made at the request of, or for the convenience of, the Town.

3.2.4 Entry/Exit Only Access

Driveway approaches, where the driveway is to serve as an entrance only or as an exit only, shall be appropriately signed by the property owner at their sole expense. The property owner will be required to provide some means of ensuring that the motorists will use the driveway as it is shown on the construction plans.

3.2.5 Access to Roadways with No Curb and Gutter

1. Driveways shall extend from the ROW line to edge of existing driving surface and shall be constructed of either:
 - A. A minimum of 3" thick asphalt pavement over 6" thick aggregate base material Class 6 or according to the pavement design report.
 - B. A minimum of 4" thick concrete pavement over 6" aggregate base material Class 6 or according to the pavement design report.

2. The driveway shall be a maximum of 30-feet wide in the Town ROW.
3. A minimum 24" diameter corrugated metal pipe (CMP) culvert shall be installed at the established roadside ditch flowline beneath the private drive access. The applicant is responsible for providing adequate design sizing for the CMP culvert with the Drainage Study or as a separate document. At no time will it be acceptable for asphalt or concrete pavement to be placed directly on the culvert.

3.2.6 Maintenance of Private Access onto Town ROW

Maintenance of private driveway access within the public right-of-way shall be the responsibility of the property owner. Maintenance of drainage improvements described in Section 3.2.5 shall be the responsibility of the property owner.

3.2.7 Definition of Terms

Several terms are used herein, which have a somewhat distinct meaning. For the purpose of clarity, the definition of some of these terms is listed below:

1. **Width of Curb Opening** – The width of curb opening measured along the curb line excluding the curb returns.
2. **Edge Clearance** – the distance measured along the curb line from the nearest edge of the curb opening to a point where the property line extended intersects the curb.
3. **Corner Clearance** – At an intersecting street, the distance measured along the curb line from the projection of the intersection street flowline to the nearest edge of the curb opening.
4. **Setback** – The lateral distance measured perpendicular to the street right-of-way line and extending from the right-of-way line to the closest point on a structure.
5. **Frontage** – The distance along the street right-of-way line of a single property or development within the property lines. Corner property at an intersection would have separate frontage along each street.

6. **Residential** – Property used primarily for residential purposes such a single family, two family and multi-family units.
7. **Single Family (SF) Residential** – Single, detached family dwelling units or double bungalows or duplexes.
8. **Multi Family (MF) Residential** – Three or more attached dwelling units including townhouses, condominiums and apartments.
9. **Commercial** – Establishments where buying and selling of commodities, entertainment or services is carried on, excluding services stations. Included are such uses as office building, restaurants, hotels, motels, banks, grocery stores, theaters, parking lots, trailer courts, public buildings
10. **Industrial** – Establishments that manufacture or store an article or product.
11. **Service Station** – Any property where flammable liquids used as motor vehicle fuel are stored and dispensed from fixed equipment into fuel tanks of motor vehicles.

3.3 GENERAL ACCESS REQUIREMENTS

3.3.1 Number of Openings

1. **SF Residential** – In general, each SF residential property shall be limited to one access point. Additional access points shall be reviewed by the Town on a case by case basis.
2. **MF Residential** – In general, access shall be determined by information provided by owner/developer in the Traffic Impact Analysis and by comments generated during Town’s review and acceptance of the traffic study.
3. **Commercial and Industrial** – In general, commercial and industrial properties having less than 150-feet of frontage and located mid-block shall be limited to one access point to the street. An exception to this rule may be where a building is constructed in the middle of the lot and parking is provided for on each side of the building. A second access point may be allowed for commercial property located on a corner for properties having greater than 150-feet of frontage, if the additional proposed access is

determined by Town Staff to be acceptable and the proposal is justified in the Traffic Impact Analysis.

4. Properties may be required to combine and share access points to Town streets. See Section 3.3.5.

3.3.2 Amount of Curb Opening Permitted

The total length of curb opening on a roadway for access to a commercial property shall not exceed 35 feet. This requirement does not apply to residential type curb openings.

3.3.3 Entrance Angle

In general, the entrance angle for all driveways shall be perpendicular to the centerline of the street being accessed. The entrance angle may vary 10° from perpendicular or 10° from the radial bearing.

3.3.4 Minimum Space between Openings

The minimum spacing between curb openings shall be 35 feet measured at the curb line. This spacing will apply to the distance between drives serving a single property or adjoining properties. This does not apply to residential projects using mountable curb, gutter and sidewalks. 50-foot spacing applies to commercial openings.

3.3.5 Joint Entrances

Whenever possible and feasible, joint entrances shall be provided to serve two adjacent properties. Joint entrances should be centered on the common property line. Joint entrances shall require the execution of a Joint Access Easement Agreement between the adjacent property owners.

3.3.6 Access Approaches for Areas Requiring Backing Maneuvers

Access approaches shall not be permitted for parking or loading that requires backing maneuvers within Town right-of-way. All off-street parking areas must include on-site maneuvering areas and aisles to permit user vehicles to enter and exit the site in forward direction. Alleys within Town right-of-way

shall be reviewed on a case-by-case basis to determine if vehicles backing into the alley right-of-way is acceptable.

3.3.7 Unused Access Points

If a parcel of land with direct access has been in a state of non-use for more than four years, recommencement of access use shall be considered a change in use. If the use of the access exceeds the design limitations of the access point or is non-conforming to present design criteria, a new permit may be required.

3.3.8 Changes in Access Use

If the use of existing access to Town right-of-way changes, or there is a change in the use of the property, the access type will be reviewed for compatibility with the proposed use in the Town's plan review process. Change in access or property use may include, but is not limited to, change in volume or type of traffic, structural modifications to the building, remodeling of the structure, change in type of business, expansion in an existing business, change in zoning or change in property division creating new parcels.

3.3.9 Control Dimensions

To accomplish the objectives of the basic principles stated earlier, certain control dimensions are necessary. There are many variables that affect these control dimensions. Some of the variables are as follows: type of roadway classification, type of property development, volume of traffic and width of right-of-way.

3.3.10 Width of Curb Opening

The total width of curb opening for properties on various roadway classifications shall be in conformance with Table 3.1

**TABLE 3.1
WIDTH OF CURB OPENING - MAXIMUMS**

	RESIDENTIAL				
	SF	MF	COMMERCIAL /INDUSTRIAL	SERVICE STATION	
MAJOR ARTERIAL	N/A				
MINOR ARTERIAL	N/A				
MAJOR COLLECTOR	N/A	30'	35'	40'	
MINOR COLLECTOR	N/A	30'	35'	35'	
LOCAL	30'	30'	35'	35'	

Notes: Curb openings of 30-feet or more must be constructed with radius curb returns. For curb return driveways, the measured width of the driveway does not include the curb returns.

3.3.11 Corner Clearance

It is important to locate driveways away from major intersections. This constraint is as much for the ability to enter and exit the property as for the benefit of intersection safety and operations. Exiting a driveway during peak hour conditions at a signalized intersection is difficult because the queue of standing or slow-moving vehicles may not allow a sufficient gap for entry from the driveway. See Figure 3.2 for acceptable corner clearance distances.

MINIMUM CORNER CLEARANCE			
	CLASS OF MAJOR ROADWAY		
ITEM	ARTERIAL	COLLECTOR	LOCAL
A	115	75	50
B	85	85	50
C	115	75	50
D	115	75	50
E	210	115	50
F	210	115	50
G	50	50	50
H	210	115	50

NOTE:

This table does not apply to single family residential driveways. Single family residential driveways must access on the street of the lowest classification and at the side of the lot furthest away from the intersection.

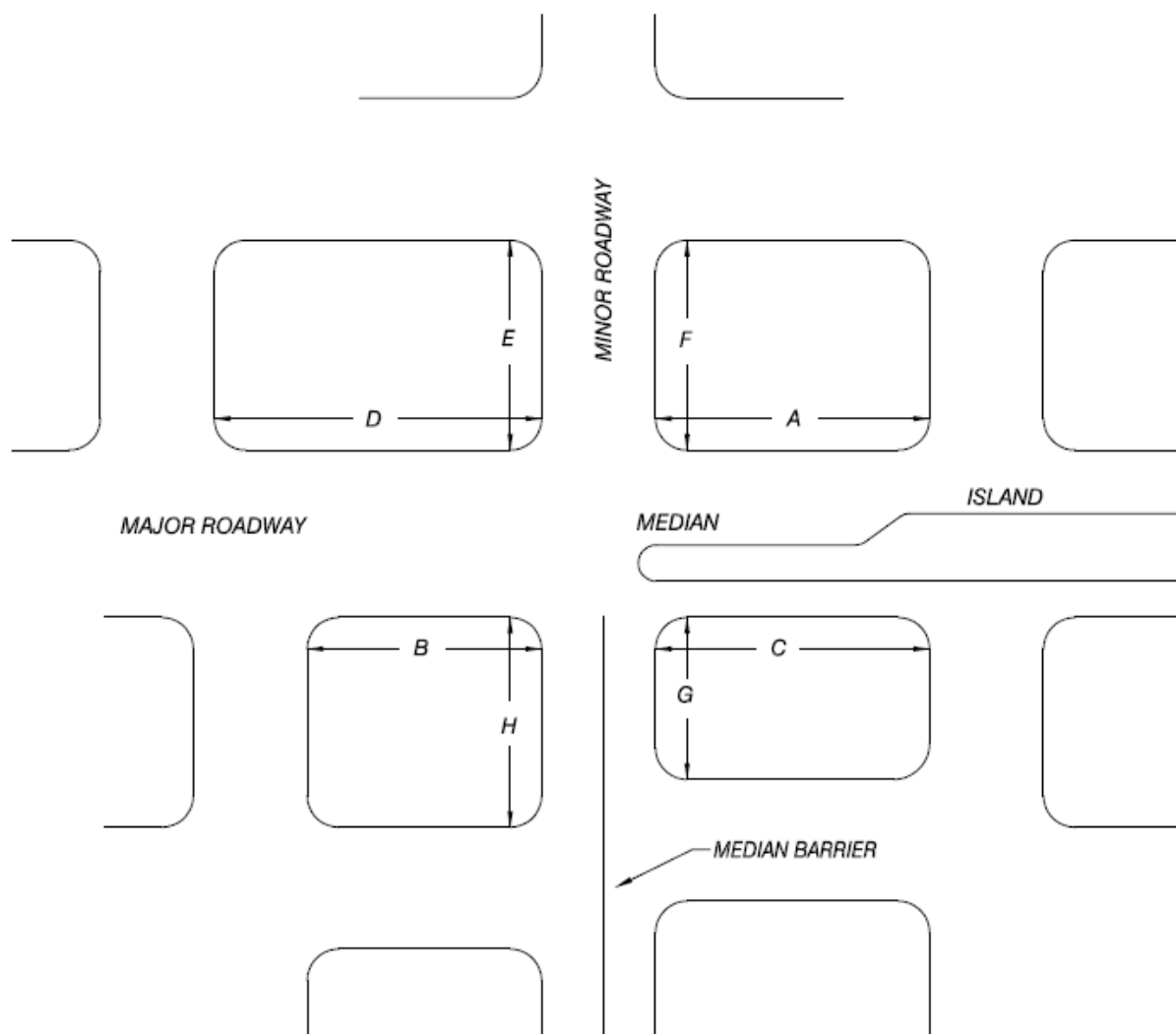


Figure 3.2 – Driveway Corner Clearances

3.3.12 Large Parking Areas

Large parking areas (250 parking spaces or greater) must provide a minimum throat length of two hundred (200) feet from the edge of the right-of-way to the nearest parking aisle, driving aisle, or parking space. The minimum throat length may be adjusted if justified by a traffic impact analysis.

3.4 UNPERMITTED ACCESS

Any access, driveway, or curb cut that is constructed within public ROW without the approval of the Town shall be subject to a “Stop Work Order” and shall be removed immediately. Failure to remove the unpermitted access may result in removal of said access by the Town (at the property owner’s expense). Failure to comply with the “Stop Work Order” may result in Town legal action and prosecution of the violators.

Section 4

TRAFFIC SIGNAL DESIGN

4.0 GENERAL INFORMATION

4.0.0 Scope

This section describes general signal design requirements for use in the Town of Castle Rock. It is the intent of the Town to first consider methods of traffic control other than traffic signals to control traffic at intersections. Other desirable methods include the use of roundabouts and innovative intersection designs.

4.0.1 Pre-Design Meeting with Traffic Engineering and Operations Division

Prior to beginning traffic signal design, a pre-design meeting may be requested by either the Town or the design consultant. A pre-design meeting is recommended.

4.1 TRAFFIC SIGNAL DESIGN CRITERIA

4.1.1 General Signal Design Requirements

- 1.** All design elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.
- 2.** All traffic signal equipment, structures and foundations shall be designed in accordance with CDOT's Traffic Signals and Lighting, Town of Castle Rock Detail Plans and Signal Construction Specifications, and CDOT Standard Specifications for Road and Bridge Construction.
- 3.** All equipment and materials specified must conform to current CDOT specifications and be submitted for approval to the Traffic Engineering and Operations Division, prior to signal construction.
- 4.** A sufficient pedestrian landing area that meets the Americans with Disabilities Act (ADA) requirements must be provided. Public Right-of-Way Accessibility Guidelines (PROWAG) are recommended best practices and are considered the state of the practice for areas not fully addressed by the present ADA standards.

5. All traffic signals for permanent installations shall use mast arm poles (RAL 6012 black green in color). Span wire applications may only be used for temporary signal installations.
6. All traffic signal poles, conduit and equipment must be located within public rights-of-way or easement.

4.1.2 Signal Head Placement and Sizes

1. All signal head placement and sizes shall comply with the latest MUTCD standards.
2. Far left and far right traffic signals should be provided. It is desirable to have a single head for each exclusive left turn lane and through lane. The need for one signal head per right turn lane should be determined on a site-specific basis.
3. Pedestrian signal heads should be provided for all marked crosswalks. Where pedestrian signal heads are provided, corresponding pedestrian push buttons shall be provided. All pedestrian signals shall be “countdown” type and shall meet ADA requirements. Pedestrian signals must be 16-inch LED “Man/Hand” indication. Audible Separate bicycle signals shall be provided on a case-by-case basis as determined by Traffic Engineering and Operations Division, prior to signal construction.
4. Where left turn arrows are included, at least two signal heads with left arrow sections shall be provided, with one of these located on the far left pole. 4-section flashing yellow arrow signal heads will be required for permissive left turn operation. If no protected left turn is necessary, 3-section flashing yellow arrow signal heads shall be used.
5. All mast arm and span wire mounted signal heads shall have aluminum louvered back plates either retroreflective yellow in color, or black in color with yellow retroreflective tape along the edges.
6. All signal heads shall have 12-inch lenses and shall be LED with tunnel visors. All indications shall be wide-angle, LED type lamps and meet ITE specifications for LED traffic signal indications. All pedestrian indications shall also be LED type lamps. Tunnel visors shall be installed on all signal

faces and shall be black or green in color. The same color shall be used for all vehicular and pedestrian signals at an intersection.

7. Where mast arms extend over the left turn lane(s), “left turn only” sign(s) should be provided. Double lefts may be covered with one “left turn only” sign (R3-5) per lane, or one “double left turn only” sign located over the lane line between left turn lanes.
8. “Yield to pedestrian” sign(s), “right turn only” sign(s), and “combined through/right turn” lane use sign(s) shall be used if applicable.

4.1.3 Pole and Cabinet Placement

1. All signal poles, pedestals and cabinets shall be located so that there will be a minimum of 3 feet between the face of traffic signal equipment and the face of curb when curbing is present. The desirable separation is 5 feet.
2. The same separations noted above shall apply from face of traffic signal equipment to outside edge of shoulder when there is no curbing present. In this situation there should be a minimum of 5 feet between the face of traffic signal equipment and the edge of pavement. The desirable separation is 7 feet.
3. All pedestrian pushbuttons shall adhere to most current ADA and PROWAG standards including, but not limited to, location, spacing, height, and horizontal distance from walkway. Pedestrians will have unobstructed access to pedestrian signal pushbuttons. If a pole cannot be located within 5 feet, a separate pedestrian push-button post shall be installed.
4. The traffic control cabinet shall be placed in a location such that placement allows a technician working within the cabinet clear visibility of the intersection and approaching traffic from all directions. The cabinet should be located on the corner that does not block the view of side street traffic for ‘right turn on red’ vehicles.

4.1.4 Materials

1. The Controller shall be an Econolite Cobalt ATC traffic controller with ASC/3-LX software, or as specified at the time of design by the Town's Traffic Engineer.
2. The minimum cabinet size is to be 332, with "I", "J", and "K" files, with a single door on each side. Medeco electronic locks shall be provided for both doors in place of standard #2 key locks.
3. A Tesco uninterrupted power supply (22-000 BBS or newest model) with a minimum of six gel batteries for auxiliary power shall be piggyback mounted to the cabinet.
4. Vehicle detection is to be provided by a nonintrusive device (video, radar, or infrared), with advanced detection on the main street, as directed by the Town's Traffic Engineer. Inductive loops shall not be utilized unless requested by the Traffic Engineering and Operations Division.
5. All new signalized intersections shall include a fiber optic connection to the existing fiber optic network and be integrated into the Town's traffic communication system.
6. Adaptive traffic control may be in operation on Town corridors and may be required for new traffic signals depending on the location. This shall be confirmed by the Town's Traffic Engineer at the time of design.
7. All materials must be approved by the Town prior to installation.

4.1.5 Pull Boxes and Signal Conduit

1. All pull boxes shall be fiber composite type, and marked "Traffic Signal" or "Traffic" on the lid.
2. Pull boxes shall not be placed in roadways or sidewalks. Conduit must be extended where necessary to relocate pull boxes to a non-traveled area.
3. A minimum of two (2), 2-inch conduits and one (1), 3-inch conduit shall be placed across each intersection approach. All conduits shall be Schedule 80 PVC. Any unused conduits must be sealed within the pull boxes.

4. All electrical service conductors shall be placed in a separate conduit from the traffic signal wiring.
5. Along all arterial roadways, one (1), 2-inch conduit must be placed within and parallel to the right-of-way to the nearest adjacent, existing traffic signal to allow for future signal coordination. Pull boxes must be placed a minimum of every 300' along a conduit run, with conduit ends terminating within each box. The conduit ends shall be sealed to prevent debris build up.

4.1.6 Lighting

1. Luminaires shall be provided on all signal poles unless there is a utility conflict or unless directed otherwise by the Traffic Engineering and Operations Division.
2. Luminaire should be full cutoff LED with lumen output equivalent to a 250 Watt metal halide bulb.
3. Luminaire wire connections will only be made in pull boxes and not brought into the signal controller cabinet.

4.1.7 Illuminated Street Name Signs

1. Illuminated street name signs (ISNS) shall be provided for all approaches, unless directed otherwise by the Traffic Engineering and Operations Division.
2. ISNS wire connections preferred to be powered by luminaire photocell, or alternate method approved by the Town.
3. Sign features to conform with MUTCD letter size and spacing, and Town Sign standards in 4.2.10 below, including Town logo and blue background color as necessary.
4. All artwork and materials must be approved by the Town prior to installation.

4.1.8 Electrical Power

1. The signal designer shall contact the applicable power provider to determine the source for traffic signal power and to coordinate applicable requirements. At the time of construction, the location of the power connection may be revised if power has become available in closer or improved proximity to the proposed signal.
2. The electrical service shall have a separate meter and be addressed.
3. Circuit breakers and power disconnects should be located internal to service meter assemblies and signal controller cabinets, and should not be readily accessible to the public.

4.1.9 Emergency Vehicle Pre-emption

1. Emergency vehicle pre-emption shall be used for all directions and at all locations or as directed by the Town's traffic engineer. Additional sensors may be necessary if approaches are offset or vision is obstructed. Preemption must be compatible with the existing preemption system used in the Town.
2. Two (2) channel controls shall be provided at all intersections. The system shall be capable of controlling direction of travel, including arrow direction.
3. Two (2) emitters – one to the Fire and Rescue Department and one to the Police Department – shall be provided for each new signal.
4. Any upgrade or directional addition to an existing traffic signal shall include the installation of a traffic pre-emption system.

4.1.10 Signing and Striping

1. All regulatory, warning and route marker signs shall be provided with the traffic signal installation and shall be in accordance with the MUTCD.
2. Street name signs shall be installed for each approach, see Illuminated Street Name sign section above. The lettering on the signs must conform to MUTCD standards. Sign colors and design shall also conform to Town specifications.

3. All necessary striping shall be provided with the traffic signal installation and shall be in accordance with the MUTCD.

4.2 CONSTRUCTION PLANS AND SPECIFICATIONS/ PROVISIONS

4.2.1 Traffic Signal Plan Content

1. The designer shall prepare separate drawings of all traffic signal installation and incorporate it as an integral part of the construction plans.
2. Traffic signal plans shall be developed in accordance with Town construction specifications and CDOT's Traffic Signals and Lighting— Standard Drawings and CDOT Standard Specifications for Road and Bridge Construction. All elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.
3. As a general guide, the traffic signal plans shall be drawn at a 1 inch = 20 feet scale, and shall include the following items:
 - A. Locate and identify all existing and/or proposed improvements, above and below ground, within 200 feet of the intersection including all utilities, traffic control boxes, pull boxes, signal poles and loops/vehicle detectors.
 - B. Locate and identify all existing and/or proposed pavement marking and signing.
 - C. Locate existing vegetation which could be in conflict with any proposed equipment locations or impact required signal visibility distances.
 - D. Provide a profile layout when vertical roadway alignment may impact traffic signal visibility requirements. Provide roadway curve data if applicable.
 - E. Locate all traffic signal equipment (poles, controller cabinet, electric service cabinet, etc.).
 - F. Develop a phasing diagram for initial signal operation.

- G. Provide Town record drawings, sealed by a professional engineer, upon completion.

4.3 SPECIFICATIONS

Traffic signal specifications shall be developed in accordance with Town and CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 5

ROUNDABOUTS

5.0 GENERAL INFORMATION

5.0.0 Scope

Roundabouts can reduce accidents and improve traffic flow at intersections. The Town will consider the use of roundabouts on a case by case basis. Roundabouts are typically used as an alternative to traffic signals or to 4-way stop control. Roundabouts shall be constructed at all new collector/collector intersections or at intersections of roadways of a higher classification unless it can be demonstrated that a specific location is not a good candidate. This chapter provides the procedures and criteria for the design of roundabouts.

5.0.1 Use of National Standards

All roundabout designs will follow the most current guidelines for roundabouts, including proper treatment of pedestrian crossings, bicycle lanes and signage. See the Federal Highway Administration's Roundabouts: An Informational Guide (Latest Publication) and the Manual on Uniform Traffic Control Devices (MUTCD) for further information.

5.1 SITE DETERMINATION

The Town of Castle Rock considers the use of roundabouts as an essential element of traffic control, and shall consider each proposed roundabout on a case-by-case basis.

5.2 ROUNDABOUT DESIGN CRITERIA

5.2.1 General Design Criteria

1. The inscribed circle diameter shall be a minimum of 105 feet for single lane roundabouts and 150 feet for a two-lane roundabout. The inscribed circle diameter must be adequate to accommodate the anticipated vehicle types.
2. Design all legs to yield to traffic in center.
3. Provide channelized approaches/splitter islands for all legs. Vehicle deflection must be provided on all approaches at the splitter islands such

that vehicles cannot errantly continue straight into the interior circle roadway without hitting the splitter curb.

4. Intersection circle and splitter islands should follow the roadway design principles as described in the AASHTO Roadside Design Guide and should avoid structural elements that could likely be in the path of an errant driver.
5. Provide design geometry to slow speeds to less than 30 mph. The maximum speed difference between entering and circulating traffic should be 12 mph.
6. Discourage pedestrians from crossing to the center island. Provide pedestrian refuge in splitter islands. Pull the sidewalk away from curb near circle to encourage crossing at a splitter crossing. ADA requirements must be met. Multi-lane approaches must give careful consideration to treatments that can assist the visually impaired pedestrians.
7. Allow bikes to merge with vehicular traffic or exit to sidewalk/path or trail as available. Provide a directional curb ramp for bikes where the splitter island starts so that they have the option of using the sidewalk or mixing with the vehicles.
8. Accompanying design data must be provided that includes:
 - A. Existing weekday AM and PM peak hour
 - B. Peak hour of the generator turning volumes
 - C. Design year peak hour turning volumes (AM & PM weekday peak hours and peak hour of the generator)
 - D. Capacity calculations for existing 20 year projections

5.2.2 Design Vehicle Criteria

1. All intersections shall be designed to accommodate a WB-50 vehicle for all turning movements (which will accommodate fire trucks, sanitation trucks and most trailers). Larger vehicle types may be required to be accommodated on higher classification roadways. No entry or exit path overlap is permitted on any multi-lane approaches and exits.

2. Geometric layout should be checked with AutoTurn software or by a similar method.

5.2.3 Typical Signs and Markings

1. The following are the minimum number and type of signs/markings that may be required at an installation:
 - Yield sign for each leg
 - Offset regulator “One Way” signs in center island to line up with driver
 - Pedestrian crossing signs in splitter/median
 - Pedestrian activated warning signs are required for multi-lane pedestrian crossings.
 - Object marker and keep right sign at beginning of splitter/median
 - Advance roundabout warning sign with advisory speed plaque
 - Advance street name signs
 - Lane use markings (“fish hook” style)
2. The requirements may vary due to the location of the roundabouts, the amount of traffic that is expected to be present and the presence of pedestrians.

5.2.4 Lighting

1. Lighting layouts at roundabouts must adhere to the latest FHWA design guide for roundabouts and/or publications of the Illuminating Engineering Society (IES) concerning roundabout lighting.

5.3 CONSTRUCTION PLANS AND SPECIFICATIONS/ PROVISIONS

5.3.1 Roundabout Plan Content

1. The designer shall prepare separate drawings of all roundabout designs and installation and incorporate them as an integral part of the construction plans.
2. Roundabout plans shall be developed in accordance with Town specifications and CDOT's Standard Drawings and CDOT Standard Specifications for Road and Bridge Construction. All signage elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.

5.3.2 Specifications

Specifications shall be developed in accordance with Town specifications and CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 6

TRAFFIC SIGNING AND PAVEMENT MARKINGS

6.1 GENERAL INFORMATION

6.1.1 Scope

This chapter provides the procedures and criteria for the design and installation of street signage, striping and pavement markings.

6.1.2 Use of National Standards

The following current publications are to be used in conjunction with the design criteria in this manual for the design of traffic signs, striping and markings.

1. Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)-USDOT/FHWA, current version
2. Colorado Model Traffic Code

6.2 SIGNAGE DESIGN CRITERIA

6.2.1 Signage - Regulatory, Warning and Advisory

1. Design is to be in accordance with the MUTCD. The requirements of the MUTCD shall be applied to privately owned facilities where the public is able to travel.
2. All sign posts shall be telespar, pre-punched square steel tubing, (3/8" diameter holes on 1-inch centers, galvanized). Posts must be of appropriate length to meet the MUTCD requirements for the location. They also must conform to CDOT Specifications and must meet the Federal breakaway standards. Installation boots are to be driven to within 4" of ground level. The boots shall not be driven below ground level.
3. The height to the bottom of the sign assembly shall be at least seven feet above the top of the sign boot.
4. ASTM Type IV Sheeting (minimum) shall be used for all sign types.

5. School warning signs and accompanying placards must be ASTM Type DG-3 high intensity prismatic fluorescent yellow green sheeting.
6. Where the approach has multiple lanes and/or the posted speed limit is 40 mph or faster, stop signs (R1-1) shall have minimum dimensions of 36-inch by 36-inch. At other locations, stop signs shall have minimum dimensions of 30-inch x 30 inch or meet the minimum requirements in the MUTCD, whichever is greater.
7. Streetlight poles should be used for sign mounting when the light pole is within approximately 50 feet of the proposed sign location. This may not be possible for intersection control signs. Placement of signs shall be in accordance with the requirements of the MUTCD.
8. When No Parking signs are necessary, signs shall be installed in the direction of travel approximately every 250 feet unless specified closer by the MUTCD. Where possible, the sign face shall be oriented at an angle of 45 degrees to the direction of travel.
9. Speed limit signs (R2-1) are to be installed at 4 per side per mile or approximately every 900 feet in residential areas. Speed limit signs must also be placed where speed limit changes occur.
10. Backing plates shall be aluminum .080 gauge except for signs larger than 36" x 36", which shall be .100 or .125-gauge aluminum.
11. All proposed signage shall be located within the public right-of-way. If signage cannot be accommodated within public right-of-way, the signage will be located within an appropriate easement dedicated to the Town.
12. Each cul-de-sac shall include NO OUTLET signs. Cul-de-sacs, at 4-way intersections, longer than 300LF (from nearest cross street flowline to furthest cul-de-sac flowline) shall feature 30-inch by 30-inch (W14-2) signs installed at the second property line entering the cul-de-sac. Shorter cul-de-sacs shall feature 36-inch by 8-inch (W14-2AR/W14-2AL) signs installed above the street name sign.

6.2.2 Signage - Street Name

1. Street names and 100-block designations (where applicable) shall be obtained from Douglas County through the Town's Geographic Information Systems (GIS) Division. The County prescribes addressing in accordance with their existing policies.
2. Street name signs for all public streets shall be white lettering on a blue background. For all collector and arterial streets, the Town's logo shall be added to the street name signs. Additional criteria for street name signs are presented in Town standard detail ST-2. The Town logo may be obtained electronically by contacting the Town's Traffic Engineering and Operations Division.
3. For private streets, all street name signs shall be white lettering on a brown background. The Town logo is not allowed on private street name signs.
4. Lettering shall be a combination of upper case and lower-case letters and shall conform to the MUTCD.

6.2.3 Signage - Street Name Assemblies

1. Street name assemblies should be located at the point of curvature of the corner radius and should be placed according to the following, as measured from the edge of the sign. When the street name assembly is combined with regulatory signs, sign placement for the regulatory sign shall govern.
2. If street name signs are the only sign on the post, the height to the bottom of the assembly shall be at least eight feet above the sign boot.

6.3 STRIPING DESIGN CRITERIA

6.3.1 Striping

1. All permanent longitudinal pavement striping on asphalt surfaces (centerlines, lane lines, bay lines, etc.) shall be installed using an approved reflective traffic paint or thermoplastic material. Reflective beads shall be applied in accordance with CDOT's Standard Specifications for Road and Bridge Construction and the manufacturer's requirements. On concrete

surfaces, a contrasting black edge to white lines and grooved into the pavement shall be utilized.

2. All centerline striping shall be double yellow with each line being a minimum of 4 inches wide with 3-inches of separation. All solid lines are 6 inches, while skips are 4 inches. Transitional skips or intersection skips are 6" by 3' with 5' spacing. Other line widths shall be as specified by the Town.
3. Paint material may be used upon approval by the Traffic Engineering and Operations Division if roadway geometry is not at full build out.
4. The type of material and the application process to be used must be approved by the Town's Traffic Engineering Division.

6.4 PAVEMENT MARKINGS DESIGN CRITERIA

6.4.1 Pavement Markings

1. Unless otherwise required by Town Public Works Department, all non-signalized or non-roundabout permanent lateral pavement striping (stop bars, crosswalk lines, etc.) shall be the paint type specified by the current CDOT standard. Reflective beads shall be applied in accordance with CDOT's Standard Specifications for Road and Bridge Construction and the manufacturer's requirements. Durable, thermoplastic type marking material shall be used at roundabouts and signalized intersections. On arterial and collector class roadways stop bars, symbols, and crosswalk lines need to be durable, thermoplastic type marking material.
2. All stop bars shall be white and a minimum of 24 inches wide.
3. All pavement markings on concrete must be recessed with contrasting black edging.
4. All thermoplastic pavement markings shall be recessed and installed per manufacturer's specifications.
5. Crosswalk bars shall be white. At signalized intersections, minimum crosswalk bar dimensions shall be 2 feet by 10 feet. At other locations, crosswalk bar dimensions shall be 2 feet by 6 feet.

6.5 TEMPORARY MARKINGS DESIGN CRITERIA

6.5.1 Temporary Pavement Markings & Striping

1. All temporary striping shall conform to the current edition of the Colorado Department of Transportation Standard Specifications for Road and Bridge Construction.
2. All temporary pavement markings, including striping, shall be installed using reflective traffic paint.
3. All temporary markings shall be completely removed prior to the installation of the permanent markings. Blacking out of pavement markings is not acceptable, markings need to be ground off or water blasted.
4. Re-establish temporary striping periodically as required by Town Public Works Department.

6.6 CONSTRUCTION PLANS AND SPECIFICATIONS/ PROVISIONS

6.6.1 Signs and Markings Plan Content

1. The designer shall prepare separate drawings of all striping and signing and incorporate it as an integral part of the construction plans. Signing and pavement marking design should be shown in the same plan view on the same plan sheet if practical.
2. Plans shall be developed in accordance with Town specifications and CDOT's Standard Drawings and CDOT Standard Specifications for Road and Bridge

Construction. All elements must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards.

3. Plan sheets are to be complete and to scale, no smaller than 1 inch = 40 feet.
4. The entire length of project is to be shown in plan view. Typical Sections representative of striping and/or signing will not be accepted.
5. Signing and pavement marking plans need to include all existing signing and pavement markings for a minimum of 300 feet past the limits of construction and include adequate transitions and tapers to existing pavement markings to maintain traffic at the design speed.
6. Rights-of-way lines are to be clearly identified.

6.6.2 Signing

1. All signs should be graphically depicted in the direction of travel. Signs shall be located within the right-of-way and at property lines where possible.
2. All signs shall be stationed and referenced to the appropriate MUTCD sign designation with size noted.
3. Speed limit signs should be posted in locations having adequate visibility to approaching traffic.
4. Existing or proposed roadway improvements, vegetation or structures shall not block traffic sign visibility.
5. Existing signs that are to remain, be removed, or be relocated and shall be identified by station and referenced by the appropriate MUTCD sign designation.
6. All existing signing applicable to the project shall be field verified and referenced as signs on the plan sheets, including location and/or station and proposed status of sign.
7. Where traffic calming devices are planned within the right-of-way, include warning signage along the approaches per MUTCD standards.

6.6.3 Striping

1. All existing striping that is to remain shall be fully shown (as screened lines or lightly inked pen lines), identified by type and width, and completely dimensioned across roadway.
2. Raised pavement markers shall be graphically shown in plan view and referenced by construction notation.
3. All new striping shall be clearly identified by color and line width. Beginning stations, ending stations and intermediate stations at all directional changes shall be noted.
4. Striping that is to be removed shall be identified as such on the plans.
5. All striping shall be fully dimensioned across roadway and tied to a construction centerline or monument line at each side of an intersection.
6. All pavement arrows, legends and crosswalks, etc., shall be located by station or dimension lines.

6.6.4 Specifications

Signs and markings specifications shall be developed in accordance with CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 7

TRANSPORTATION IMPACT ANALYSIS

7.1 INTRODUCTION

The importance of comprehensive and coordinated transportation planning is critical to the Town in order to provide a balanced transportation system. The application of sound design principles for new streets, preserving street capacities in existing areas, ensuring smooth traffic flow, accommodating all transportation modes, and increased safety are goals the Town must attain. In order for the Town to evaluate the impacts of Development proposals on the Town's transportation system, a Transportation Impact Analysis (TIA) prepared by a Colorado licensed engineer may be required for all Development proposals. This chapter provides guidelines for the preparation of a Transportation Impact Analysis. In addition, the Town's Transportation Master Plan or other transportation documents should be referenced for more detailed information.

7.2 PROCEDURE

The following steps outline the procedure the Town requires for the preparation and submittal of a TIA:

- Pre-Design Meeting
- Determination of Base Assumptions
- Submittal
- Town Comments and Recommendations

7.2.1 Scoping

At the Pre-Design Meeting, the Developer and the Town shall determine if a TIA will be required and to initiate the determination of the base assumptions to be utilized in the analysis.

A TIA requirement may be waived if the average daily trip generation of the proposed project is less than 200 vehicles per day of the generator or by special variance approved by the Town. If this condition is satisfied and Town does not have other concerns with the Transportation aspects of the proposed project, a memo shall be prepared by the Traffic Consultant Engineer showing the trip generation of the project and concluding that no transportation impacts are anticipated as a result of the proposed project.

At the Pre-Design Meeting, the Developer will provide information regarding:

1. Project description including type of land use (single family, fast food etc.) and size (number of dwelling units, square footage, etc.).
2. Preliminary project site plan showing all proposed access locations and proposed land uses.
3. Anticipated project completion date and project phasing.

The Town will review the applicant's project information and provide feedback as to any anticipated concerns regarding transportation issues, including but not limited to, access locations, types, potential impacts on adjacent neighborhoods, and initial identification of Study area. This initial scoping meeting will assist the Town and the Developer in determining the base assumptions and pedestrian analysis to be utilized in the TIA.

7.3 TRANSPORTATION IMPACT ANALYSIS

The intent of this TIA is to determine the potential impacts of the proposed Development upon the transportation system. Each TIA should address the following areas:

- Project Description
- Existing Conditions
- Future Background Traffic Projections
- Project Traffic
- Total Traffic Projections
- Site Circulation and Design Evaluation
- Transportation Impact Considerations
- Mitigation Measures to control speeding and cut-through traffic, and to improve pedestrian safety
- Neighborhood Transportation Impact Considerations
- Conclusions

7.3.1 Project Description

A description of the proposed project will be prepared and include the type of land use and size of the proposed project (number of dwelling units or building square footage). Any proposed phasing will be discussed and the anticipated completion date established. A figure depicting the proposed site plan will also be included and the proposed vehicular access locations will be described. This section will also include a description of how pedestrian and bicycle travel will be accommodated within the proposed site plan. This will include a discussion of types of sidewalks (attached/detached), pathways, and connections to location and perimeter destinations. Additionally, this will include a discussion of traffic calming methodologies included within the design of the project.

7.3.2 Existing Conditions

The TIA will establish the existing transportation system conditions. The assessment of existing conditions will include: a description of the surrounding roadway network, bicycle facilities, pedestrian facilities, and transit service; an evaluation of the AM/PM weekday peak hours, and peak hour of the generator, which may include a Saturday peak hour analysis.

1. Description of Existing Transportation System

A. The description of the roadway network will include:

- Number of travel lanes
- Street classifications per Town Transportation Master Plan
- Presence or not of pedestrian and bicycle facilities
- Posted speed limits
- Adjacent land use

B. Traffic data at the roadway network and Study intersections should be obtained through traffic counts and if possible from the Town's Traffic Engineering and Operations Division. Any recent (within the last one year) average daily traffic data that is available for the roadway network should be shown. Weekday AM & PM peak hour and peak

hour of the generator traffic data at the study intersections should be no older than six months one year. Any additional traffic counts that may be necessary are the responsibility of the Developer. All traffic count data shall be included in an Appendix to the TIA. Forty-eight (48) hour traffic counts should be performed within Tuesday through Thursday and used to determine the “average daily traffic”. Traffic counts shall not be done during a week containing a holiday, or school break.

- C. The existing transit facilities within one-quarter mile of the project should be described, if necessary.
- D. The description of the existing bicycle and pedestrian facilities shall include any facilities directly adjacent to the project site and within one-quarter mile. Analysis of pedestrian destinations, which are farther than one-quarter mile, may be necessary given particular site circumstances or the proposed project and land use (for example, the schools that will serve a residential development)
- E. If there are bicycle facilities, the type of facility (e.g. bike route, bike lane, sidepath, trail) shall be described. If the facility does not meet accepted standards or the Town’s criteria, the TIA needs to note this information.
- F. Special attention shall be given to the bicycle and pedestrian connections to specific uses such as schools, parks, transit stops, employment centers, commercial areas, shopping, and adjacent land uses.

2. Existing Levels of Service

- A. The existing levels of service (LOS) of the transportation system adjacent to the project site shall be determined. This includes the LOS for the adjacent roadways and for intersections within the study area. The study area shall be approved by the Town’s Traffic Engineer or Planner and may include streets and intersections not immediately adjacent to the project. All LOS calculations shall be determined based

upon procedures set forth in the latest edition of the HIGHWAY CAPACITY MANUAL.

- B. All level of service worksheets shall be included in the Appendices to the TIA report.

7.3.3 Future Background Traffic Projections

Background traffic projections shall be determined for each of the study years that are to be included in the TIA. These “future background” projections shall account for the following:

- Transportation System Improvements
- Cumulative Projects
- Overall Traffic Growth

A description of any planned transportation system improvements should be provided. This should include such improvements as: signalization, intersection improvements, roadway widening, bicycle/pedestrian projects, and transit capital and operating/service improvements.

The future background traffic projections shall include any individual development projects, that are within the Study area and that could impact the intersections being studied. Any major projects outside the Study area, that could impact the Study intersections, shall also be included in the background traffic calculations. All of the projects that have been included in the background traffic estimates shall be listed in the TIA by location, size, and proposed land use.

The overall growth in traffic within the Study area shall also be included in the future background traffic projections. Growth factors that should be applied to existing traffic within the study area will be provided by the Town or by DRCOG. Any projections should also reference any information taken from CDOT and Douglas County traffic models.

The resulting future peak hour traffic projections at the Study intersections shall be depicted on a figure.

7.3.4 Project Traffic

The potential transportation impacts of the proposed Development project will be determined based upon the following process:

- Determination of Trip Generation
- Determination of Trip Distribution
- Assignment of Project Traffic

1. Trip Generation:

The trip generation of the proposed project will be determined and provided in tabular form. The trip generation needs to be determined for total build-out conditions and for any Development phases. The trip generation table shall indicate the average daily trips and trips in the peak three hours (weekday AM, PM and peak hours of generator). This section of the TIA shall also include a description of the mode split data, which was assumed for the trip generation estimates.

The development of trip generation estimates for the project should be based upon data from the latest edition of the Institute of Transportation Engineers' (ITE) Trip Generation Handbook. However, other data sources or trip generation rate studies may be utilized if the manual does not contain data for the proposed project or additional data is available which better reflects the trip generation characteristics of the project. The use of other trip generation rate sources must be discussed with the Town in the Pre-Design Scoping Meeting.

Adjustments to the standard trip generation of the proposed project may be made to account for internal site trips, pass-by trips, or other unique characteristics of the proposed project. The allowance for these reductions will be discussed with the Town and, in most cases, should follow guidelines set forth in documents such as the ITE Trip Generation Handbook referenced above or local data. The adjusted trip generation for the proposed project shall be provided in tabular form.

2. Trip Distribution:

The trip distribution for the proposed project will be identified in the TIA. The distribution pattern will be based upon:

- The project's location within the Town
- Standard gravity model
- Existing traffic volume data
- Project marketing data
- Engineering judgment

3. Trip Assignment:

The project traffic will be assigned to the roadway system according to the trip distribution established above. The resulting project site-generated traffic will be depicted on figures for build-out conditions and any project phases. These figures will include daily and peak hour traffic volume information.

7.3.5 Total Traffic Projections

The total traffic projections will be determined for existing conditions and for each of the Study years identified earlier in the base assumptions. For existing conditions, the project-related traffic will be added to the existing three peak hours of traffic. The resulting total traffic projections for existing conditions will be depicted on a figure showing the project site, and the roadways within the study area. For each of the Study years, the total traffic projections will include the future background traffic plus the project-generated traffic. Background traffic will be developed by an annual growth rule obtained by the Town or obtained from the Town's Transportation Master Plan. The future total traffic projections will be depicted on figures for each Study year. Based upon the total traffic projections and the Roadway Design Criteria of this manual, the TIA shall provide roadway functional classification recommendations. For example, a roadway projected to carry between 3,500 and 5,000 vehicles per day would be recommended as a collector without parking, but if the projected traffic was less than 1,000 vehicles per day, it could be recommended to be a local street with parking.

7.3.6 Site Design and Circulation Evaluation

The project's site design shall be analyzed to determine if the proposed circulation system serves pedestrians, bicyclists, transit users, and vehicles. The site design should be evaluated to determine if facilities for vehicles, pedestrians, bicycles and transit meet these *Criteria*.

The project's site design should be evaluated to determine if traffic flows can be adequately accommodated. The on-site traffic flows should be evaluated to minimize areas where motorists would tend to speed, minimize potential conflict areas between vehicles and pedestrians/bicyclists, and to determine if circulation patterns are designed so as to avoid unnecessary traffic congestion and conflict points.

7.3.7 Transportation Impact Considerations

The TIA will determine if the project will create any impacts at the study intersections and street segments surrounding the project site. In order to determine this, the peak hour levels of service at each of the study intersections will be evaluated for each of the following scenarios:

- Total Existing Traffic Conditions
- Future Total Traffic Conditions for each Study Year

The level of service analysis for each of the traffic scenarios and Study years need to include mode split assumptions. The level of service findings shall be shown in the TIA in tabular form.

7.3.8 Minimum Acceptable Levels of Service

Minimum acceptable level of service (LOS) for all intersections in the Town shall be LOS D, except in Downtown (excluding the Plum Creek Parkway intersections) where the minimum acceptable LOS shall be LOS E. Where the LOS of the individual movements can be calculated, no through movements shall operate worse than LOS D. No left turn movements shall operate worse than LOS E, nor have queues that block through traffic during any peak hour. When the LOS of an existing intersection doesn't meet these criteria, the LOS of the intersection cannot be further degraded by traffic that will be generated by the proposed project without appropriate mitigation measures taken to keep the LOS at existing levels.

Note: For the purposes of this manual, the Downtown area is defined by the boundaries of the Downtown Overlay District as defined in the Municipal Code. The LOS E minimum level of service does not apply to Plum Creek Parkway intersections.

7.3.9 Significant Impacts

This section applies primarily to vehicular-related impacts associated with the proposed project. A project is defined as significantly impacting a study intersection when one of the following conditions is expected to occur within the first year of the project being completed. Mitigation measures are required when an intersection is significantly impacted.

1. For Signalized Intersections:
 - A. When the added project traffic causes an intersection to fail the minimum acceptable level of service standard; or
 - B. When the background traffic conditions (without project traffic) causes an intersection to fail the minimum acceptable level of service standards; and the project traffic causes more than a 2 percent increase in the intersection delay. The existing coordination timing plans are to be used in these assessments.
2. For Unsignalized Intersections:
 - A. When the added project traffic causes an intersection to fail the minimum acceptable level of service standard;
 - B. When vehicle queues to adjacent intersections would create impeded traffic flows and/or excessive congestion;
 - C. When added project traffic is determined to create potential safety problems.

7.3.10 Mitigation Measures

If the minimum LOS cannot be met once the project has been developed, the TIA shall include feasible measures to mitigate the project's impacts. The mitigation measures are intended to be in addition to the required improvements necessary to meet these *Criteria*. The goal of the mitigation

measure(s) should be to minimize the demand for trips by single-occupant vehicles and to increase the use of alternative modes. Therefore, the following mitigation categories are listed in order of priority:

- Transportation demand management measures
- Transit capacity and access improvements
- Traffic signal operation improvements
- Street widening and other physical improvements
- Street restriping and parking regulations

The intersection LOS should be recalculated to reflect the effectiveness of the proposed mitigation measures: to show that the project-related impacts have been reduced; and to show that an acceptable LOS has been achieved. The LOS findings shall be shown in tabular form.

A. Transportation Demand Management (TDM) Measures:

TDM measures are designed to facilitate the use of alternative transportation modes in an effort to decrease demand on the roadway system by single-occupant vehicles. Examples of TDM measures include the following:

- Vehicle trip reduction incentives and services offered by employers to encourage employees to utilize alternative modes of travel such as carpooling, vanpooling, bicycling, walking, telecommuting, etc.
- Financial support for the capital and/or operating costs of enhanced transit or vanpool service to the project.
- Site trip “cap” and/or parking “cap” including trip-monitoring agreements.
- A detailed description of the proposed TDM measures and implementation plan must be included in the TIA for any project seeking TDM-related trip reductions. If the TDM program is acceptable to the Town, the Developer will be allowed to reduce total project vehicle trips by an amount commensurate with applicable trip reduction policies.

B. Transit Capacity and Access Improvements

Suggested elements of a transit program should include:

- Contributions of equipment or funds to increase the capacity of existing transit systems
- Transit shuttles provided by applicant (e.g. bus, taxicab, van, etc.)
- Contributions toward transit stations or centers

C. Traffic Signal Operational Improvements

Traffic signal operational improvements could include upgrading the signal to add additional signal phases, or to signalize an adjacent intersection in order to provide relief to the study intersection. Signal improvements and/or installations must meet MUTCD signal warrants and be approved by the Town.

D. Street Widening and Other Physical Improvements

Street widening and other physical improvements must be demonstrated to be physically feasible and must meet minimum standards in these *Criteria* for both on- and off-site improvements.

E. Street Restriping and Parking Regulations

Any proposed striping and parking regulations must be approved by the Town. Generally, street restriping is not a preferred mitigation measure because it often requires that parking be removed. This can cause secondary impacts within commercial and residential areas. Therefore, any parking impacts should be clearly identified and mitigated to the extent feasible.

7.3.11 Neighborhood Transportation Impact Considerations

The TIA should include a focused analysis of the potential project-related impacts on adjacent residential areas. The need for this Study will be identified as part of the Base Assumptions. If it is determined that a neighborhood transportation impact review is required, the following procedure should be used:

- Examine the existing transportation conditions within the neighborhood. This should follow the same procedure as set forth earlier for the transportation impact consideration. Daily and peak hour traffic volumes shall be collected for the local streets to be included in the analysis.
- Determine project-generated traffic for all modes within the neighborhood and show on a figure.
- Determine total traffic projections for the local streets. This shall follow the same procedures as described earlier, including other projects and area-wide growth if applicable.
- Determine if the proposed project would create significant impacts to the residential streets using the conditions stated earlier.
- If necessary, develop measures including but not limited to traffic calming techniques to mitigate any significant impacts.

The neighborhood TIA should also discuss how pedestrians and bicyclists would access the proposed project to/from the adjacent neighborhood(s), and the need for special facilities to enhance direct pedestrian and bicycle connectivity.

7.3.12 Conclusions

The findings of the TIA shall be provided in summary format, including the identification of any areas of significant impacts and recommended improvements/mitigation measures to achieve the LOS standards for all modes and for each analysis year.

Section 8

PEDESTRIAN & BICYCLE FACILITIES

8.1 GENERAL

This section sets forth the minimum criteria to be used in the design of all pedestrian and bicycle facilities within the Town of Castle Rock's rights-of-way or easements. This section does not apply to recreational use trails.

8.1.1 Definition of Terms

The different types of pedestrian and bicycle facilities referred to in this chapter are described below. Collectively these terms are referred to as pedestrian and bicycle facilities.

1. Multi-use trails – are located off-street in and through parks and open space areas. They are typically paved and 8-10 feet in width. They can accommodate a variety of users such as pedestrians, bicyclists and skaters.
2. Multi-use sidepaths – are located off-street next to arterial and collector streets. They are typically paved 8-10 feet wide and are located within the street right-of way. They can accommodate a variety of users such as pedestrians, bicyclists, and skaters.
3. On-street bike lanes – are located on streets and are normally 6 feet wide (measured from curb face) and are marked and signed for bicycle travel.
4. Sidewalks – are typically located in residential areas and are generally 5 feet in width. They are typically used by pedestrians.

8.1.2 General Criteria

1. All projects shall optimize pedestrian and bicycle travel within the Town by providing sidewalks, multi-use sidepaths, multi-use trails and on-street bike lanes in all new developments in accordance with the applicable development regulations, the Town's Transportation Master Plan, the Town's trails plan, the Town's Bike Marking and Signage Policy, and other transportation documents
2. In this chapter the AASHTO's "Policy on Geometric Design of Highways and Streets ("Greenbook") and the "Guide for the Development of Bicycle Facilities" as published by the American Association of State Highway and Transportation Officials was used as a reference.

3. See Section 2 of this manual for designing Downtown pedestrian and bicycle facilities.
4. Off-site improvements may also be required to provide residents with access to schools and local commercial and community facilities.
5. Pedestrian and bicycle facilities where required by applicable Town ordinances, approved site plans, or development agreements shall be shown on the approved construction plans and shall meet, at a minimum, these *Criteria*.
6. The materials used in the construction of all pedestrian and bicycle facilities shall be in conformance to the Town of Castle Rock Detail Plans.
7. In locations within the development where pedestrian and bicycle facilities must be located on or across private property or coincide with private access facilities, the developer shall be required to provide the Town a public access easement through the private property. This will ensure that these facilities become part of the overall Town system and available for use by pedestrians and bicyclists from outside the development. The easement width shall be clearly indicated on the site plan and construction plans.
8. When pedestrian and bicycle facilities are to be constructed, their maintenance and operational responsibility will be determined during the site/subdivision plan approval process.
9. Manhole lids and other utility appurtenances should be located outside of the sidewalks, sidepaths, and trails, however, if it is necessary to construct within these improvements, the manhole lids or appurtenances shall be flush mounted and shall not create a tripping hazard.
10. Multi-Use Trails shall conform to ADA guidelines, in addition to AASHTO guidelines for bicycle facilities.
11. Storm inlet grates located in shoulders and bike lanes shall be “bike-friendly” type.

8.2 STANDARDS AND CRITERIA-OFF-STREET BICYCLE FACILITIES (Multi-Use Trails & Sidepaths)

Off-Street bicycle facilities consist of multi-use trails and sidepaths. In order to plan and construct multi-use trails and sidepaths in a consistent, usable and orderly fashion, it is necessary to establish basic standards and criteria. The standards and criteria in this section shall be utilized in the design and review of multi-use trails and sidepaths for all development projects.

8.2.1 Multi-Use Trail and Sidepath Width, Type and Surface

1. Multi-use trail and sidepath widths and surfaces shall be determined by the Town based on site conditions, expected usage, and street classification
2. Multi-use trails shall have a minimum finished surface width of 10 feet for two-way facilities.
3. Multi-use sidepaths shall have a minimum width of 8 ft or 10 ft based on roadway classification.

8.2.2 Multi-use Trail and Sidepath Location

1. Multi-use trail and sidepath locations shall be based on safety, circulation, and access considerations. Multi-use sidepaths designated on the Town's Transportation Master Plan that are generally parallel to existing or proposed roadways shall be constructed within the street right-of-way. Any location in which a sidepath is not within the dedicated street right-of-way must be privately maintained unless a sidepath easement dedicated to the Town of Castle Rock, is provided of sufficient width to allow for maintenance activities and equipment. The multi-use trail system shall make use of, but not be limited to, the drainage and open space areas.
2. Where needed, an easement with a minimum width of 25 feet shall be provided for multi-use trails.

8.2.3 Clearance

1. Where possible, multi-use trails and sidepaths shall be located so as to minimize the loss of trees and disruption of natural environmental conditions. A minimum of two feet (2') clear zone is required between the bike path/trail edge and any horizontal obstructions such as trees, utility poles, signs, fences or other obstacles. The clear zone shall be graded at a maximum 1:6 slope.

2. Regardless of multi-use trail surface, all vegetative material within 4 feet of the trail shall be removed prior to trail construction. This requirement is to be verified by the developer's engineer and specified on the approved plans.
3. All multi-use trails shall have a minimum of 10' clear vertical distance above the path.

8.2.4 Grade

1. If the multi-use trail or sidepath profile differs from the adjacent roadway profile, a profile of the proposed construction shall be included in the construction plans or site plan. Typical cross sections shall be provided for all critical points along the length of the facility.
2. A minimum grade of six tenths of one percent (0.6%) is recommended except in sags where proper drainage is provided by cross slope.
3. A maximum sustained grade of five percent (5%) is recommended. However, steeper grades will be considered in accordance with the latest edition of the AASHTO "Guide for the Development of Bicycle Facilities" and ADA requirements. Short dips in grade or excessively long steep grades will not be approved.

8.2.5 Cross Slope

The cross slope shall be a maximum 2.0% (1/4" per foot). Sloping in one direction instead of crowning is required. 1.5% maximum should be used in the design of cross slopes, providing a margin of error for construction.

8.2.6 Sight Distance

Minimum stopping sight distance shall be provided for horizontal and vertical curves in accordance with the design criteria presented in AASHTO's "Guide for the Development of Bicycle Facilities".

8.2.7 Design Speed

1. For paved surfaces, a minimum design speed of 20 m.p.h. shall be used. Where grades exceed 4 percent, a design speed of 30 m.p.h. shall be used.
2. For unpaved surfaces, a minimum design speed of 5-10 m.p.h. shall be used. Where grades exceed 4 percent, a design speed of 20 m.p.h. shall be used.

8.2.8 Radius of Curvature

Turning radii in accordance with the following table shall be provided.

TABLE 8.1
Minimum Radii for Paved Bike Paths Based on 2% Superelevation

Design Speed (MPH)	Minimum Radius (FT)
12	30*
20	90
25	155
30	260

* Only to be used under constrained conditions and with Design Variance approval. Standard Warning signs and pavement markings shall be installed in accordance with the MUTCD. Pavement widening through curves may also be required.

8.2.9 Drainage

1. All sidepath or trail facility designs shall meet the storm drainage requirements contained in Section 2.4. All inlet grates used within the designs shall be approved for use with bikes. Multi-use sidepaths or trails located within the state highway right-of-way shall meet CDOT drainage standards.
2. As a general guide, where a sidepath or multi-use trail is cut into a hillside, a ditch shall be placed along the high side of the path to prevent sheet flow across the path. In some circumstances, at the discretion of the Town, water may be allowed to sheet flow across the trail facility.

8.2.10 Safety Considerations

1. A setback area is required between the edge of the multi-use sidepath and the back edge of curb and gutter. Five feet (5') is the minimum requirement. Multi-use trails shall not be constructed directly adjacent to street curb or street pavement, except at street intersections.
2. Multi-use sidepaths adjacent to streets with speed limits exceeding twenty-five (25) mph, and which have slopes greater than six percent (6%), may require special safety measures such as the installation of barriers or other safety devices or an increase in the distance between the bike path and street.
3. Standard signing and markings from the MUTCD shall be included in the design and construction of the multi-use trails and sidepaths to alert users of potential hazards and to convey regulatory messages.
4. The Design Engineer shall address stopping and intersection sight distance at all path intersections, curves, and particularly where steep grades are proposed at roadway intersections. Obstructions to the visibility of motorists or path/trail users shall be removed or the path/trail shall be aligned around the obstruction to maximize visibility
5. Curb ramps conforming to ADA requirements will be provided at or near all curb crossings to allow continuity of use by bicyclists and persons with disabilities.
6. All multi-use trails that cross a drainage channel shall require either a bridge or a fair weather crossing. See Chapter 9, Bridges and Major Drainage Structures, for design requirements for bridges.
7. In accordance with the Town's Open Space and Trails Master Plan, grade-separated crossings of major collectors and arterials may be required. When an underpass or overpass is being considered a feasibility study may be required to assess the costs, the number of users, safety and operations of the proposed structure.
8. Railings, fences, or barriers on both sides of a multi-use trail or sidepath shall be at a minimum of 42" high. Smooth rub rails should be attached to the barriers at approximate handlebar height of 42" if the barrier is within 2

feet of the path. Barriers should not impede storm water runoff from the path.

9. All multi-use trail and sidepath bridge underpasses shall have lighting in accordance with Section 12, Lighting.
10. The minimum clearances for underpasses are as follows:
 - A. Horizontal: 12 feet
 - B. Vertical: 10 feet from trail surface to underside of bridge (8 feet for existing bridge structures), 12 feet if equestrian accommodation is required.
11. The trail surface elevation shall be at or above the high water mark for the 10-year storm.

8.2.11 Intersections

1. The following requirements apply to all multi-use trail and sidepath intersections with either streets or other pedestrian or bicycle facilities:

- A. Curb Ramps

Curb ramps in accordance with ADA requirements shall be provided at each street/driveway intersection.

- B. Sight Distance

Sight distance requirements shall be in conformance with AASHTO requirements. The Designer shall ensure sufficient stopping and intersection sight distance at all trail and sidepath intersections and curves, particularly where steep grades are proposed.

- C. Turning Radius at Intersections

The minimum turning radius at bike path intersections shall be 15 feet.

8.3 STANDARDS AND CRITERIA - ON-STREET BIKE LANES

8.3.1 On-Street Bike Routes

Streets designated as on-street bicycle routes shall be designed to provide additional width for bike lanes.

8.3.2 Width and Cross Sections

The bike lane shall be designed per the width shown in standard typical street sections. See Appendix A.

8.3.3 Signage and Striping

All designated bike lanes shall be signed and striped, as required by the MUTCD and as required in Section 6, Traffic Signing and Pavement Markings.

8.3.4 Traffic Signal Detection

Separate signal detection may be required in bike lanes at signalized intersections. Where inductive loop detectors are used, quadra-pole-type loops are required. Where video detection is used, detectors shall be placed and calibrated in a manner to detect bicycles in their appropriate lane(s). The type and placement of the detection shall be approved by the Town.

8.3.5 Bike Lanes at Intersections

At the intersections where a separate right turn lane exists and is striped, the bicycle lane shall transition and be placed between the through lane and the right turn lane. The bike lane width shall remain the same as the approaching bike lane. Refer to the MUTCD for typical signing and pavement markings.

8.4 STANDARDS AND CRITERIA – PEDESTRIAN FACILITIES (Sidewalks, Sidepaths and Curb Ramps)

8.4.1 ADA Requirements

All pedestrian facilities shall be designed in accordance with American Disabilities Act (ADA) regulations and the requirements of these *Criteria*

8.4.2 Sidewalks / Sidepaths

1. Sidewalks shall be constructed within the street right-of-way in accordance with Town Standards. Any location in which sidewalk is not within the dedicated street right-of-way must be privately maintained unless a sidewalk easement dedicated to the Town of Castle Rock, is provided of sufficient width to allow for maintenance activities and equipment.
2. The Downtown Mobility Master Plan (DMMP) is a planning tool for designing Downtown pedestrian and bicycle facilities.
3. A sidepath is a multi-use sidewalk having a minimum width of 8 ft. All design criteria for sidewalks, with the exception of width, shall apply to sidepaths. The Town has established a sidepath plan that complements the sidewalk/multi-use trail system. This plan is included in the Town's Transportation Master Plan. The developer must review the latest version of the plan. The requirement for sidepaths will eliminate the need for the sidewalks along the same segment of the street.
4. Sidewalks shall be installed at the time of roadway construction or widening unless otherwise approved through the development review process. The Public Works Department may allow the developer to pay a fee in lieu of constructing the sidewalk in certain locations. This fee must be paid prior to the issuance of the Construction Permit.
5. Sidewalk shall be provided along streets within new developments and expansions of existing developments.
6. The Town is receptive to reviewing alternate designs relative to the provision of pedestrian facilities. Such alternate designs may include greenways or a combination of sidewalks and greenways. The requirement for sidewalks may only be waived by the Town Council.

7. Where no curb and gutter exists on a road that requires sidewalks, the Town may require curb and gutter installation in addition to the installation of the sidewalk.
8. A sidewalk may be constructed so as to provide a gradual meander and to facilitate the installation of landscape material or to avoid existing obstacles such as power poles, trees, fire hydrants, street lights, etc.
9. The design of the sidewalk shall be such that pedestrian safety is provided and the usability of the sidewalk is not affected.
10. All sidewalks shall be constructed of concrete. Alternative type materials, such as asphalt, may be presented to the Town's Public Works Department for consideration. Pervious materials not meeting ADA requirements shall not be allowed due to concerns for pedestrian accessibility/usability and maintenance costs.
11. Pipes, drains, flumes or other concentrated stormwater devices shall not discharge across a sidewalk, but rather shall be piped or flumed under the sidewalk.
12. Minimum sidewalk widths for the various street classifications shall be as specified in Appendix A - Typical Cross Sections. The Town may require additional width within activity areas and for routes leading to and from these areas. The final sidewalk width shall be determined through additional study of higher pedestrian traffic areas. Refer to Section 2 for Downtown sidewalk widths.
13. All sidewalks that cross driveways and alleys shall be designed in accordance with ADA and AASHTO.
14. All street designs shall include sidewalks on both sides of the street.
15. In all existing areas previously developed, sidewalks, curbs, and gutters may be required to match existing conditions or standards, as determined by the Town.
16. When a sidewalk must be widened, the widening shall only be allowed for an increased width of 4 feet or more. If the added width needed is less than 4 feet, the existing walk shall be removed and reconstructed to the new required width.

17. Drainage shall meet the requirements specified in the “Storm Drainage Design and Technical Criteria Manual”.
18. All detached sidewalks less than 8 feet in width and not within driveways shall be a minimum of 4-inch thick concrete. All detached sidewalks 8 feet and greater in width shall be 6 inches thick. All sidewalks within a driveway shall be a minimum of 6 inches thick. All attached sidewalks shall be a minimum of 6 inches thick. Sidewalks shall be a minimum of 8 inches thick where crossed by commercial or industrial traffic.
19. Slope:
 - A. Cross Slope. Maximum cross slope for sidewalks shall be 2%.
 - B. Longitudinal Slope. Longitudinal slope of attached sidewalks shall be consistent with the street slopes.
20. When required by the Town, grade separated pedestrian crossings (either underpass or overpass) shall be coordinated with the appropriate Department.
21. Horizontal/vertical curves on all sidewalks shall follow the design criteria for bikeways.
22. Sidewalk vertical clearance shall be 10 feet.
23. Sidewalk horizontal clearance shall be meet AASHTO requirements.
24. The Town may require off-site sidewalk extensions to provide pedestrian connectivity to destinations within ¼ mile of the project as identified in the Transportation Impact Analysis. Additional off-site sidewalk construction extending greater than ¼ mile from the project may also be required in some circumstances such as when the project is within a school walking area boundary.

8.4.3 Curb Ramp Requirements

Curb ramps shall be installed at all intersections and at certain mid-block locations for all new construction or reconstruction of curb and sidewalk, as follows:

1. **4-Way Intersections.** Curb ramps shall be included at all intersections corners. Curb ramps shall be constructed in accordance with Town of Castle Rock Detail Plans.
2. **“T” - Intersections.** All “T” intersections shall have curb ramps for crossing both streets.
3. **Local Streets/Mid-Block.** Local Residential and Mixed-Use streets with block lengths longer than 600 feet will require mid-block curb ramps. In general, spacing between curb ramps for crossing the street should not exceed 600 feet.
4. **Trail Crossings.** If a public walkway or bikeway intersects the street, a ramp shall be provided to connect the walkway or bikeway to the street. The ramp should line up with the crosswalk.
5. **Detached Sidewalks.** Where sidewalks are detached from the curb, directional ramps should be used. On arterial streets with detached sidewalks and corner radii greater than or equal to 35 feet, directional ramps shall be installed.

8.4.4 Use of Standard Drawings

Project drawings shall call out the specific detail from Town of Castle Rock Detail Plans to be used in construction for each curb ramp.

8.4.5 Sidewalk Chase Drains

Sidewalk drains shall not interfere with the pedestrian’s use of the sidewalk. The chase drain shall be flush with the sidewalk surface and be securely fastened as specified. Sidewalk drains shall not be located within a curb ramp, curb cut, or driveway. This section also applies to bike paths, sidepaths, multi-use trails.

8.4.6 Curb Returns

In certain cases, the Town may require the radius of the curb return to be reduced from the values given in Table 2.2 (Chapter 2, Roadway Design and Technical Criteria), to reduce pedestrian travel time and distance.

8.4.7 Pedestrian Crossings

1. All crosswalks shall be marked in accordance with the MUTCD and Section 6, Traffic Signing and Pavement Markings. Crosswalk markings will be required at all signalized intersections, school areas, and high pedestrian areas as designated by the Town's Traffic Engineering and Operations Manager.
2. **Cross Slope** - Sidewalk design cross slope shall be designed at 1.5% across driveways, with a maximum of 2% constructed cross slope.
3. **Crosspans** - Crosswalks shall not be located in crosspans.
4. **Maximum Crosswalk Length** - The maximum length for any non-signalized crosswalk shall be 56 feet. Any non-signalized street crossing wider than 56 feet shall be provided with pedestrian refuge area having a minimum width of 6 feet.

8.4.8 Traffic Signals

All pedestrian traffic signals shall be in accordance with the latest version of the MUTCD and Chapter 4, Traffic Signals. All traffic signals shall include pedestrian signal indications with countdown timers and pedestrian push buttons.

8.4.9 Pedestrian Refuge Areas

For arterials with raised medians and on splitter islands for roundabouts, a pedestrian refuge area shall be created in the median to increase pedestrian safety. The vehicle turning radii must be taken into account with the specific design of islands and medians. Curb ramps shall be aligned to guide the sight-impaired to the refuge area. The pedestrian refuge area should be eight (8) feet in width but no less than six (6) feet.

8.4.10 Pedestrian Minimum Clear Path

The minimum clear path around utility structures, street furniture and other encroachments shall be greater or equal to the sidewalk width listed in Table 2.2 (Section 2 – Roadway Design and Technical Criteria) for the applicable street classification.

8.5 RECTANGULAR RAPID FLASHING BEACON (RRFB) DEVICES (Supplemental Crossing Features)

1. RRFBs are pedestrian-actuated conspicuity enhancements used in combination with a pedestrian, school, or trail crossing warning signs to improve safety at uncontrolled, marked crosswalks. The device includes a minimum of two rectangular shaped yellow indications, each with an LED-array-based light source, that flash with high frequency when activated.
2. Designers should use the FHWA's Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations in determining the best locations, and as otherwise directed by the Town.
3. Determining the need for a RRFB is to encourage and provide the safest crossing for pedestrians and bicyclists, and not over saturate crossings with signs and beacons which reduces effectiveness.
4. Consideration will be made based on vehicle traffic volume, speed of the roadway, nearby pedestrian generators, pedestrian and bicycle activity, and other nearby crossing location options.
5. Placement
 - A. Installations need to follow Town's standard RRFB installation details, including pavement marking, signage, RRFB equipment, push buttons and advanced signage and beacons, if necessary.
 - B. Beacons and signage shall be located in the median wherever possible.
 - C. If no median is present, devices need to be double sided on both sides of the roadway.

- D. If the median is greater than 8-feet wide, two, single sided beacons and signs shall be provided in the median.
- E. Advanced beacons may be required if the speed is 40 mph and higher, or limited sight distance exists.

Section 9

BRIDGES, CULVERTS & RETAINING WALLS

9.1 GENERAL INFORMATION

9.1.1 Scope

This chapter describes general bridge, culvert and retaining wall design requirements for use in the Town of Castle Rock.

9.1.2 Pre-Design Meeting

Prior to beginning a bridge or major culvert design, a pre-design meeting may be requested by either the Town or the design consultant. A pre-design meeting is recommended.

9.1.3 Independent Review of Plans

The applicant shall be responsible to contract with a reputable engineering firm to conduct an independent review of the design construction plans. Comments and corrections recommended by the independent review firm shall be incorporated into the final plans. The Town will issue a permit to allow construction only upon written verification of the independent review & comment incorporation process. All costs associated with this process shall be borne by the applicant.

9.1.4 Construction Inspection

The applicant shall be responsible to contract with a reputable engineering firm to conduct appropriate inspection of the bridge or major culvert construction. The applicant, through the engineering firm, shall be responsible for ensuring compliance of construction with the approved plans and specifications. The Town will issue a permit to allow construction only upon written verification that a contract is in place for this work. All costs associated with the inspection shall be borne by the applicant.

9.2 BRIDGE & CULVERT CRITERIA

9.2.1 General Design Requirements

1. All bridge and culvert elements shall be designed in accordance with:
 - A. AASHTO, “LRFD Standard Specifications for Transportation Materials and Methods of Sampling and Testing”, latest edition and applicable interims.
 - B. CDOT, “Standard Specifications for Road and Bridge Construction”, latest edition and Standard Special Provisions and Bridge-specific Project Special Provisions.
 - C. CDOT, “Bridge Manual”, latest edition and Bridge Technical Memorandums.
2. Any structure over a 20 ft. span must be designed to current AASHTO vehicular live loading.
3. All box culverts and bridges shall have the year of construction permanently indented on the downstream headwall face in legible numbers. The numbers shall be 3” high by 1½” deep in the headwall face.
4. Culvert and bridge waterway opening designs shall also conform to the parameters set forth in the “Town of Castle Rock Storm Drainage Design and Technical Criteria Manual”, latest edition.
5. If a vehicular railing or safety-shaped barrier is within the clear zone as defined by AASHTO Roadside Design Guide, approach guardrails are to be installed on all approach ends in accordance with AASHTO guidelines.
6. The crown should be centered on the bridge except for 1-way bridges, where a straight cross slope in one direction may be used. The cross slope should match that of the approach pavement.
7. Approach railings are required at the ends of bridges exposed to approach traffic. The type of approach railing selected should match the rail to be used on the bridge. Approach railings must have an approved end treatment that meets current standards at any exposed end. (For detailed information see the AASHTO “Roadside Design Guide”.)

8. Timber bridges are not allowed.
9. A safety railing is required on or adjacent to vertical faces such as retaining walls, wing-walls and abutments, etc., and where the vertical fall is 2 feet or more. The safety railing shall be placed on top of the vertical face structure of the vertical drop.

9.3 RETAINING WALL CRITERIA

1. Recommended types of retaining walls include reinforced concrete and structural masonry. Heavy timber construction is not encouraged. The walls need to include integral attachments for railings and weep drainage where applicable.
2. In general, the materials and design of retaining walls need to match or blend with the adjacent natural features, landscaping and/or buildings.

9.4 STRUCTURAL CLEARANCES

9.4.1 Horizontal Clearances

1. Clear roadside design is recommended for all arterials and collectors whenever practical. Where the roadway is curbed, the clearance between curb face to edge of the object should be a minimum of 3 feet. For further guidance, refer to the AASHTO "Roadside Design Guide".
2. The horizontal clearance to bridge piers, abutments, headwalls and retaining walls on all streets can be no less than 10 feet from the edge of the traveled way and may require protection depending on the roadway design speed.
3. Drainage structures (pipes, box culverts, etc.) are to be extended to a distance of 10 feet from the edge of the travel way. A lesser clearance may only be allowed when rights-of way limitations make the desired clearance unreasonable and appropriate traffic barriers are installed in accordance with the AASHTO "Roadside Design Guide".

9.4.2 Vertical Clearance

Minimum vertical clearance shall be 16.5 feet over the entire width of the traveled way of an arterial street or major collector street. On other streets, the minimum shall be 14.5 feet.

9.5 CONSTRUCTION PLANS AND SPECIFICATIONS

9.5.1 Bridge Plan Content

1. The designer shall prepare separate drawings of all bridge elements and incorporate them as an integral part of the construction plans.
2. As a general guide, the plans shall be drawn at a 1 inch = 20 feet scale, and shall include the following items:
3. Locate and identify all existing and/or proposed improvements, above and below ground, within 200 feet of the structure including all utilities.
4. Locate and identify all existing and/or proposed pavement marking and signing.
5. Locate existing vegetation.
6. Provide a profile layout and roadway curve data.

9.5.2 Specifications

Specifications shall be developed in accordance with CDOT's Standard Specifications for Road and Bridge Construction. The designer will determine the need for project-specific construction special provisions. Notes may be added to the construction plans if the designer feels that it is necessary to clarify certain items.

Section 10

TRANSIT FACILITIES

This section is reserved for future use when transit services are available in Castle Rock.

Section 11

NEIGHBORHOOD TRAFFIC MANAGEMENT

11.1 GENERAL INFORMATION

11.1.1 Scope

This section of the Transportation Design Criteria Manual presents acceptable methods for implementing neighborhood traffic management (traffic calming) for new local streets so that future neighborhoods are not negatively impacted by vehicular traffic.

11.2 TRAFFIC CALMING DESIGN CRITERIA

11.2.1 General Requirements

1. Proposed land uses, and their associated travel demands, shall be designed so that they do not negatively impact surrounding/adjacent residential neighborhoods.
2. The design of residential areas shall limit “unwanted” vehicle traffic while maintaining emergency access. “Unwanted” vehicle traffic is defined as any one of the following:
 - Traffic operating at excessive speeds
 - Vehicles with an origin and destination outside the neighborhood
 - An excessive volume, as defined by the Town, of traffic on a local street.
3. All proposed local streets with long, uninterrupted segments shall incorporate traffic calming measures. Long uninterrupted segments are generally defined as relatively straight (curves allowing design speeds greater than 25 mph), and longer than 600 feet.
4. In general, the design guidelines for local street sections, as presented in Section 2 of this manual (Roadway Design Criteria), are intended to discourage high operating speeds, high volumes and cut-through traffic.
5. Yield and stop signs may be used to break up long stretches of streets only if they can be shown to be in conformance with the latest MUTCD. Traffic calming treatments must be utilized if intersection signage is not appropriate.

6. Traffic calming may be required for some collector class streets in areas of high pedestrian traffic, for example: schools & parks.

11.2.2 Traffic Calming Measures

1. The following traffic calming measures are examples that may be considered for incorporation into the design of new streets. The use of any of these measures shall require the prior approval of the Town Manager or designee.
 - A. Entry Island: Entry Islands are typically at the perimeter of a neighborhood. They can incorporate neighborhood identification signing and monumentation.
 - B. Raised Pedestrian Crossing: A flat-topped speed table built as a pedestrian crossing. Commonly includes a median refuge island, curb extensions, or both to shorten crossing and improve safety. May also include specialty pavement treatments. Note: Any vertical traffic calming element must be approved by the Town's Fire Department.
 - C. Curb Extensions: Segments of roadway narrowing where roadway edges or curbs are extended toward the center of the roadway. Vehicles may slow as they pass through the narrowed section. Curb extensions can be used in conjunction with midblock pedestrian crossing treatments. May also be designed with curb chase to maintain existing flow line. Should not be used where they would encroach into bike lanes.
 - D. Partial Medians: A raised median in the center of the roadway with one-way traffic on each side. Can only be constructed at mid-block locations to allow all turning movements at intersections.
 - E. Traffic Circle: A raised circular median in an intersection with counter-clockwise traffic flow. Vehicles must change their travel path to maneuver around the circle and are typically controlled by "Yield on Entry" on all approaches.

- F. Speed humps and speed cushions: Raising short sections of the street to control speeds. Note: Any vertical traffic calming element must be approved by the Town's Fire Department.
- G. See examples of traffic calming in Appendix B.
- H. Other traffic calming measures not identified above or in Appendix B will also be considered with approval of the Town Manager or designee.

11.3 CONSTRUCTION PLANS

11.3.1 Traffic Calming Plan Content

1. The designer shall include all traffic calming elements as an integral part of the construction plans.
2. All signage elements must comply with the MUTCD.

Section 12

LIGHTING

12.0 GENERAL INFORMATION

12.0.0 Scope

This chapter provides the procedures and criteria for the design and installation of street and pedestrian lighting.

12.1 LIGHTING DESIGN CRITERIA

12.1.1 General Lighting Design Requirements

1. All equipment and materials specified must conform to current Core Electric Cooperative specifications. The Developer is responsible for coordinating all aspects of design and installation with Core Electric Cooperative. If Core Electric Cooperative offers multiple fixture choices, the Town must approve the fixture choice prior to installation.
2. All fixtures, poles, and designs must be reviewed and approved by the Town and Core Electric Cooperative.
3. All lamps are Light Emitting Diode (LED). The Town reserves the right to specify which type will be used. On traffic signals, the lamps must conform to Section 4, Traffic Signal Design.

12.1.2 Light Spacing and Layout

1. This section refers to lighting on all streets within the Town.
2. The lighting type and spacing shall be as follows:

**TABLE 12.1
STREET LIGHT REQUIREMENTS AND SPACING**

Roadway Classification	Luminaires	Staggered Spacing
Arterial	75-W LED, fiberglass pole, 30-foot mounting height	150 feet
Collector & Industrial	75-W LED, fiberglass pole, 30-foot mounting height	200 feet
Local Residential	50-W LED, fiberglass pole, 15-foot mounting height	300 feet
Downtown Streets	The Town requires custom streetlights and pedestrian lights in the Downtown area. See Public Works Details and Forms.	Spacing of Pedestrian Lights is approx. 40 feet separation on each side of the street. Also see Intersection Light Locations for Downtown.

3. Street lighting shall be installed behind sidewalks where sidewalks are attached to the curb. Lighting on local residential streets shall be located a minimum of 12 inches behind the adjacent walk but must be within easements or right-of-way. For major collectors and arterials, the light must be offset a minimum of 24 inches from the curb face and yet leave at least 24 inches of clear space between the light pole and the edge of the sidewalk, also-24 inches of clear space if adjacent to a multi-use trail or sidepath.
4. All lighting in residential areas shall be installed to minimize light shining on or negatively affecting the neighboring residences.
5. A streetlight is required in the turnaround area of a cul-de-sac.
6. On curved streets, the Town may consider streetlight spacing based on adequate illumination rather than a specific separation distance. A photometric analysis is required to demonstrate adequate illumination.
7. Luminaries may be revised administratively when equipment becomes obsolete and improved luminaire standards are adopted by Core Electric

and/or the Town. Streetlight spacing may be revised administratively based on the photometrics of luminaires and adequate illumination needs.

12.1.3 Intersection Lighting

1. The positioning of light standards at intersecting streets. See Table 12.2.

TABLE 12.2
INTERSECTION LIGHT LOCATIONS

Intersection Type	Luminaires	Light Locations
Arterial/Arterial	75-W LED(or highest wattage available by Core Electric Cooperative if less), fiberglass pole, 30-foot mounting height	4 lights, one on each corner
Collector/Arterial	75-W LED, fiberglass pole, 30-foot mounting height	4 lights, one on each corner
Collector/Collector	75-W LED, fiberglass pole, 30-foot mounting height	2 lights, one each on opposite corners
Local/Collector	50-W LED, fiberglass pole, 18-foot mounting height	2 lights, one each on opposite corners
Local/Local	50-W LED, fiberglass pole, 18-foot mounting height	1 light on one corner
Downtown	See Public Works Details and Forms for custom light specification.	Streetlights required. 4 lights, one on each corner

2. Lighting locations at roundabouts will vary from the above chart. Lighting layouts at roundabouts must adhere to the latest FHWA design guide for roundabouts and/or publications of the Illuminating Engineering Society (IES) concerning roundabout lighting.

3. Signalized intersections will be lighted using combined streetlights and mast arms. Since these fixtures are owned by the Town, not Core Electric Cooperative, the wattage for street light fixtures on signals shall be 75-W LED with the fixture housing approved by the Town.

12.1.4 Installation

1. Street lighting shall be installed with underground electric service on all public streets in the Town.
2. It shall be the responsibility of the Developer of new or upgraded street improvements to install street lighting fixtures and the associated power sources to adequately light the public improvements. Street lighting fixtures are to be owned and operated by Core Electric Cooperative. The developer is responsible for all charges by Core Electric Cooperative until all public improvements associated with the project are conveyed and accepted by the Town.

12.1.5 Other Lighting

1. Railroad crossing lighting will conform to FHWA's Railroad-Highway Grade Crossing Handbook.
2. All bridge or road underpasses, where vehicles, pedestrians, or bicyclists may be present, shall require lighting.

12.2 CONSTRUCTION PLANS AND SPECIFICATIONS

12.2.1 Lighting Plan Content

1. The designer shall show proposed lighting installations on the following sheets of the construction plans.
 - A. Overall Plan
 - B. Plan and profiles
 - C. Signing and Pavement Markings

Section 13

UTILITY INSTALLATION AND COORDINATION

13.0 GENERAL INFORMATION

13.0.0 Scope

This chapter provides the procedures and criteria for the installation and maintenance of public and private utilities within the Town's streets and/or rights-of-way. Coordination of utilities' installation and maintenance is required to ensure the most efficient use of the Town's rights-of-way and to prevent unnecessary disruptions to the public.

13.1 UTILITY FACILITIES CRITERIA

13.1.1 General Requirements

- 1.** All utilities, including water, sanitary sewer and storm sewer, shall be stubbed out to the property line/edge of right-of-way at all locations that are planned for future tie-ins. Storm sewer shall include a manhole at the property line to demarcate the limits of Town maintenance versus private maintenance. Other reasonable stub-outs may be requested by the Town based on sound engineering judgment and knowledge of adjacent Development. Castle Rock Water's criteria manuals shall be adhered to for any conflicts in criteria with this section.
- 2.** Private utility companies shall install all facilities within a Schedule 40 PVC sleeve across all public streets to accommodate future repairs without street cuts. Sleeves shall be installed at a minimum depth of 36" to the top of the pipe from the top of the curb/pavement. A pull string and tracer wire shall be installed directly above the pipe. Sleeve location shall be determined on a case-by-case basis. The Town may require increased depths where street construction may interfere with utilities.
- 3.** For conduits, the sleeve must also terminate into a pull box at each end.
- 4.** All electric service shall be placed underground within the Town. If existing lighting is served by overhead electric service, it may continue to be served in that manner.

5. Trees or shrubs shall not be planted within 10 feet of buried water, sanitary or stormwater utilities. Trees or shrubs shall not be planted over other utilities and/or per the specifications of the utility company.

13.2 UTILITY LOCATION CRITERIA

13.2.1 Public Utilities

The locations of Water mains, Sanitary Sewer mains and Storm Sewer pipe in the public right-of-way are addressed in the Town's design criteria manual for each system.

13.2.2 Natural Gas Mains and Appurtenance

Gas mains shall be located either within the Right-of-Way or in an adjacent easement on the south and west sides of the street to ensure adequate utility separation. If the gas company wishes to run double mains (a main on each side of the street), the location of the double mains in relation to other utilities must be coordinated with and approved by the Town.

13.2.3 Electric, Telephone, Cable and Fiber Optic Lines and Appurtenances

Generally, electric, telephone, cable, fiber optic & any other dry utility lines shall be located within an easement adjacent to the right-of-way or along property lines. Some utilities have franchise agreements with the Town which allow the use of the street right-of-way for location of utilities.

13.3 Utility Appurtenances

1. Utility appurtenances (including but not limited to electric controls, sprinkler controls, valve boxes, inlets, signs, telephone or light poles, switching cabinets, etc.) shall not be placed within the public rights-of-way or easements in a manner that interferes with or obstructs the operation and maintenance of the roadway including driveways and any pedestrian and bicycle facilities. Any utility structures, appurtenances or other physical improvements may not interfere with or obstruct the sight lines of traffic along the roadway or at intersections.

2. The Town of Castle Rock is not responsible for repair of private irrigation within public right of ways. Irrigation sleeves may be placed across the street by permit from the Town. Irrigation sleeves shall be installed per the Town's Construction Specifications
3. Poles, signs and any other above-ground streetscape (except regulatory signs), shall be generally located within 5 feet of the Right-of-Way line or 10 feet from the edge of the travel lane (flowline), whichever is most restrictive.
4. All manhole lids, utility access covers and pull boxes shall be depressed $\frac{1}{4}$ inch to $\frac{1}{2}$ inch below the adjacent finished street surface.

13.4 Subsurface Utility Engineering (SUE)

1. A project requires a SUE if it meets all of the following conditions:
 - A. Involves a construction contract with a public entity, construction in the public ROW or easement, infrastructure that will be dedicated to the Town, or other work as determined by the Town Manager or designee; and
 - B. Primarily involves horizontal construction and does not primarily involve the construction of buildings; and
 - C. Anticipated excavation footprint exceeds two feet in depth and is at least a contiguous 1,000 square feet (excluding fencing and signing projects) or involves utility boring or any utility crossing of public water, sanitary or stormwater systems; and
 - D. Requires the design services of a licensed professional engineer.
2. If all the above criteria are met, subsurface utility engineering documentation shall be required for approval of any Construction Documents and Right-of-Way Permits. Note: The Quality Levels A and B investigation is not required for the initial Construction Document or Right-of-Way Permit submittal to the Town, however Quality Levels A and B are

required for final Town approval. The Town may further specify SUE submittal criteria within the Town's Development Procedure's manual.

3. The following is required for the Town review/approval:
- A. Depiction of utilities on stamped plans in such a way that they meet or exceed ASCE 38 or provide documented reasons from a licensed professional engineer why they do not meet or exceed Quality Level B.
 - B. Meeting or exceed Quality Level A for underground facilities at the point of a potential conflict with water mains and gravity fed systems including sanitary and/or stormwater facilities.
 - C. Test hole location symbols shown of each potential utility conflict.
 - D. A Test Hole Summary Report shall be provided on the plans with:
 - Test Hole Number
 - Utility Type
 - Utility Material
 - Utility Size
 - Approximate Station
 - Approximate Station Offset
 - Depth (Top)
 - Elevation (Top)
 - Cross Sectional View
 - Utility Direction
 - Surface Type
 - Pavement Thickness
 - E. The horizontal accuracy and Vertical Accuracy for QLA and QLB points shall be:
 - QLA: 0.2' Horizontal & 0.1' Vertical
 - QLB: 0.4' Horizontal (Vertical is not applicable)

F. Engineer's Certification Statement is required for the Subsurface Utility Engineering information. See Town of Castle Rock Code Central for Certification Language.

G. Quality-level requirements for subsurface utility engineering vary by project phase and are as follows:

- Project Planning – Quality Level D
- Preliminary Design – Quality Level C
- Final or 100% Design – Quality Level A and B.

The above Quality Levels provide general guidance for project planning. Refer to C.R.S. 9-1.5 for exact Quality Level requirements. Quality Level A is generally required at potential conflicts for water and gravity fed utilities in public right-of-ways and easements. Quality Level A may not be required in areas without any sanitary sewer, storm sewer, other potential utility conflicts, paving or grading conflicts. The highest level of accuracy and comprehensiveness is generally not needed at every point along a utility's path, only where conflicts with design features are most likely to occur. Hence, lesser levels of information may be appropriate at points where fewer conflicts or no conflicts are expected. A Colorado licensed Professional Engineer must determine the appropriate Quality Level based on C.R.S. 9-1.5 and document the reasons why any facilities were not located to the particular Quality Level.

13.4.2 Definitions of the Quality Levels are as follows:

1. Quality Level D is the most basic level of investigation and includes verbal recollections and review of existing records such as as-built drawings, utility system drawings, permit logs, field sketches, site visit logbooks, old surveys, one-call marks, and prior SUE investigations by others.
2. Quality Level C includes surveying those utilities that are visible above ground and use of surface features that indicate subsurface alignment such

as valve covers, fire hydrants, pull boxes, manholes, and telephone pedestals. These should be reconciled to ASCE Quality Level D records.

- 3.** Quality Level B includes the use of geophysical methods to determine the existence and horizontal position of all subsurface utilities. Quality Level B can be assigned to a utility segment or subsurface feature whose existence and position are based upon geophysical methods combined with professional judgment and whose location is tied to the project survey datum.
- 4.** Quality Level A requires precise mapping via exposure of the utility. It provides type, size, condition, and material of the utility. Quality Level A includes using nondestructive excavating equipment at critical points to determine the precise horizontal and vertical position, type, size, condition, material, and any other characteristics of underground utilities. The utility should be vertically and horizontally tied to the project datum.

Section 14

PAVEMENT DESIGN CRITERIA

14.0 GENERAL

All applicants must refer to the most recent version of the Metropolitan Government Pavement Engineers Council (MGPEC) “Pavement Design Standards” for pavement design requirements.

14.0.0 Pavement Life Cycle Costs

1. MGPEC’s Life Cycle Cost Analysis with Recommended Maintenance criteria shall include analysis of various pavement sections and the different types of maintenance treatments and schedules to assess the total lifecycle cost of each option. Maintenance treatments assessed should use contracted market rates. Lowest lifecycle costs should be calculated per the methods identified within the MGPEG standards.

2. The considered pavement sections shall include:
 - A. The identified maintenance schedule with recommended treatments at year points from construction/reconstruction
 - B. Unit cost (\$/lane-mile) for the initial construction, or reconstruction, and each maintenance treatment
 - C. Total lifecycle unit cost (\$/lane-mile/year).
 - D. Total lifecycle unit cost should be reported for other sections and schedules not selected.

14.0.1 Alleys

Public and private alleys require pavement design approved by the Town of Castle Rock.

14.0.2 Alternate Pavement Designs

1. The Town understands the need to consider emerging technologies in pavement design. In light of this, any alternate pavement design will be reviewed and considered with respect to the following criteria:
 - Initial construction cost
 - Life cycle cost
 - Construction delay and impact
 - Facility maintenance and ease of repair
 - Pavement noise, smoothness
 - Industry capacity and local contractor capability
 - Special design provisions such as edge drains behind the curbs to intercept moisture from adjoining development and prevent it from adversely affecting the road subgrade and paving section.

2. Public Works reserves the right to make the pavement type selection using these and/or other criteria on Town funded projects.
3. Warm mix asphalt (WMA) is allowed as an alternate asphalt mixture provided that all material requirements and specification standards are met and as approved by the Town.

Special Drainage Considerations: The design engineer should anticipate the future developed condition of the land adjacent to the roadway when making the paving design recommendations. Even when no shallow groundwater is present in the pre-developed condition it is expected that certain land uses such as single-family homes and projects with irrigated landscaping present the possibility of water entering the road subgrade and adversely affecting the performance and longevity of the pavement. Appropriate design features (underdrains) to stop water from infiltrating into the pavement section are required. Underdrains are required on the downstream side of lot to lot drainage and where substantial open space drainage drains to the street. An additional 1 foot of easement may be required adjacent to the public right-of-way to accommodate underdrain systems or comparable design features. See the Storm Drainage Design and Technical Criteria Manual for further information and requirements on underdrain systems.

14.1 PAVEMENT DESIGN REPORT

All pavement design reports shall be prepared by or under the supervision of, and stamped and signed by, a Professional Engineer licensed in the State of Colorado.

14.1.1 Report Submittal

1. Pavement design reports for new subdivision streets are submitted to the Town. Pavement design reports for Public Works capital projects are submitted to the Public Works Project Manager.
2. If a street is to be built in phases (i.e., the center two lanes are built first, then at some later date, more lanes are added), a new pavement design

investigation and report for the additional lanes will be required if it has been at least two years since the original design was made.

14.1.2 Subgrade and Aggregate Base Course

All prepared subgrade and aggregate base course, including recycled concrete, must meet the material specifications and construction standards presented in the current version of the CDOT Standard Specifications. Aggregate base course shall extend to the back of curb as a minimum. If combination curb, gutter and sidewalk is planned, the prepared subgrade and aggregate base course shall extend to the back of the attached sidewalk.

14.1.3 Proof Rolling

1. The subgrade platform shall be thoroughly proof-rolled to the satisfaction of the Town Construction Inspector prior to placement of base course (or paving) and the base course shall be thoroughly proof-rolled to the satisfaction of the Town Construction Inspector prior to paving. Proof-rolling equipment should meet the requirements in CDOT Standard Specifications.

Section 15

SITE EARTHWORK AND GRADING

15.1 General

15.1.1 Scope

This Section provides general procedures and criteria for the grading and earthwork involved in the development of roadways and public easements in the Town. *Please consult the most recent version of the Town of Castle Rock Temporary Erosion, and Sediment Control (TESC) and Manual.*

15.1.2 Grading and Earthwork Design Criteria

- 1.** Trees and other plants which will remain shall be protected at all times. Grass, weeds, plants, and trees shall be grubbed to at least 6" below present grades.
- 2.** Excavation of all materials shall be performed to the lines and grades shown on the drawings. Suitable material removed from the excavation may be used in the right-of-way or easement as permitted by the Town's inspector. Where material encountered within the right-of-way or easement, is considered unsuitable by the Town's inspector, such material shall be excavated below the grade shown on the drawings and replaced with suitable material.
- 3.** Unused excess material shall be removed from the work site at no cost and requiring no incidental work by the Town.
- 4.** Unless otherwise specified, the material obtained from the excavations will be suitable for use as fill or backfill, provided that all organic material, rubbish, debris, and other objectionable material contained therein is first removed. Rocks, concrete, and bituminous type pavement obtained from the project excavations will be permitted in the backfill or fill with the following exceptions:

- A. The maximum dimension of any piece used shall be 6".
 - B. Pieces larger than 4" shall not be placed within 12" of any structure.
 - C. Pieces larger than 3" shall not be placed within 12" of the subgrade for paving.
 - D. Voids caused by concentrations of large pieces shall not be permitted.
5. Before placing the material for the compacted fills, the subgrade shall be moistened, compacted and scarified, according to the requirements set forth for subsequent layers of fill. The fill material shall be placed in approximately horizontal, evenly-distributed layers not exceeding 8" in depth. Each layer of fill material should cover the full length and width of the entire area to be filled before the next higher layer of material is placed. After each layer of fill has been spread, worked and properly moistened, it shall be compacted to produce the specified density. Each layer should be keyed one layer to another. Grading shall be performed so that the finished surfaces are in uniform planes with no abrupt breaks in the surfaces.
6. Each layer of fill shall be moistened as necessary. Material, which is over optimum moisture content in amounts to cause "pumping" or "heaving", shall not be incorporated into the work. In case any layer of fill is too wet to attain the specified density, the compacting work shall be delayed until the material has dried sufficiently to attain said density. Moisture content shall not vary on the dry side by more than 2.0% of optimum.
7. Hauling material on or across existing roadways using scrapers or other non-wheeled heavy equipment will only be allowed on a case-by-case basis. Additional requirements related to protection and maintenance of the existing roadway(s) will be required before approval is granted. For further information on temporary roadway crossings see the Temporary Erosion and Sediment Control (TESC) Manual.

Section 16

WIRELESS COMMUNICATION FACILITIES

16.1 General Information

1. These guidelines are intended to assist applicants and reviewers of small cell facilities to better meet the requirements established in Chapter 17.60 – Wireless Communication Facilities (WCFs) of the Town of Castle Rock Municipal Code. Due to changes in technology and site-specific design constraints, these guidelines will not address all possible scenarios but is intended to cover most anticipated design types.
2. The applicant is expected to have reviewed the approved Master License Agreement, Chapter 17.60 of the Town’s Municipal Code, the applicable sections of the Town’s Transportation Design Criteria Manual and these Small Cell Design Criteria in detail before proceeding with formal submittal of WCF plans. This will help the applicant to move through the Town’s approval process more efficiently.
3. Regarding locations proposed in residential neighborhoods: Except for small cell facilities located within collector or arterial designated right-of-way, an applicant for a new WCF shall demonstrate a diligent effort has been made to locate the WCF in other areas and due to valid considerations including, without limitation, physical constraints, or technological feasibility, no appropriate location is available.

16.2 Installation Hierarchy

1. To avoid visual clutter and maximize the joint use of existing infrastructure in the right-of-way, the Town has established colocation and siting preferences for small cell sites in the Town code. The order of preference shall be:
 - A. Colocation or modification to an existing small cell in the right-of-way
 - B. An existing street light pole (Core Electric Cooperative first and then Town owned)

- C. A new freestanding streetlight
 - D. A new freestanding pole
 - E. Town owned traffic signal pole
2. A given small cell may be required to be designed and constructed to accommodate at least two (2) wireless service providers on the same small cell pole unless an alternative design is approved by the Town. Upon request of the Town, the small cell owner or operator shall provide evidence explaining why colocation is not possible on a particular small cell pole.

16.3 Small Cell Plan Review Submittal Requirements

16.3.1 A complete submittal includes the following:

- 1. A typewritten legal description and survey for each location signed and sealed by a surveyor registered in the State of Colorado
- 2. A narrative describing consistency and compliance with the Town's Code, the Transportation Design Criteria Manual and the Town Small Cell Design Guidelines
- 3. Each site location included with the submittal shall be provided in a tabular form that provides the following:

Wireless Site ID No. and Address	Street Name / Intersection and Quadrant Pole is located on	State Plane Coordinates		Existing Pole Type	Existing Pole Height
		Easting (X)	Northing (Y)		

- 4. An exhibit detailing existing utility or traffic poles height within 500 feet of the proposed location. This exhibit should also show that the 600-foot minimum distance to the nearest other small cell has been met, unless the WCF is deployed on or is a replacement pole in the public right-of-way.

5. For all existing poles, whether Core Electric Cooperative or Town owned, documentation verifying the location is eligible for use as a small cell facility
6. Plans showing site plan, photo simulation, elevation / plan views of the small cell facility, engineering design, and specifications for installation of the small cell facility, including the location of radios, antenna facilities, transmitters, equipment shelters, cables, conduit, point of demarcation, backhaul solution, electrical distribution panel, electric meter, electrical conduit and cabling, location of any potholes, pullboxes and all other associated equipment. The design documents shall also include specifications and detail drawings on all replacement pole designs and caissons. For replacement traffic signal poles, this includes an engineering analysis showing that the given small cell facility location meets specific loading criteria and required AASHTO standards. Such information shall be prepared by a Professional Engineer licensed in the State of Colorado.
 - A. The plans shall show existing sidewalk size, existing utilities per subsurface utility legal requirements, existing trees and other existing improvements.
 - B. The plans shall include a separate sheet showing traffic control signs and equipment.
7. A signal interference letter and analysis from a qualified radio frequency engineer certifying, all WCFs that are the subject of the application shall be designed, sited and operated in accordance with applicable federal regulations addressing radio frequency interference, and that a technical evaluation of existing and proposed facilities indicates no potential interference problems.
8. A radio frequency emissions statement and the proposed notification signage to be posted at the small cell facility location
9. A completed Town of Castle Rock small cell facility application submittal checklist
10. Upon receipt of a full Supplemental Site License submittal, the Town shall process the request within ninety (90) days or as determined by Development Services Department, or within such other time as designated by applicable law

16.4 Technical / Site Requirements

16.4.1 General requirements

The following design guidelines are in support of or in addition to those outlined in Section 17.60.050 of the Municipal Code and the applicable sections (i.e. lighting) of the Transportation Design Criteria Manual. The intent of these requirements is to minimize the roadside visual clutter of utility infrastructure as much as possible, and to be as consistent as possible with the “look” of existing infrastructure.

- 1.** All WCF equipment and cabling shall be internal to the pole structure and shrouded from view, this includes any equipment at ground level.
- 2.** All pole base installations should be consistent with surrounding utility base designs and shall be smooth and straight with limited flat surfaces at the transition between the base cabinet and the upper pole.
- 3.** All cantenna transitions shall be smooth (see center below) or tapered (see right below) between the upper pole and the cantenna attachment and shall inconspicuously transition from the upper pole.
- 4.** Any replacement pole shall be in the same relative position and alignment as the pre-existing pole.
- 5.** All replacement poles shall comply with AASHTO Roadside Design guidelines and shall not be sited where sight distances for vehicular, bicycle or pedestrian travel would be impeded. Compliance to these guidelines shall be documented by engineering letter or on the plans.
- 6.** All replacement poles shall be placed to allow for safe use of the sidewalk in compliance with ADA standards. Separation of the structure to edge of sidewalk shall meet the Town’s standards. Replacement poles shall not interfere with roadway pavement, public utilities, curb, or supporting subsurface structure.
- 7.** The replacement pole shall be structurally adequate to support the items on the pre-existing structure (i.e. light, signal heads etc.), at least two small cell installations, and maintain 10% remaining structural capacity. Compliance to

these guidelines shall be documented with structural calculations and in a stamped engineering evaluation letter or on the plans.

8. The street light fixture on any replacement pole shall be placed in the same relative position to the roadway as the previous light fixture.
9. The applicant will be responsible for electric, and any other utility service used or consumed in connection with its small cell facilities. In no event will the applicant or any user of the small cell facilities at any wireless site secure its utilities by sub-metering from the Town.
10. When a new small cell facility is proposed in a neighborhood or area with unique streetlight characteristics, the proposed design shall closely match the existing streetlight aesthetics. Unique assemblies may include mast arms, decorative pole bases, architectural luminaires, mounting heights, pole colors, etc., that deviate from typical Town standards.
11. Typically, the new or replacement pole color shall match the existing or adjacent streetlights.
12. Any existing luminaire shall be upgraded to LED and meet the Town's streetlight requirements.
13. When placed adjacent to residential property, the small cell shall be placed in proximity to a common property line between adjoining residential properties, such that it minimizes visual impacts equitably among adjacent and nearby properties.

16.4.2 Core Electric Cooperative or Town owned streetlight

1. All cabling for the small cell facility equipment must be physically separated from the cabling needed for the Town maintained streetlight and must not interfere with access to or operation of any street light equipment

16.4.3 New freestanding pole or streetlight

1. If proposing a freestanding pole, justification must be provided and approved by the Town that documents why an existing pole location cannot be used.
2. Any proposal for a new standalone pole shall consider the need for additional street lighting in the area. A photometric study of the area, including existing light levels and modeling the post-construction lighting levels must be submitted with the design plan package.

16.4.4 Town owned traffic signal pole

1. Traffic signal poles already supporting police equipment, closed circuit television cameras and Town owned radios are not eligible to be considered for small cell facilities
2. All cabling for the small cell facility equipment must be physically separated from the cabling needed for the Town maintained traffic signal equipment and must not interfere with access to or operation of any traffic signal equipment
3. Per the MUTCD, any devices that interfere with safe operation of the traffic signal will not be permitted or will be removed from the traffic signal pole.

16.5 Permits, Construction, Operation and Maintenance in Right-of-Way**16.5.1 Right-of-Way Permit**

1. Submittal Requirements:
 - A. The Town utilizes an on-line program for applying for Right-of-Way permits. See CRGOV.COM website for links and application instructions.
 - B. Each small cell facility site will require its own permit unless the sites are grouped in such a way that will allow for a single permit at the

discretion of the Town. The Town may require the WCF owner to apply for the ROW Permit online.

- C. Building Permit form, completed and signed for electrical and structural installations.
- D. Permit fee (inspection and use tax) (see Development Services Fee Schedule)
- E. Approved Haul Route (if needed)
- F. Street / Lane Closure Application and traffic control plan (if needed). A traffic control plan (TCP) shall meet all the requirements of the Manual of Uniform Traffic Control Devices (MUTCD), latest revision, and shall be prepared by a certified ATSSA traffic control supervisor or licensed professional engineer qualified in transportation engineering.
- G. For small cell installations using Town traffic signal poles, the personnel involved in the installations work must hold at least a Level II IMSA Traffic Signal certification to demonstrate comprehension of traffic signal operations and construction. Certification cards that document these certifications may be requested by the Town.
- H. Performance Surety with Town approved language for public improvements, if applicable.

16.5.2 Maintenance

1. Any installation or servicing of equipment located on traffic signal poles or Town owned streetlights shall be coordinated with the Town's Traffic Engineering Division a minimum of three business days in advance and may necessitate a ROW permit. A Street / Lane Closure application and traffic control plan will be required for any maintenance work that requires a lane closure.
2. Any public rights-of-way, public property or private property that is disturbed or damaged during, or as a result of, the construction, reconstruction, repair, replacement, removal, relocation, operation or maintenance of any WCFs by the applicant shall be promptly repaired to the reasonable satisfaction of the Town by the applicant at its sole expense. The

applicant must provide written notification to the Town within 24 hours of the damage and report corrective activities after completion to the Town.

16.6 Additional Requirements

1. Adjacent property owner notification must be sent to all property owners within 300 feet of the installation of a new freestanding pole or new streetlight or new WCF. Please send a scanned copy of the certificates of mailing to the Town of Castle Rock Engineering Division before receiving your approved right-of-way permit.
2. Applicants are strongly encouraged to meet with abutting property owners, homeowners' associations, and metropolitan districts in the vicinity of the proposed wireless facility or wireless facility network to discuss design and placement options prior to and during the application process.

Appendix A

TYPICAL STREET CROSS SECTIONS

Appendix B

TRAFFIC CALMING EXAMPLES



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: File #: PWC 2023-010

To: Members of the Public Works Commission

From: Megan Bednar, Traffic Maintenance Superintendent

A Resolution Approving a Service Agreement Between the Town of Castle Rock and Colorado Barricade for 2023 Pavement Marking Maintenance

Executive Summary

The purpose of this memo is to request a recommendation of approval for the Resolution for the Service Agreement with Colorado Barricade, and the allocation of funds to maintain the Town's pavement markings.

The Town's approach to maintaining pavement markings is the same as our approach to maintaining all of our transportation assets: To maximize value for the community with our available dollars. This value includes:

- High Safety
- Low Total Lifecycle Cost
- Reliability
- Low Downtime
- Low Environmental Impacts

As the pavement markings reach the end of their lifespan, they are replaced to maintain the visibility of the lines for the safety of all users within the transportation network. We also strive to select the right materials that offer the lowest total lifecycle cost. The Pavement Marking Maintenance program meets the Town's Vision Statement goals of:

- Providing outstanding community services including police, fire, emergency medical, parks, recreation, water and transportation.
- Ensure a Town government accountable for its vision, mission and values.

Maintenance work generally consists of re-application of markings, grinding, thermo plastic installation and the installation of new pavement markings. Pavement marking maintenance work will be performed at various locations around Town with a focus on long lines on collector and arterial roadways as well as stop bars, crosswalks and arrows at signalized intersections.

There are two rounds of striping, with the first round occurring in the Spring and the second occurring in the Fall. The first round incorporates the re-application of markings to all long lines and markings at signalized intersections. The second round allows for to all long lines and markings at signalized intersections. The second round allows for identified necessary secondary applications, and for locations that were not marked in the 1st round due to other surface maintenance as a part of the Pavement Maintenance Program or Capital Improvement Projects. These two rounds of maintenance allow for responsible planning, coordination and budget management.

All maintenance activities are summarized on the 2023 Pavement Marking Maintenance map (**Attachment A**). These maps do not include roads that are restriped under the Pavement Maintenance Program's (PMP) contracts.

A formal RFP process was followed with three respondents. Colorado Barricade provided the lowest bid in 2023, and has competently provided these services in the past.

Discussion

In January 2023, staff released a request for proposals to obtain a new contractor to complete the Town's pavement marking maintenance. Three responses were received from qualified contractors. The following provides a summary of the pricing received in each contractor's proposal.

Table 1. Contractor Cost Proposal Comparison

Tasks		Unit Price	Unit Price	Unit Price
	Est. Quantity	Colorado Barricade	Kolbe Striping	American Striping
4" Solid or Broken White Paint	30,000 SF	\$0.50	\$0.65	\$0.90
6" Solid or Broken White Paint	330,000 SF	\$0.50	\$0.65	\$0.90
4" Solid or Broken Yellow Paint	230,000 SF	\$0.50	\$0.65	\$0.90
6" Solid or Broken Yellow Paint	1,000 SF	\$0.50	\$0.65	\$0.90
Lane Lines White or Yellow Epoxy	15,000 SF	\$1.50	\$1.95	\$2.00
6" Solid or Broken white preformed thermoplastic groove inlay	1,000 SF	\$14.00	\$25.50	\$18.00
6" Solid or Broken yellow preformed thermoplastic groove inlay	1,000 SF	\$14.00	\$25.50	\$18.00
Pavement marking (white paint) (word/symbol) Signalized Intersection	1,000 SF	\$9.00	\$6.00	\$5.00
Pavement Marking (white thermo 90 mil) (Xwalk/Stop Bar) Signalized Intersection	10,000 SF	\$5.00	\$5.50	\$3.00
Pavement Marking (white thermo 90 mil) (word/Symbol) Signalized Intersection	2,500 SF	\$22.00	\$22.00	\$20.00
Pavement Marking (white thermo 90 mil) (Xwalk/Stop Bar) Signalized Intersection	5,000 SF	\$14.00	\$15.00	\$18.00
Total	626,500 SF	\$530,000.00	\$655,400.00	\$772,900.00

Based on the proposals received, staff is recommending a service agreement for equipment and services between the Town and Colorado Barricade. This service agreement with Colorado Barricade has a “not to exceed” price of \$377,000 per year. There is a possibility for two additional annual renewals under the agreement.

The overall bid total from Colorado Barricade is \$530,000.00 which is the cost if the contractor paints all long lines in Town once, plus a secondary round of long line painting in the Fall following the Public Work’s Asset Management Plan. Through partnership with the PMP, their contract covers restriping on all roads that are improved within the PMP year where striping is removed. Therefore, this allows for necessary marking work to be completed across Town within the service agreement with Colorado Barricade with a “not to exceed” price of \$377,000 per year. There is a possibility for two additional annual renewals under the agreement.

The bid amounts shown are based on this service contract conducting all marking operations included within the Town’s PMP work. Since the budgeted account for this service contract is \$377,000 the marking work associated with the PMP operations will be covered by those respective accounts. All marking efforts recommended in our AMP will be addressed by these two efforts.

Budget Impact

Funds from the 2023 budget to pay for services rendered under this service agreement would be paid from the Pavement Striping Street Repair & Maintenance - (Account No. 120-3120-431.40-35). The 2023 budget in this account is \$377,000, and can fully support this service agreement amount of \$377,000. No contingency will be included with this contract.

Staff Recommendation

Staff recommends that the Public Works Commission forward a recommendation of approval to Town Council for approving the Resolution for the service agreement with Colorado Barricade for the maintenance of the Town's Pavement Marking Maintenance Program.

Proposed Motion

"I move that the Public Works Commission recommend that Town Council approve the attached Resolution as introduced by title."

Alternative motions:

"I move to recommend that Town Council approve the attached Resolution as introduced by title, with the following conditions: (list conditions)"

"I move to continue this item to the Public Works Commission meeting on (date) to allow additional time to (list information needed)"

Attachments

Contract
Attachment A: 2023 Pavement Marking Maintenance Map



**TOWN OF CASTLE ROCK
SERVICES AGREEMENT
(2023 Pavement Marking Maintenance)**

DATE: _____.

PARTIES: **TOWN OF CASTLE ROCK**, a Colorado municipal corporation, 100 N. Wilcox Street, Castle Rock, Colorado 80104 (the "Town").

BARRICADE HOLDINGS LLC d/b/a COLORADO BARRICADE CO, a Delaware limited liability company, 2295 S Lipan Street, Denver Colorado 80223 ("Contractor").

RECITALS:

- A. The Town issued a Request for Bids from qualified contractors with expertise in pavement marking maintenance services.
- B. Contractor timely submitted its Bids.
- C. The Town wishes to engage Contractor on an on-call basis to provide the services more fully described in the following Agreement and Exhibits.

TERMS:

Section 1. Scope of Services. Contractor shall provide pavement marking maintenance services in accordance with the scope of services attached as ***Exhibit 1*** ("Services").

Section 2. Payment. Contractor shall invoice Town upon completion of the Services rendered in accordance with the rate and fee scheduled identified in ***Exhibit 1***. The Town shall pay such invoices within 30 days receipt of such invoice. In no event shall the cumulative payment to Contractor exceed **\$377,000.00**, unless authorized in writing by Town.

Section 3. Term/Renewal. Contractor shall commence the Services **April 10, 2023** and complete the Services by **December 31, 2023**. Provided, this Agreement may be renewed by the parties under the same terms and conditions for up to two additional one-year terms by executing the Renewal Agreement, attached as ***Exhibit 2*** ("Renewal Term"). Contractor shall devote adequate resources to assure timely completion of the Services. Contractor shall perform the Services under this Agreement using a standard of care, skill and diligence ordinarily used by reputable professionals performing under circumstances similar to those required by this Agreement.

The Town shall have the right to terminate this Agreement at any time with 30 days written notice to Contractor. The Town's only obligation in the event of termination shall be payment of



fees and expenses incurred up to and including the effective date of termination. Contractor shall turn over all work product produced up to the date of termination.

Section 4. Annual Appropriation. The continuance of this Agreement is contingent upon the appropriation of funds to fulfill the requirements of the Agreement by the Town. If the Town fails to appropriate sufficient monies to provide for the continuance of the Agreement, the Agreement shall terminate on the final day preceding the date of the beginning of the first fiscal year for which funds are not appropriated. The Town's only obligation in the event of termination shall be payment of fees and expenses incurred up to and including the effective date of termination.

Section 5. Subcontractors. Contractor may utilize subcontractors to assist with specialized works as necessary to complete the Services. Contractor will submit any proposed subcontractor and the description of their services to the Town for approval.

Section 6. Assignment. This Agreement shall not be assigned by Contractor without the written consent of the Town.

Section 7. Notice. Any notice required or permitted by this Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent by certified mail or registered mail, postage and fees prepaid, addressed to the party to whom such notice is to be given at the address set forth on the first page of this Agreement, or at such other address as has been previously furnished in writing to the other party or parties. Such notice shall be deemed given when deposited in the United States mail.

Section 8. Insurance. Contractor agrees to procure and maintain, at his own cost, the following policy or policies of insurance. Contractor shall not be relieved of any liability, claims, demands or other obligations assumed pursuant to this Agreement by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

A. Contractor shall procure and maintain, and shall cause each subcontractor of the Contractor to procure and maintain a policy with the minimum insurance coverage listed below. Such coverage shall be procured and maintained with forms and insurers acceptable to the Town. All coverage shall be continuously maintained from the date of commencement of services hereunder. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

1. Workers Compensation insurance to cover obligations imposed by the Workers Compensation Act of Colorado and any other applicable laws for any employee engaged in the performance of Work under this contract, and Employer's Liability insurance with minimum limits of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) each accident, FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease-policy limit, and FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease-each employee.



2. Comprehensive General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including for contractual and employee acts), blanket contractual, independent contractors, products, and completed operations. The policy shall contain a severability of interests provision.

3. Comprehensive Automobile Liability Insurance with minimum combined single limits for bodily injury and property damage of not less than ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate with respect to each of Contractor's owned, hired and/or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests provision.

B. The policies required above, except Workers' Compensation insurance, Employers' Liability insurance and Professional Liability insurance shall be endorsed to include the Town, its officers and employees, as additional insureds. Every policy required above, except Workers' Compensation shall be primary insurance, and any insurance carried by the Town, its officers, or its employees, shall be excess and not contributory insurance to that provided by Contractor. The additional insured endorsement for the Comprehensive General Liability insurance required above shall not contain any exclusion for bodily injury or property damage arising from completed operations. The Contractor shall be solely responsible for any deductible losses under each of the policies required above.

C. Certificates of insurance shall be completed by Contractor's insurance agent and submitted at the time of execution of this Agreement as ***Exhibit 3*** as evidence that policies providing the required coverage, conditions and minimum limits are in full force and effect, and shall be subject to review and approval by the Town. Each certificate shall identify the Project and shall provide that coverage afforded under the policies shall not be cancelled, terminated or materially changed until at least 30 days prior written notice has been given to the Town. If the words "endeavor to" appear in the portion of the certificate addressing cancellation, those words shall be stricken from the certificate by the agent(s) completing the certificate. The Town reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

D. Failure on the part of Contractor to procure or maintain policies providing the required coverage, conditions, and minimum limits shall constitute a material breach of contract upon which at the Town's discretion may procure or renew any such policy or any extended connection therewith, and all monies so paid by the Town shall be repaid by Contractor to the Town upon demand, or the Town may offset the cost of the premiums against any monies due to Contractor from the Town.

Section 9. Colorado Governmental Immunity Act. The parties understand and agree that the Town is relying on, and does not waive or intend to waive by any provision of this contract, the monetary limitations (presently \$424,000 per person, \$1,195,000 for two or more persons, per occurrence) or any other rights, immunities, and protections provided by the Colorado



Governmental Immunity Act, §24-10-101, *et seq.*, C.R.S., as from time to time amended, or otherwise available to Town, its officers, or its employees.

Section 10. Indemnification. Contractor expressly agrees to indemnify and hold harmless Town or any of its officers or employees from any and all claims, damages, liability, or court awards including attorney's fees that are or may be awarded as a result of any loss, injury or damage sustained or claimed to have been sustained by anyone, including, but not limited to, any person, firm, partnership, or corporation, to the extent caused by the negligent acts, errors or omissions of Contractor or any of their employees or agents in performing work pursuant to this Agreement. In the event that any such suit or action is brought against Town, Town will give notice within ten (10) days thereof to Contractor.

Section 11. Delays. Any delays in or failure of performance by any party of his or its obligations under this Agreement shall be excused if such delays or failure are a result of acts of God, fires, floods, strikes, labor disputes, accidents, regulations or orders of civil or military authorities, shortages of labor or materials, or other causes, similar or dissimilar, which are beyond the control of such party.

Section 12. Additional Documents. The parties agree to execute any additional documents or take any additional action that is necessary to carry out this Agreement.

Section 13. Entire Agreement. This Agreement represents the entire agreement between the parties and there are no oral or collateral agreements or understandings. This Agreement may be amended only by an instrument in writing signed by the parties. If any other provision of this Agreement is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Agreement shall continue in full force and effect.

Section 14. Time of the Essence. Time is of the essence. If any payment or any other condition, obligation, or duty is not timely made, tendered or performed by either party, then this Agreement, at the option of the party who is not in default, may be terminated by the non-defaulting party, in which case, the non-defaulting party may recover such damages as may be proper.

Section 15. Default and Remedies. In the event either party should default in performance of its obligations under this agreement, and such default shall remain uncured for more than 10 days after notice of default is given to the defaulting party, the non-defaulting party shall be entitled to pursue any and all legal remedies and recover its reasonable attorney's fees and costs in such legal action. In addition, no Party will be entitled to lost profits, economic damages, or actual, direct, incidental, consequential, punitive or exemplary damages in the event of a default.

Section 16. Waiver. A waiver by any party to this Agreement of the breach of any term or provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach by either party.



Section 17. Governing Law. This Agreement shall be governed by the laws of the State of Colorado in the Douglas County District Court.

Section 18. Independent Contractor. Contractor has completed the Affidavit of Independent Contractor Status, attached as ***Exhibit 4***, and submitted same at the time of execution of this Agreement. In addition to the Affidavit, Contractor and the Town hereby represent that Contractor is an independent contractor for all purposes hereunder. Contractor represents and warrants that they are free from the Town's direction and control in the performance of their work or services and that they have an independent business doing the specific type of work or services which are the subject of this Agreement. More specifically, Contractor represents and warrants that the Town does not control what work or services they will perform or the manner in which such work or services will be performed. As such, Contractor is not covered by any worker's compensation insurance or any other insurance maintained by Town except as would apply to members of the general public. Contractor shall not create any indebtedness on behalf of the Town.

Section 19. No Third Party Beneficiaries. It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to Town and Contractor, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on such Agreement. It is the express intention of the parties that any person other than Town or Contractor receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

Section 20. Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which together shall be deemed to constitute one and the same instrument. Each of the Parties hereto shall be entitled to rely upon a counterpart of the instrument executed by the other Party and sent by electronic mail.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jason Gray, Mayor

Approved as to form:

Approved as to content:

Michael J. Hyman, Town Attorney

David L. Corliss, Town Manager

CONTRACTOR:

BARRICADE HOLDINGS LLC d/b/a COLORADO BARRICADE CO

By: _____

Its: _____

Chief Estimator



EXHIBIT 1

SERVICES AND FEE SCHEDULE

Contractor will paint existing street markings for all Town roadways and replace thermo markings.



**Town of Castle Rock, Colorado
Annual Contract for Pavement Marking**

BID SCHEDULE A

Item #	Est. Quantity	Unit	Item Description	Unit Price	Quantity Price
1	30,000	S.F.	4" Solid or Broken White Paint	\$ 00.50	\$ 15,000.00
2	330,000	S.F.	6" Solid or Broken White Paint	\$ 00.50	\$165,000.00
3	230,000	S.F.	4" Solid or Broken Yellow Paint	\$ 00.50	\$ 115,000.00
4	1,000	S.F.	6" Solid or Broken Yellow Paint	\$ 00.50	\$ 500.00
5	15,000	S.F.	Lane Lines White & Yellow Epoxy Paint	\$ 1.50	\$ 22,500.00
6	1,000	S.F.	6" Solid or Broken White Preformed Thermoplastic Groove Inlay	\$ 14.00	\$ 14,000.00
7	1,000	S.F.	6" Solid or Broken Yellow Preformed Thermoplastic Groove Inlay	\$ 14.00	\$ 14,000.00
8	1,000	S.F.	Pavement marking (White Paint) (Word / Symbol) Signalized Intersection	\$ 9.00	\$ 9,000.00
9	10,000	S.F.	Pavement marking (White Paint) (Xwalk / Stop bar) Signalized Intersection	\$ 5.00	\$50,000.00
10	2,500	S.F.	Pavement marking (White Thermo 90 mil) (Word / Symbol) Signalized Intersection	\$ 22.00	\$ 55,000.00
11	5,000	S.F.	Pavement marking (White Thermo 90 mil) (Xwalk / Stop bar) Signalized Intersection	\$ 14.00	\$ 70,000.00

TOTAL AMOUNT BID (Items 1 through 11)	\$530,000.00
--	---------------------

TOTAL AMOUNT BID IN WORDS: Five Hundred and Thirty Thousand Dollars

NOTE: The above quantities are pure estimates based on the best available historical information that the Town has to go by. Actual quantities are expected to fluctuate and these estimates should not be construed as guaranteed minimums.

ALTERNATE BID ITEMS: Anticipated quantity is unknown. The Town may choose to utilize the following material to assess durability for future applications. Material may be asked to be applied for any of the above striping descriptions.

Item #	Est. Quantity	Unit	Item Description	Unit Price	Quantity Price
1a	T.B.D.	Es	Preformed Thermoplastic (Arrows-including combo, turn & thru, shark's teeth etc. 90 mil)	\$ 600.00	\$
2a	T.B.D.	S.F.	Removal of Pavement Markings	\$ 3.25	\$
3a	T.B.D.	S.F.	Preformed Plastic 380 IES contrast tape	\$ 35.00	\$
4a	T.B.D.	S.F.	Pre-Form Plastic 90 mil Pavement Marking ground in 8" lane line with contrast border	\$ 35.00	\$

NOTE: It is important that the selected contractor can schedule the Town's Spring marking task not later than last week day in June 2023/2024.

Please list the not later than date that crews can be scheduled to mark Town roads: Last week day in November 2023/2024.



EXHIBIT 2

RENEWAL OF TOWN OF CASTLE ROCK SERVICES AGREEMENT

(Click or tap here to enter text.)

DATE: _____

PARTIES: **TOWN OF CASTLE ROCK**, a Colorado municipal corporation, 100 N. Wilcox Street, Castle Rock, Colorado 80104 (Town).

CLICK OR TAP HERE TO ENTER TEXT., Click or tap here to enter text. ("Contractor").

RECITALS:

A. The Town and Contractor are parties to the Town of Castle Rock Click or tap here to enter text. Agreement () dated Click or tap here to enter text. ("Agreement") and attached as **Exhibit A**.

B. The term of the Agreement expires Click or tap here to enter text.. The parties wish to renew the Agreement under the same terms and conditions for an additional one-year term, expiring on Click or tap here to enter text..

C. The parties desire to amend the Agreement to incorporate a new rate/fee schedule for 20____, attached as **Exhibit B** and extend the term of the Agreement.

TERMS:

Section 1. Renewal of Agreement. The Agreement shall be renewed for an additional one-year term, expiring Click or tap here to enter text..

Section 2. Amendment. The rate and fee schedule attached as **Exhibit B** to this Renewal Agreement is incorporated herein and made a part of the Agreement.

Section 3. Amendment. The updated Certificate of Insurance for the Contractor/Consultant for 20__ is attached as **Exhibit C** to this Renewal Agreement is incorporated herein and made a part of the Agreement.

Section 4. Remaining Terms. All other terms and conditions set forth in the Agreement shall remain in full force and effect, including the rights to early termination.

[SIGNATURE BLOCK HERE]



EXHIBIT 3

CERTIFICATE OF INSURANCE

EXHIBIT 4

**TOWN OF CASTLE ROCK
AFFIDAVIT OF INDEPENDENT CONTRACTOR STATUS**

I, Rusty Reynolds, an authorized representative of **BARRICADE HOLDINGS LLC d/b/a COLORADO BARRICADE CO ("Colorado Barricade")**, holding legal authority to sign this Affidavit declare under oath that I am 18 years or older and have the capacity to sign this Affidavit.

In accordance with Section 8-70-115, C.R.S., I certify the following:

- With respect to the Agreement, Colorado Barricade represents and warrants that it is its express intention to be employed as an independent contractor of the Town of Castle Rock (the "Town") for purposes of performing the work or services which are the subject of the Agreement. Colorado Barricade understands and confirms that the Town reasonably relied on this intention in entering into the Agreement.
- The Town does not require Colorado Barricade work exclusively for the Town, except that Colorado Barricade may choose to work exclusively for the Town for a finite period of time specified in the document.
- The Town does not establish a quality standard for the work or services performed pursuant to the Agreement, except that the Town may provide plans and specifications regarding the work but cannot oversee the actual work or provide instruction as to how the work is performed.
- The Town does not pay a salary or hourly rate but rather a fixed or contract rate, as noted in the terms and conditions of the Agreement, and any Exhibits made part of the Agreement.
- The Town cannot terminate the work or services performed during the contract period unless otherwise agreed to in the terms and conditions of the Agreement.
- Colorado Barricade is not provided with anything, if at all, more than minimal training from the Town.
- The Town does not provide me with tools or benefits for the performance of the work or services which are the subject of the Agreement, except materials and equipment may be supplied.



- The Town does not dictate the time of performance, except that a completion schedule and a range of mutually agreeable work hours may be established in the Agreement.
- The Town issues checks payable to Colorado Barricade, a party to the Agreement; and the Town does not combine their business operations in any way with Colorado Barricade's business, but instead maintains such operations as separate and distinct.
- Colorado Barricade understands that if a professional license to practice a particular occupation under the laws of the State of Colorado requires the exercise of a supervisory function with regard to the work of services performed under this Agreement, such supervisory role shall not affect the independent contractor relationship with the Town.
- **COLORADO BARRICADE UNDERSTANDS THAT NEITHER COLORADO BARRICADE NOR ITS EMPLOYEES ARE ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS OF THE TOWN.**
- **COLORADO BARRICADE UNDERSTANDS THAT IT IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THE AGREEMENT.**

CONTRACTOR

BARRICADE HOLDINGS LLC d/b/a COLORADO BARRICADE CO

By: _____

Name Rusty Reynolds

STATE OF COLORADO)

) ss.

COUNTY OF Denver)

HEATHER SUE JACKSON
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144000511
MY COMMISSION EXPIRES 01/06/2026

The foregoing instrument as acknowledged before me this 20th day of February,
2023 by Rusty Reynolds as Chief Estimator of the above mentioned Contractor.

Witness my official hand and seal.

My commission expires:

Heather Sue Jackson
Notary Public

Request for Taxpayer Identification Number and Certification

► Go to www.irs.gov/FormW9 for instructions and the latest information.

Give Form to the
requester. Do not
send to the IRS.

Print or type. See Specific Instructions on page 3.	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. Barricade Holdings LLC	
	2 Business name/disregarded entity name, if different from above Colorado Barricade Company	
	3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes. <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input checked="" type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► P Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) ►	
	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ <small>(Applies to accounts maintained outside the U.S.)</small>	
	5 Address (number, street, and apt. or suite no.) See instructions. 2295 S. Lipan Street	Requester's name and address (optional)
	6 City, state, and ZIP code Denver, CO 80223	
	7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number									
				-					
or									
Employer identification number									
4	6		-	3	0	0	0	9	8 1

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign
Here

Signature of
U.S. person ►

Date ► **1.4.23**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding*, later.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
7/1/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER IMA, Inc. - Colorado Division 1705 17th Street, Suite 100 Denver CO 80202	CONTACT NAME: IMA Denver Team	
	PHONE (A/C, No, Ext): 303-534-4567	FAX (A/C, No):
E-MAIL ADDRESS: DenAccountTechs@imacorp.com		
INSURED Barricade Holdings LLC dba: Colorado Barricade Company 2295 S Lipan Street Denver CO 80223	INSURER(S) AFFORDING COVERAGE	
	INSURER A: Federal Insurance Company	
	INSURER B: Executive Risk Indemnity Inc.	
	INSURER C: Travelers Property Casualty Company of America	
	INSURER D: Chubb Insurance Company of Canada	
	INSURER E:	
INSURER F:		

COVERAGES **CERTIFICATE NUMBER:** 1719746673 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

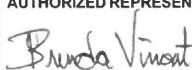
INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> BI/PD DED: \$25K GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:			54310238	7/1/2022	7/1/2023	EACH OCCURRENCE \$2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$100,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$2,000,000 GENERAL AGGREGATE \$4,000,000 PRODUCTS - COMP/OP AGG \$4,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			54310237	7/1/2022	7/1/2023	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 0			93652732	7/1/2022	7/1/2023	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 \$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	54310239	7/1/2022	7/1/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
C	Leased & Rented Equipment			QT-630-4H598808-TIL-22	7/1/2022	7/1/2023	Limit \$250,000 Deductible \$1,000 SPC Form/RC

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Professional Liability Coverage: Policy #PCXB-5018555-0722
 Effective Dates: 07/01/22 - 07/01/23 Insurer: Berkley Assurance Co
 \$3,000,000 Aggregate; \$3,000,000 Each Occurrence; \$15,000 Deductible
 Retro Date: 03/18/2016

Pollution Liability Coverage: Policy #PCXB-5018555-0722
 Effective Dates: 07/01/22 - 07/01/23 Insurer: Berkley Assurance Co
 \$3,000,000 Aggregate; \$3,000,000 Each Occurrence; \$15,000 Deductible
 See Attached...

CERTIFICATE HOLDER

Town of Castle Rock 100 North Wilcox Street Castle Rock CO 80104-0000 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

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ADDITIONAL REMARKS SCHEDULE

Page 1 of 1

AGENCY IMA, Inc. - Colorado Division		NAMED INSURED Barricade Holdings LLC dba: Colorado Barricade Company 2295 S Lipan Street Denver CO 80223	
POLICY NUMBER		EFFECTIVE DATE:	
CARRIER	NAIC CODE		

ADDITIONAL REMARKS

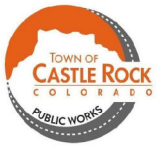
THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 **FORM TITLE:** CERTIFICATE OF LIABILITY INSURANCE

Certificate Holder is included as Additional Insured on the General Liability including Ongoing and Completed Operations, Automobile and Umbrella Liability Policies if required by written contract or agreement and with respect to work performed by Insured subject to the policy terms and conditions. This Insurance is Primary & Non-Contributory on the General Liability, Automobile Liability, and Umbrella Liability policies subject to the policy terms and conditions. A Waiver of Subrogation is provided in favor of Additional Insureds on the General Liability, Automobile Liability, Umbrella Liability and Workers Compensation policies if required by written contract or agreement and with respect to work performed by Insured, subject to the policy terms and conditions. The Umbrella Liability policy is excess of the General Liability, Automobile Liability, and Employers Liability policies. 30 Day's Notice of Cancellation on the General, Automobile, Umbrella Liability and Workers Compensation Policies.

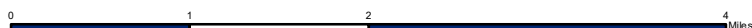
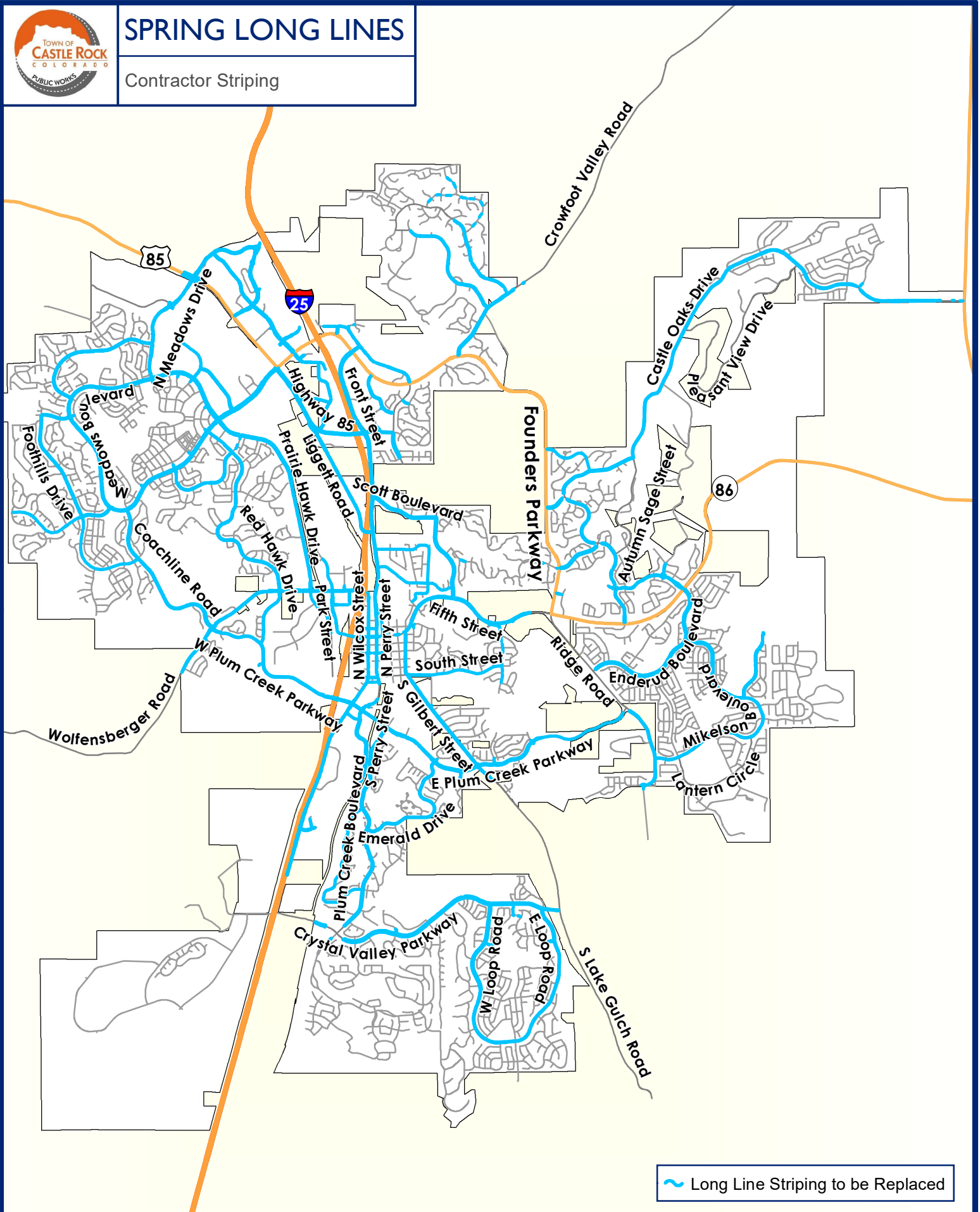
RE: Pavement Marking Maintenance Services.

Certificate Holder Continued: Town of Castle Rock, its officers and employees

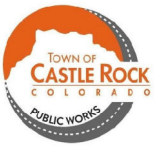


SPRING LONG LINES

Contractor Striping

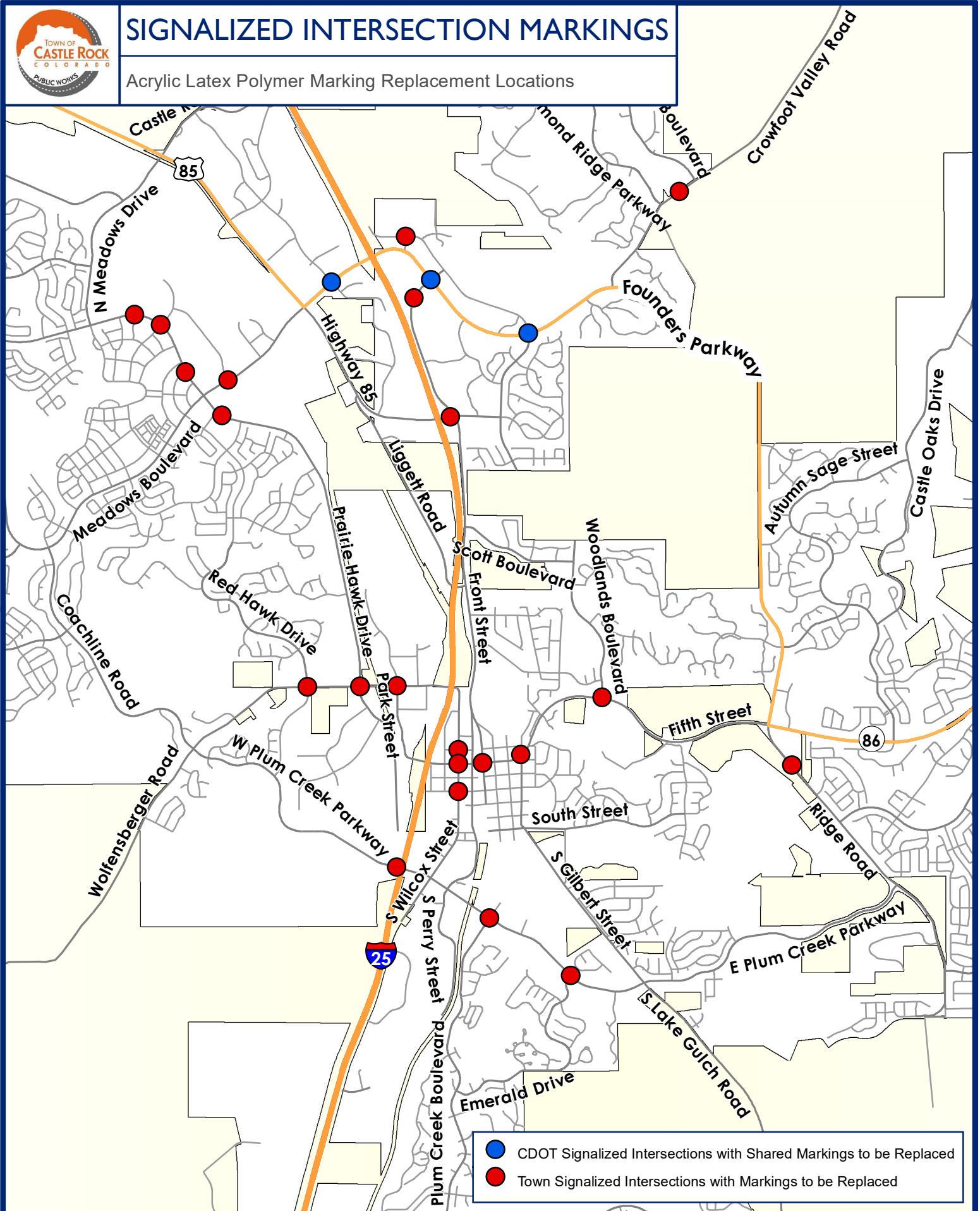


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Document Path: J:\GIS\GIS Projects - Transportation\2023_SpringLongLines_8x11P.mxd



SIGNALIZED INTERSECTION MARKINGS

Acrylic Latex Polymer Marking Replacement Locations



CDOT Signalized Intersections with Shared Markings to be Replaced

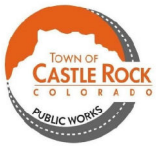


Town Signalized Intersections with Markings to be Replaced

0 0.5 1 2 Miles

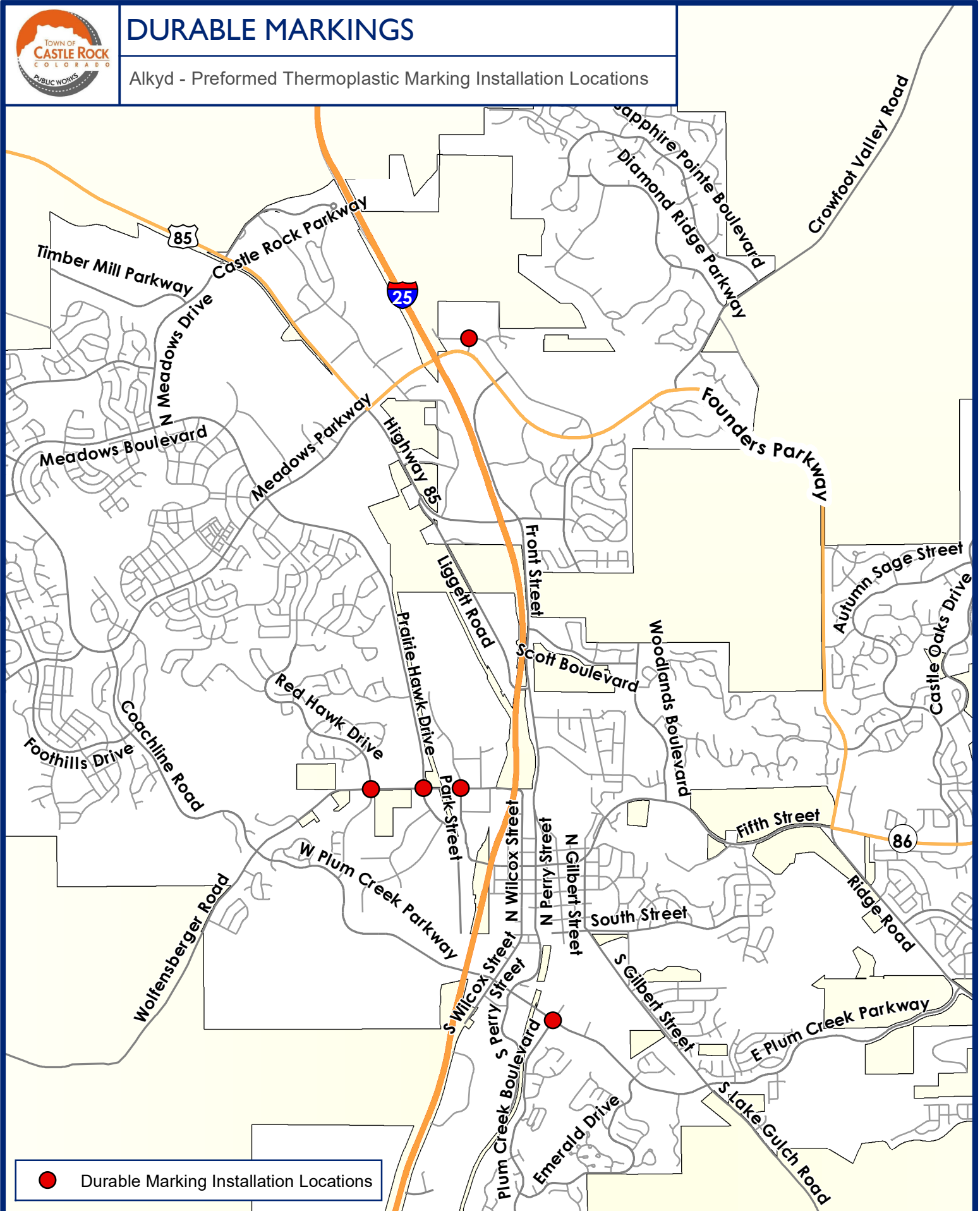


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Document Path: J:\GIS\GIS Projects - Transportation\2023_Striping\Quantiles\2023_3_1_SignalizedIntersectionMarkings_Bx11P.mxd



DURABLE MARKINGS

Alkyd - Preformed Thermoplastic Marking Installation Locations



0 0.5 1 2 Miles



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Document Path: J:\GIS\GIS Projects - Transportation\2023_StripingQuantities\2023_3_1_DurableMarkings_8x11P.mxd



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: **File #:** PWC 2023-011

To: Members of the Public Works Commission

From: Frank Castillo, Project Manager

Award of Contracts for the 2023 Pavement Maintenance Program and Capital Projects

Executive Summary

Maintaining the Town's streets is important for public safety, travel efficiency, and as a means to extend the useable life of the streets. This overall project is the annual Pavement Maintenance Program (PMP) for the Town's street system and is intended to preserve the Town's street infrastructure. Preservation and rehabilitation treatments work to extend the lifespan of street segments at the lowest lifecycle cost. Once street segments reach the end of their lifespan, reconstruction projects are identified. The PMP, and reconstruction projects meet the Town's Vision Statement goals of:

- Providing outstanding community services including police, fire, emergency medical, parks, recreation, water and transportation.
- Ensure a Town government accountable for its vision, mission and values.

In addition to these goals, the Public Works Department looks to elevate value in delivering the 2023 PMP projects. These goals are seen below, with Low Downtime, High Safety, Reliability and Low Lifecycle Cost being achieved with the 2023 PMP.



The Town of Castle Rock annually budget's for the PMP to perform needed maintenance to the Town's street system. Maintenance work generally consists of asphalt patching, overlay, reconstruction, slurry seal, sidewalk, curb & gutter repair, concrete panel replacement, and other pavement preservation treatments. In 2011 Town Council approved the rotating Five Year Pavement Maintenance Program. Maintenance work will be performed at various locations within the East PMP regionalized area. Primary street maintenance is scheduled for Mikelson Blvd and Woodlands Blvd. All maintenance activities are summarized on the 2023 PMP map (**Attachment A**).

The budget for the 2023 PMP is \$10,900,000 and the budget for 2022 reconstruction projects is \$7,600,000 for a total 2022 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. Staff is comfortable with the contingencies and believes the identified work can be managed to comply with the plans and specifications. Contingency amounts will only be used if needed during the project. Any remaining contingency may be used to further expand the scope of work.

A summary of the individual contracts with low bid amounts plus contingency, and the contractors are shown below. See (**Attachment B**) for Bid Proposal Summary for all bids that were submitted.

Notification and Outreach Efforts

Staff has developed specific public coordination outreach to ensure that residences and businesses will understand construction impacts and how this may affect access to individual businesses and residences. Public outreach will occur in numerous forms such as; 1) the Public Outreach Open Houses, 2) Town newsletters, 3) HOA letters, 4) Town social media, 5) Door notifications, 6) Press releases, 7) the Town's web site, and others. Residents and businesses will be notified of actual dates that work is to be completed adjacent to their properties, and traffic control plans will be developed and managed to ensure worker and public safety.

Town staff will host an in-house, Public Outreach Open House in March. This Public Outreach Open House will consist of detailed maps of the 2023 maintenance work to let concerned residents know which streets will receive treatments and how it may affect them. The locations will be communicated on the Public Outreach Open House mailer. Staff plans to coordinate with neighborhood Home Owners Association's (HOA's). Furthermore, press releases will be published before the start of PMP construction season to notify the public of work locations and dates.

History of Past Town Council, Boards & Commissions, or Other Discussions

The Public Works Commission at their October 3, 2011 meeting voted unanimously to recommend to Town Council to adopt the proposed Five Year Pavement Maintenance Program, and the Overall Condition Index (OCI) goal to be set at 75 for primary streets and 70 for residential streets. The OCI is an average rating of each street's condition. This was done in an effort to minimize impacts of roadway maintenance to residents, and to reduce costs of work by concentrating in one area of Town. Town Council approved the Town's rotating five year PMP regionalized area plan for

residential streets at the November 1, 2011 Town Council meeting. The Town's five-year regional plan divides the town into five regionalized areas. Primary streets can be included in any year of the five-year program. The PMP program will then annually rotate around these five areas excluding primary streets and downtown Castle Rock such that every fifth year repairs to an area's residential street system will occur. In addition to the regionalized Five Year Pavement Maintenance Program, the Public Works Department has developed the Strategic Asset Management Plan (SAMP) to maximize value from each asset for our stakeholders. Staff has begun making adjustments to the regionalized plan to better align with SAMP policies of working to obtain the lowest total lifecycle cost.

Discussion

The Town's goal for the PMP is to preserve and extend the life of the Town's streets by making the most cost effective annual improvements to selected street segments. These goals are met when proper street maintenance is administered to these segments.

Staff determines which streets require maintenance by evaluating the street's condition rating in addition to a subjective analysis. A pavement management program, Cartegraph's Pavement Asset Module, establishes these condition ratings. This program establishes a condition rating based on staff field observation for the streets, and rates them from poor to excellent condition. Different types of street maintenance treatments, such as crack seal, slurry seal, mill & overlay, full depth reclamation, and reconstruction are identified based on the condition of the roadway.

The most commonly used and cost effective pavement maintenance activity is crack sealing. Crack seal material is placed into pavement cracks, generally 1/8 of an inch and larger to seal and fill to prevent the intrusion of water and incompressible material into the crack, and to reinforce the adjacent pavement. This year under the PMP, the Town will apply crack seal material as part of the 2023 Slurry Seal Project.

Slurry Seal is a form of maintenance to keep a newer street in good condition. This type of seal is thin in nature and meant to keep water out of minor cracks, and improve skid resistance. This year the Town will complete approximately 27-lane miles of slurry seal, which is 3% of the Town's streets. A lane mile is a single lane width by a mile long.

Another category of street maintenance is an asphalt mill and overlay. This maintenance treatment removes and replaces a layer of asphalt without compromising the original pavement section. This work is costlier than a slurry seal and normally will be done to a street that has more than one distress. The distresses include minor alligator or fatigue cracking, joint reflection cracking, longitudinal / transverse cracking, thermal cracking, potholes, raveling and rutting. This year the Town will complete approximately 41-lane miles of mill & overlay, which is approximately 6% of the Town's streets.

A Street that has reached its end of service life, or has passed it, requires reconstruction, via Remove and Replace or full depth reclamation. Remove and Replace reconstruction, and full depth reclamation involves removing the pavement section in its entirety, moisture conditioning the subgrade and installing a new pavement section. Reconstruction essentially begins a new service life for the pavement. This year the Town will perform approximately 14-lane miles of reconstruction,

which is approximately 2% of the Town's streets.

Staff also evaluates the condition of the Town's concrete curb, gutter, and public sidewalks within the projects' limits. These contracts will remove and replace damaged concrete infrastructure that is a hazard to pedestrians or to the traveling public.

The invitation to bid for construction of the various projects was advertised in December 2022. Bids were opened for the projects on January 19, 2023.

A list showing the various PMP & Capital reconstruction projects and the bid results is attached (**Attachment B**). All bids were checked for accuracy, references were checked, and all documents were reviewed for contract compliance. Staff believes that each of the recommended bidders is qualified to perform the work associated with the respective maintenance contract. A summary of the individual contracts with bid amount plus contingency and the contractors are shown on the following table:

2022 PMP & CAPITAL RECOMMENDED AWARD

PROJECT	BID AMOUNT PLUS CONTINGENCY	CONTRACTOR
2023 Asphalt Overlay Project	\$7,255,348 + \$725,535 (10%) Contingency	Schmidt Construction Co. Castle Rock, CO
2023 Curb, Gutter and Sidewalk Replacement Project	\$1,143,835 + \$114,384 (10%) Contingency	Chato's Concrete, LLC Denver, Co
2023 Full Depth Reclamation Project	\$6,893,561 + \$689,356 (10%) Contingency	Schmidt Construction Co. Castle Rock, CO
2023 Slurry Seal Project	\$1,291,384 + \$129,139 (10%) Contingency	Vance Brothers Inc. Denver, CO
2023 Miscellaneous Concrete Replacement Project	\$234,000 +\$23,400 (10%) Contingency	TBD
TOTAL	\$18,499,941	

It is anticipated that concrete repairs and the reconstructions will begin in Early-April. The asphalt overlay and sealing portions will occur in the summer months. All PMP, and associated Capital projects, are expected to be completed in the fall.

Budget Impact

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000 for a total

Item #: File #: PWC 2023-011

2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. This year, competitive bids came in with better than expected results. This will give more flexibility within the Asphalt Overlay, Full Depth Reclamation and Slurry Seal contracts to expand the scope to allow more work to be done as needed. These bids will also allow the flexibility to include anticipated minor pothole patching that staff expects as a result of the severe freeze-thaw cycle from the winter months. The remaining budget of \$257,400 has been identified for the annual miscellaneous concrete project, and other miscellaneous asphalt and concrete needs.

Staff Recommendation

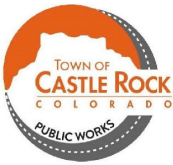
Staff is recommending that the Public Works Commission recommend to Town Council approve the resolutions for all 2023 PMP contracts, and the Capital projects as summarized, and approval of the construction contracts with each of the contractors for the amounts identified.

NOTE: *The individual Resolutions will follow as the next items on the agenda*

Attachments

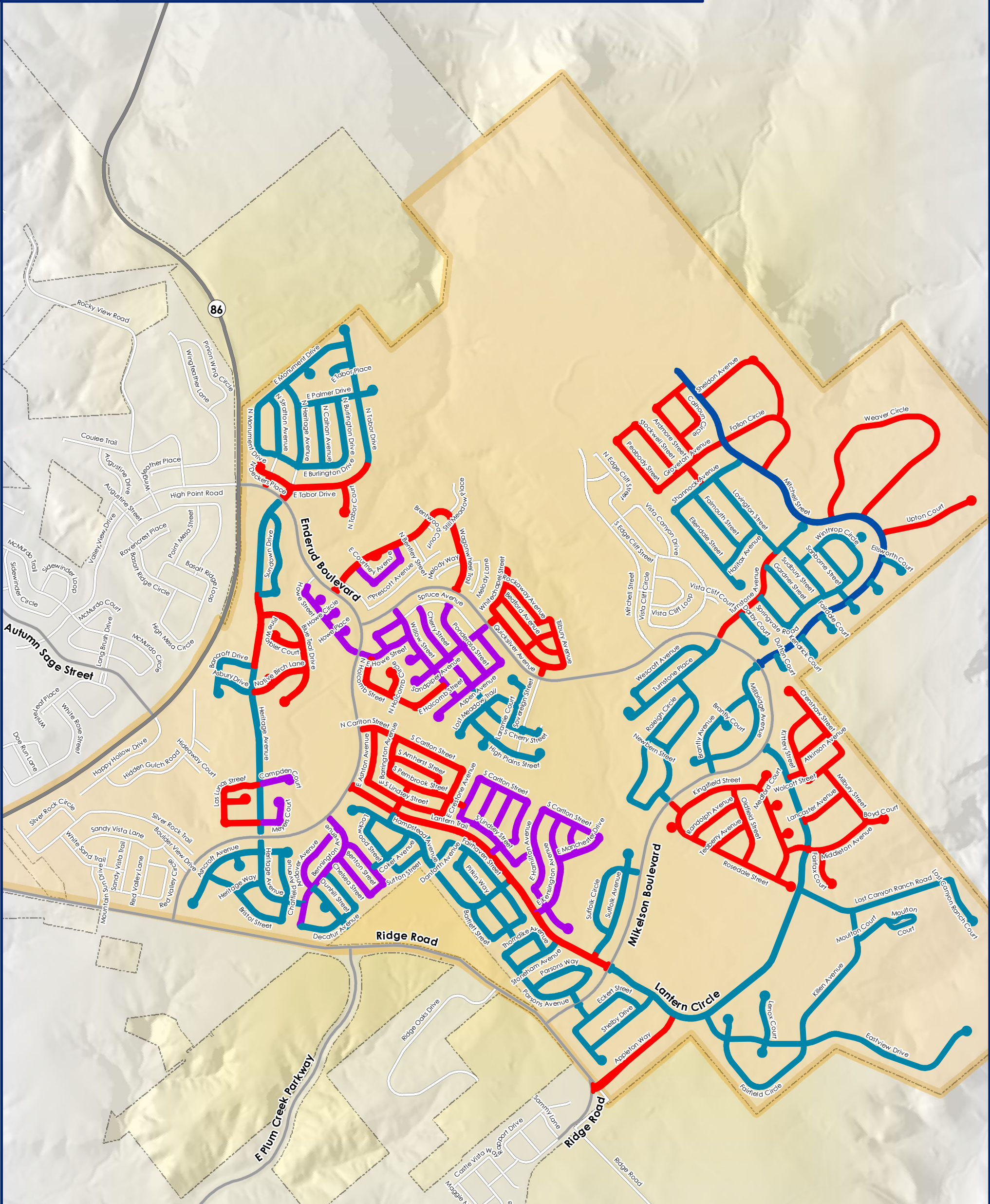
Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary



RECOMMENDED PAVEMENT TREATMENTS

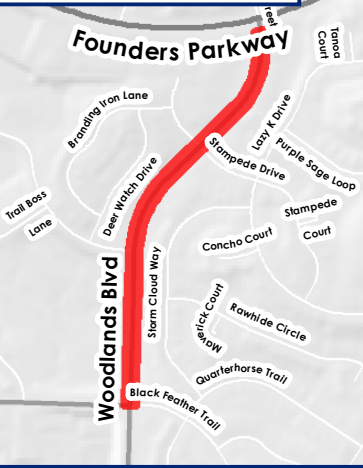
PMP East, Downtown and Primary Regions (Total Budget- \$18,500,000)



Downtown Treatments



Woodlands Blvd Slurry Seal



Mikelson Blvd- Northbound Reconstruction



PMP East Treatments

- 2in Mill and Overlay
- 3in Mill and Overlay
- Asphalt Slurry Seal
- Roadway Reconstruction

- PMP East Region (2023)
- Town Limits



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2023 Pavement Maintenance Program
Bid Proposal Summary

2023 Curb, Gutter, Sidewalk Replacement Project												
CONTRACTOR		BID SCHEDULE A		BUSINESS LOCATION								
Engineer's Cost Estimate		\$795,300.00										
Chad's Concrete		\$693,835.00		8132 Quivira Way, Denver, CO 80021								
Agape Civil Construction Inc.		\$771,730.00		9646 S. Dahlman Dr., Centennial, CO 80415								
RMA Concrete LLC		\$722,865.75		12665 W. Bird Way, Aurora, CO 80009								
Essential Contractors		\$723,660.00		Aurora, CO 80012								
Siva Construction		\$722,422.00		421 W. 70th Place, Denver, CO 80021								
CS		\$618,186.00		1199 Atchison Ct., Castle Rock, CO 80109								
Gemini& Concrete		\$505,700.75		15312 E. Fremont Dr., Centennial, CO 80112								
Julissa International Inc.		\$1,213,893.00		6663 Colorado Blvd, Commerce City, CO 80027								
Guthrie Asphalt		\$1,502,339.75		11863 N. Dumont Way, Littleton, CO 80120								
2023 Slurry Seal Project												
CONTRACTOR		BID SCHEDULE		BUSINESS LOCATION								
Engineer's Cost Estimate		\$876,904.10										
Rocky Mountain Pavement / A-One Original		\$796,270.40		2020 E. 78th Ave, Denver, CO 80231								
Venice Brothers		\$785,385.10		380 West 42nd Ave., Denver, CO 80210								
2023 Full Depth Reclamation Project												
CONTRACTOR		BID SCHEDULE A		BUSINESS LOCATION								
Engineer's Cost Estimate		\$7,588,878.75										
Schmidt Construction		\$6,195,356.10		1101 Topinka Way Castle Rock, CO 80109								
Agape Civil Construction Inc.		\$6,240,932.00		8546 S. Dahlman Dr., Centennial, CO 80415								
Elite Surface Infrastructure		\$6,082,397.67		1199 Atchison Ct., Castle Rock, CO 80109								
Martin Marietta		\$7,102,811.20		8395 N. Peoria St, Denver, CO 80221								
Chavez Construction		\$7,520,346.00		3911 Norwood Dr. Unit C, Littleton, CO 80120								
Brannan Sand And Gravel		\$7,830,516.35		5880 Lipan St., Denver, CO 80231								
CAS		\$8,046,068.50		3700 E. 56th Ave, Commerce City, CO 80027								
2023 Asphalt Overlay Project												
CONTRACTOR		BID SCHEDULE A		BUSINESS LOCATION								
Engineer's Cost Estimate		\$7,438,465.75										
Schmidt Construction		\$6,375,817.80		1101 Topinka Way Castle Rock, CO 80109								
Agape Civil Construction LLC.		\$6,626,999.20		9646 S. Dahlman Dr., Centennial, CO 80415								
Martin Marietta		\$7,038,314.80		8395 N. Peoria St, Denver, CO 80221								
CS		\$7,496,492.20		1199 Atchison Ct., Castle Rock, CO 80109								
ProCon-WCR Inc.		\$7,827,605.95		609 W. 12nd Ave., Denver, CO 80211								
CAS		\$8,117,863.80		3700 E. 56th, Commerce City, CO 80027								
Chavez Construction Inc.		\$8,122,817.00		3911 Norwood Dr., Unit C, Littleton, CO 80120								
Brannan Sand and Gravel Company		\$8,156,524.75		5880 Lipan St., Denver, CO 80231								
2023 Town Facility Parking Lot Improvement												
CONTRACTOR	Bid Schedule A Sovereign Street	Bid Schedule B Hawk Fire Station Parille Hawk Drive	Prairie	Bid Schedule C Watermen Cattle Care Drive	Bid Schedule D Founders Treatment Plant Lantern Trail	Bid Schedule E Weaver II Wolf Field Wagonwheel Trail	Bid Schedule F Autumn Sage Street	Bid Schedule G Clear Sky Way	Bid Schedule H Gemstone Parking Lot Sapphire Point Blvd	Bid Schedule I Butterfield Park Concrete off Meadows Blvd	GRAND TOTAL (Schedules A thru I)	BUSINESS LOCATION
Engineer's Cost Estimate	\$132,208.50	\$155,549.60		\$46,205.50	\$14,000.00	\$16,332.50	\$17,888.00	\$55,549.00	\$142,720.10	\$56,714.30	\$637,369.50	
Metro Pavers Inc.	\$158,127.25	\$178,508.55		\$36,937.40	\$7,375.00	\$11,326.70	\$10,635.60	\$43,651.90	\$162,511.15	\$55,728.20	\$664,605.75	7875 E 78 Frontage Rd, Henderson, CO 80640



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: File #: PWC 2023-012

To: Members of the Public Works Commission

From: Frank Castillo, Project Manager

Resolution approving a Construction Contract for the 2023 Slurry Seal Project

Executive Summary

Maintaining the Town's streets is important for public safety, travel efficiency, and as a means to extend the useable life of the streets. This overall project is the annual Pavement Maintenance Program (PMP) for the Town's street system and is intended to preserve the Town's street infrastructure. Preservation and rehabilitation treatments work to extend the lifespan of street segments at the lowest lifecycle cost. And, once street segments reach the end of their lifespan, reconstruction projects are identified. The PMP, and reconstruction projects meet the Town's Vision Statement goals of:

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The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000 for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. Staff is comfortable with the contingencies and believes the identified work can be managed to comply with the plans and specifications. Contingency amounts will only be used if needed during this period. Any remaining contingency may be used to further expand the scope of work.

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Staff has developed specific public coordination outreach to ensure that residences and businesses will understand construction impacts and how this may affect access to individual businesses and residences. Public outreach will occur in numerous forms such as; 1) The Public Outreach Open House, 2) Town newsletters, 3) HOA newsletters, 4) Town social media, 5) Door notification, 6) Press releases, 7) the Town's website, and others. Residents and businesses will be notified of actual dates that work is to be completed adjacent to their properties, and traffic control plans will be developed and managed to ensure worker and public safety.

Town staff will host an in-house, Public Outreach Open House in March. This Public Outreach Open House will consist of detailed maps of the 2023 maintenance work to let concerned residents know which streets will receive treatments and how it may affect them. This year's PMP Open House will be held at The Ridge House - Founder's Village, 4501 Enderud Blvd. Staff plans to coordinate with neighborhood Home Owners Association's (HOA). Furthermore, press releases will be published before the start of PMP construction season to notify the public of work locations and dates.

History of Past Town Council, Boards & Commissions, or Other Discussions

The Public Works Commission at their October 3, 2011 meeting voted unanimously to recommend to Town Council to adopt the proposed Five Year Pavement Maintenance Program, and the Overall Condition Index (OCI) goal to be set at 75 for primary streets and 70 for residential streets. The OCI is an average rating of each street's condition. This was done in an effort to minimize impacts of roadway maintenance to residents, and to reduce costs of work by concentrating in one area of Town. Town Council approved the Town's rotating five year PMP regionalized area plan for residential streets at the November 1, 2011 Town Council meeting. The Town's five-year regional plan divides the town into five regionalized areas. Primary streets can be included in any year of the five-year program. The PMP program will then annually rotate around these five areas excluding primary streets and downtown Castle Rock such that every fifth year repairs to an area's residential street system will occur. In addition to the regionalized Five Year Pavement Maintenance Program, the Public Works Department has developed the Strategic Asset Management Plan (SAMP) to maximize value from each asset for our stakeholders. Staff has begun making adjustments to the regionalized plan to better align with SAMP policies of working to obtain the lowest total lifecycle cost.

Discussion

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Slurry Seal is a form of maintenance to keep a newer street in good condition. This type of seal is thin in nature and meant to keep water out of minor cracks, and improve skid resistance. This year the Town will complete approximately 27 lane-miles of slurry seal, which is approximately 3% of the Town's streets. A lane-mile is a single lane width by a mile long.

The invitation to bid for construction of this projects was advertised in December 2022. Bids were opened for the projects on January 19, 2023.

The Slurry Seal bid was checked for accuracy, references were checked, and all documents were reviewed for contract compliance. Staff believes that the recommended bidder is qualified to perform the work associated with the respective maintenance contract. A summary of the individual contract with bid amount plus contingency and the contractor is shown on the following table:

<u>2023 PMP RECOMMENDED AWARD</u>		
PROJECT	BID AMOUNT PLUS CONTINGENCY	CONTRACTOR
2023 Slurry Seal Project	\$1,291,384 + \$129,138 (10%) Contingency	Vance Brothers Inc. Denver, CO
TOTAL	\$1,420,522	120-3140-431.40-35

It is anticipated that the slurry seal placement will begin in early July. The asphalt repairs and crack seal portions will occur mid-June.

Budget Impact

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000, for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. The remaining budget of \$257,458 has been identified for the annual miscellaneous concrete project, and other miscellaneous asphalt and concrete needs.

Staff Recommendation

Staff is recommending that the Public Works Commission recommend to Town Council the acceptance of the bid for the 2023 Slurry Seal project, and approval of the construction contract with Vance Brothers, Inc. for the amounts identified.

Proposed Motion

"I move to recommend to Town Council to approve a Resolution approving the Construction Contract between the Town of Castle Rock and Vance Brothers Inc. for the 2023 Slurry Seal Project"

Alternate Motion

"I move to recommend Town Council approve a Resolution approving the Construction Contract between the Town of Castle Rock and Vance Brothers Inc. for the 2023 Slurry Seal Project, with the following changes...."

Attachments

Item #: **File #:** PWC 2023-012

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

**TOWN OF CASTLE ROCK
CONSTRUCTION CONTRACT
(2023 Slurry Seal Project)**

THIS CONSTRUCTION CONTRACT (“Contract”) is made between the **TOWN OF CASTLE ROCK**, a Colorado municipal corporation (“Town”), 100 N. Wilcox Street, Castle Rock, Colorado 80104 and **VANCE BROTHERS, INC**, a Missouri corporation, 5201 Bighton, Kansas City, Missouri 64130 (“Contractor”).

In consideration of these mutual covenants and conditions, the Town and Contractor agree as follows:

SCOPE OF WORK The Contractor shall execute the entire Work described in the Contract.

CONTRACT The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, written or oral representations and agreements. The Contract incorporates the following Contract Documents. In resolving inconsistencies among two or more of the Contract Documents, precedence will be given in the same order as enumerated.

LIST OF CONTRACT DOCUMENTS

The Contract Documents, except for Modifications issued after execution of this Contract, are:

1. Change Orders
2. Notice to Proceed
3. Construction Contract
4. General Conditions
5. Where applicable, Davis-Bacon Act Wage Determinations
6. The following Addenda, if any:

2023 Facilities – 1 Addendum

7. Special Conditions of the Contract:
 - a. ProjSec105 No open excavation
 - b. ProjSec107 Public Notification
 - c. ProjSec107 Property Access
 - d. ProjSec202 Temporary Pavement Marking
 - e. ProjSec408 Mastic & Crack Seal
 - f. ProjSec410 Slurry Seal
 - g. ProjSec627 Pavement Marking
 - h. ProjSec627 Preformed Thermoplastic
8. Notice of Award;
9. Invitation to Bid;
10. Information and Instructions to Bidders;

11. Notice of Substantial Completion;
12. Notice of Construction Completion;
13. Proposal Forms, including Bid Schedules;
14. Performance, and Labor and Material Payment Bonds;
15. Performance Guarantee; and
16. Insurance Certificates.

CONTRACT PRICE. The Town shall pay the Contractor for performing the Work and the completion of the Project according to the Contract, subject to Change Orders as approved in writing by the Town, under the guidelines in the General Conditions. The Town will pay **\$1,291,384.00** ("Contract Price"), to the Contractor, subject to full and satisfactory performance of the terms and conditions of the Contract. The Contract Price is provisional based on the quantities contained in the Bid attached as *Exhibit 1*. The final Contract Price shall be adjusted to reflect actual quantities incorporated into the Work at the specified unit prices. The Town has appropriated money equal or in excess of the Contract Price for this work.

TERM. The term shall commence upon execution of the Contract and terminate on December 31, 2023, unless an extension of the Contract is agreed to in writing by the Town and the Contractor.

COMPLETION OF WORK. The Contractor must begin work covered by the Contract within **3** working days from the date of the Notice to Proceed, and must complete work within **35** working days from and including the date of Notice to Proceed, according to the General Conditions, or by August 23, 2023, whichever date is earlier.

LIQUIDATED DAMAGES. If the Contractor fails to complete the Work by the date set for completion in the Contract, or if the completion date is extended by a Change Order, by the date set in the Change Order, the Town may permit the Contractor to proceed, and in such case, may deduct the sum of **\$1,750** for each day that the Work shall remain uncompleted from monies due or that may become due the Contractor. This sum is not a penalty but is a reasonable estimate of liquidated damages.

The parties agree that, under all of the circumstances, the daily basis and the amount set for liquidated damages is a reasonable and equitable estimate of all the Town's actual damages for delay. The Town expends additional personnel effort in administering the Contract or portions of the Work that are not completed on time, and has the cost of field and office engineering, inspecting, and interest on financing and such efforts and the costs thereof are impossible to accurately compute. In addition, some, if not all, citizens of Castle Rock incur personal inconvenience and lose confidence in their government as a result of public projects or parts of them not being completed on time, and the impact and damages, certainly serious in monetary as well as other terms are impossible to measure.

SERVICE OF NOTICES. Notices to the Town are given if sent by registered or certified mail, postage prepaid, to the following address:

TOWN OF CASTLE ROCK

Town Attorney
100 N. Wilcox Street
Castle Rock, CO 80104

With a copy to: Legal@crgov.com

INSURANCE PROVISIONS. The Contractor must not begin any work until the Contractor obtains, at the Contractor's own expense, all required insurance as specified in the General Conditions. Such insurance must have the approval of the Town of Castle Rock as to limits, form and amount. *Certificate of Insurance ("COI") must be submitted along with the executed contract as **Exhibit 2**.*

RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify, save harmless, and defend the Town, its officers and employees, from and in all suits, actions or claims of any character brought because of: any injuries or damage received or sustained by any person, persons or property because of operations for the Town under the Contract; including but not limited to claims or amounts recovered from any infringements of patent, trademark, or copyright; or pollution or environmental liability. The Town may retain so much of the money due the Contractor under the Contract, as the Town considers necessary for such purpose. If no money is due, the Contractor's Surety may be held until such suits, actions, claims for injuries or damages have been settled. Money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that the Contractor and the Town are adequately protected by public liability and property damage insurance.

The Contractor also agrees to pay the Town all expenses, including attorney's fees, incurred to enforce this Responsibility for Damage Claim clause.

Nothing in the **INSURANCE PROVISIONS of the General Conditions** shall limit the Contractor's responsibility for payment of claims, liabilities, damages, fines, penalties, and costs resulting from its performance or nonperformance under the Contract.

STATUS OF CONTRACTOR. Contractor has completed the Affidavit of Independent Contractor Status, attached as **Exhibit 3**, and submitted same at the time of execution of this Agreement. The Contractor is performing all work under the Contract as an independent Contractor and not as an agent or employee of the Town. No employee or official of the Town will supervise the Contractor. The Contractor will not supervise any employee or official of the Town. The Contractor shall not represent that it is an employee or agent of the Town in any capacity. **The Contractor and its employees are not entitled to Town Workers' Compensation benefits and are solely responsible for federal and state income tax on money earned.** This is not an exclusive contract.

THIRD PARTY BENEFICIARIES. None of the terms or conditions in the Contract shall give or allow any claim, benefit, or right of action by any third person not a party to the Contract. Any person, except the Town or the Contractor, receiving services or benefits under the Contract is an incidental beneficiary only.



INTEGRATION. This contract integrates the entire understanding of the parties with respect to the matters set forth. No representations, agreements, covenants, warranties, or certifications, express or implied, shall exist as between the parties, except as specifically set forth in this Contract.

DEFINITIONS. The Definitions in the General Conditions apply to the entire Contract unless modified within a Contract Document.

Executed this _____ day of _____, 20__.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jason Gray, Mayor

APPROVED AS TO FORM:

Michael J. Hyman, Town Attorney

CONTRACTOR:

VANCE BROTHERS, INC

By: _____

Title: _____

EXHIBIT 1

CONTRACTOR'S BID

Description of the Work

General Description – The work to be performed under this contract includes removal of pavement markings, placement of pavement markings, application of mastic and crack seal material, asphalt patching, asphalt leveling, cleaning, and application of slurry seal to designated streets as indicated in Appendix A or as directed by the Project Manager. The Contractor shall supply all labor, equipment, and materials necessary to complete the work in accordance with these specifications. The contract shall be awarded based on the bids received for the base bid schedule and the contract documents. Contractor will be required to coordinate construction activities with adjacent businesses, trash removal companies, school district, HOA, Metro Districts, and other Town maintenance projects if applicable. The contractor shall commence work no later than three (3) calendar days from, and including, the date of the Notice to Proceed, and be construction complete (punchlist items, cleanup, and demobilize) within thirty-five (35) working days from the date on the Notice to Proceed. If “Construction Completion” is not issued within the allotted contract time for the original scope of work, “Liquidated Damages” shall be assessed. When contract work is complete, the contractor shall commence work on punchlist items, cleanup, and demobilizing regardless of contract time remaining. Crack seal, mastic, asphalt patching, and pavement marking removal can start June 5, 2023. Slurry seal application shall take place between July 5, 2023 and August 23, 2023. A schedule of sequencing of all work shall be submitted at, or before, the project pre-construction meeting, and approved by the Town prior to issuance of Notice to Proceed.

**2023 Slurry Seal Project
Bid Schedule**

ITEM #	Description	UNIT	QUANTITY	UNIT COST	TOTAL COST
202	REMOVAL OF PAVEMENT MARKINGS	SF	30,000	\$1.85	\$55,500.00
210A	ADJUST MANHOLE (MECHANICALLY SECURED GRADE RING)(CONTINGENCY)	EA	25	\$510.00	\$12,750.00
210B	ADJUST MANHOLE (RING AND COVER ASSEMBLY)(CONTINGENCY)	EA	25	\$720.00	\$18,000.00
210C	REPLACE VALVE BOX (CONTINGENCY)	EA	45	\$600.00	\$27,000.00
210D	ADJUST VALVE BOX (MECHANICALLY SECURED GRADE RING)(CONTINGENCY)	EA	45	\$190.00	\$8,550.00
403A	HMA/WMA (LEVELING) (GR SX)	TON	25	\$230.00	\$5,750.00
403B	HMA/WMA (PATCHING) (GR SX) (CIP)(Minimum 6" depth)	TON	575	\$225.00	\$129,375.00
408A	CRACK SEAL (MOB)(TRAFFIC CONTROL)	LB	5,000	\$2.30	\$11,500.00
408B	MASTIC (MOB)(TRAFFIC CONTROL)	LB	5,000	\$2.45	\$12,250.00
410	SLURRY SEAL TYPE II	SY	114,826	\$2.93	\$336,440.18
620	SANITARY FACILITY	LS	1	\$1,000.00	\$1,000.00
626	MOBILIZATION	LS	1	\$20,000.00	\$20,000.00
627A	PAVEMENT MARKINGS (PAINT)(4" White)	SF	1,000	\$1.10	\$1,100.00
627B	PAVEMENT MARKINGS (PAINT)(4" Double Yellow)	SF	10,300	\$0.90	\$9,270.00
627C	PAVEMENT MARKINGS (PAINT)(6" White)	SF	14,000	\$0.90	\$12,600.00
627D	PAVEMENT MARKINGS (PAINT)(XWALK/STOPBAR)	SF	3,000	\$9.50	\$28,500.00
627E	PAVEMENT MARKINGS (SYMBOL)(PREFORMED THERMOPLASTIC)	SF	500	\$22.00	\$11,000.00
627F	PAVEMENT MARKINGS (XWALK/STOPBAR)(PREFORMED THERMOPLASTIC)	SF	1,200	\$15.00	\$18,000.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$40,000.00	\$40,000.00
630B	VARIABLE MESSAGE SIGN (VMS) (2 EA Per Day)	DAY	40	\$120.00	\$4,800.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$6,000.00	\$6,000.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$521,999.00	\$521,999.00

TOTAL \$1,291,384.18

Total Project Cost in Words: One Million Two Hundred Ninty One Thousand Three Hundred Eighty Four and Eighteen Cents

EXHIBIT 2

CONTRACTOR'S CERTIFICATE OF INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/6/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER HUB International Mid-America 9200 Ward Parkway Suite 500 Kansas City MO 64114	CONTACT NAME: Certificate Department PHONE (A/C. No. Ext): 816-708-4600 FAX (A/C. No): 816-203-4425 E-MAIL ADDRESS: HUB-KC.Certificates@HUBInternational.com
INSURED Vance Brothers, Inc. 380 West 62nd Avenue Denver CO 80216	INSURER(S) AFFORDING COVERAGE INSURER A: Travelers Property Casualty Company of America INSURER B: The Phoenix Insurance Company INSURER C: Argonaut Insurance Company INSURER D: The Travelers Indemnity Company of America INSURER E: INSURER F:

COVERAGES**CERTIFICATE NUMBER:** 627557880**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:			DT-CO-9M212947-PHX-23	1/1/2023	1/1/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
D	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> MCS 90			810-9M352747-23-26	1/1/2023	1/1/2024	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 10,000			CUP-9M422902-23-26	1/1/2023	1/1/2024	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000 \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below Y/N <input checked="" type="checkbox"/> N		N/A	WC928948285514	1/1/2023	1/1/2024	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: 2023 Slurry Seal Project

CERTIFICATE HOLDER**CANCELLATION**Town of Castle Rock
100 N Wilcox Street
Castle Rock CO 80216

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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EXHIBIT 3

TOWN OF CASTLE ROCK AFFIDAVIT OF INDEPENDENT CONTRACTOR STATUS

I, _____, an authorized representative of **Vance Brothers, Inc.**, holding legal authority to sign this Affidavit declare under oath that I am 18 years or older and have the capacity to sign this Affidavit.

In accordance with Section 8-70-115, C.R.S., I certify the following:

- With respect to the Agreement, **Vance Brothers, Inc.** represents and warrants that it is its express intention to be employed as an independent contractor of the Town of Castle Rock (the “Town”) for purposes of performing the work or services which are the subject of the Agreement. **Vance Brothers, Inc.** understands and confirms that the Town reasonably relied on this intention in entering into the Agreement.
- The Town does not require **Vance Brothers, Inc.** work exclusively for the Town, except that **Vance Brothers, Inc.** may choose to work exclusively for the Town for a finite period of _____ time _____ specified _____ in _____ the _____ document.
- The Town does not establish a quality standard for the work or services performed pursuant to the Agreement, except that the Town may provide plans and specifications regarding the work but cannot oversee the actual work or provide instruction as to how the work is performed.
- The Town does not pay a salary or hourly rate but rather a fixed or contract rate, as noted in the terms and conditions of the Agreement, and any Exhibits made part of the Agreement.
- The Town cannot terminate the work or services performed during the contract period unless otherwise agreed to in the terms and conditions of the Agreement.
- **Vance Brothers, Inc.** is not provided with anything, if at all, more than minimal training from the Town.
- The Town does not provide **Vance Brothers, Inc.** with tools or benefits for the performance of the work or services which are the subject of the Agreement, except materials and equipment may be supplied.
- The Town does not dictate the time of performance, except that a completion schedule and a range of mutually agreeable work hours may be established in the Agreement.
- The Town issues checks payable to **Vance Brothers, Inc.** a party to the Agreement; and the Town does not combine their business operations in any way with the **Vance Brothers, Inc.’s** business, but instead maintains such operations as separate and distinct.

- **Vance Brothers, Inc.** understands that if a professional license to practice a particular occupation under the laws of the State of Colorado requires the exercise of a supervisory function with regard to the work of services performed under this Agreement, such supervisory role shall not affect the independent contractor relationship with the Town.
- **VANCE BROTHERS, INC. UNDERSTANDS THAT NEITHER CHATO'S CONCRETE, LLC NOR ITS EMPLOYEES ARE ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS OF THE TOWN.**
- **VANCE BROTHERS, INC. UNDERSTANDS THAT IT IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THE AGREEMENT.**

CONTRACTOR:

VANCE BROTHERS, INC.

By: _____

Name

STATE OF COLORADO)

) ss.

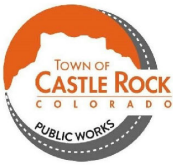
COUNTY OF _____)

The foregoing instrument as acknowledged before me this ___ day of _____,
20__ by _____ as _____ of the above mentioned Contractor.

Witness my official hand and seal.

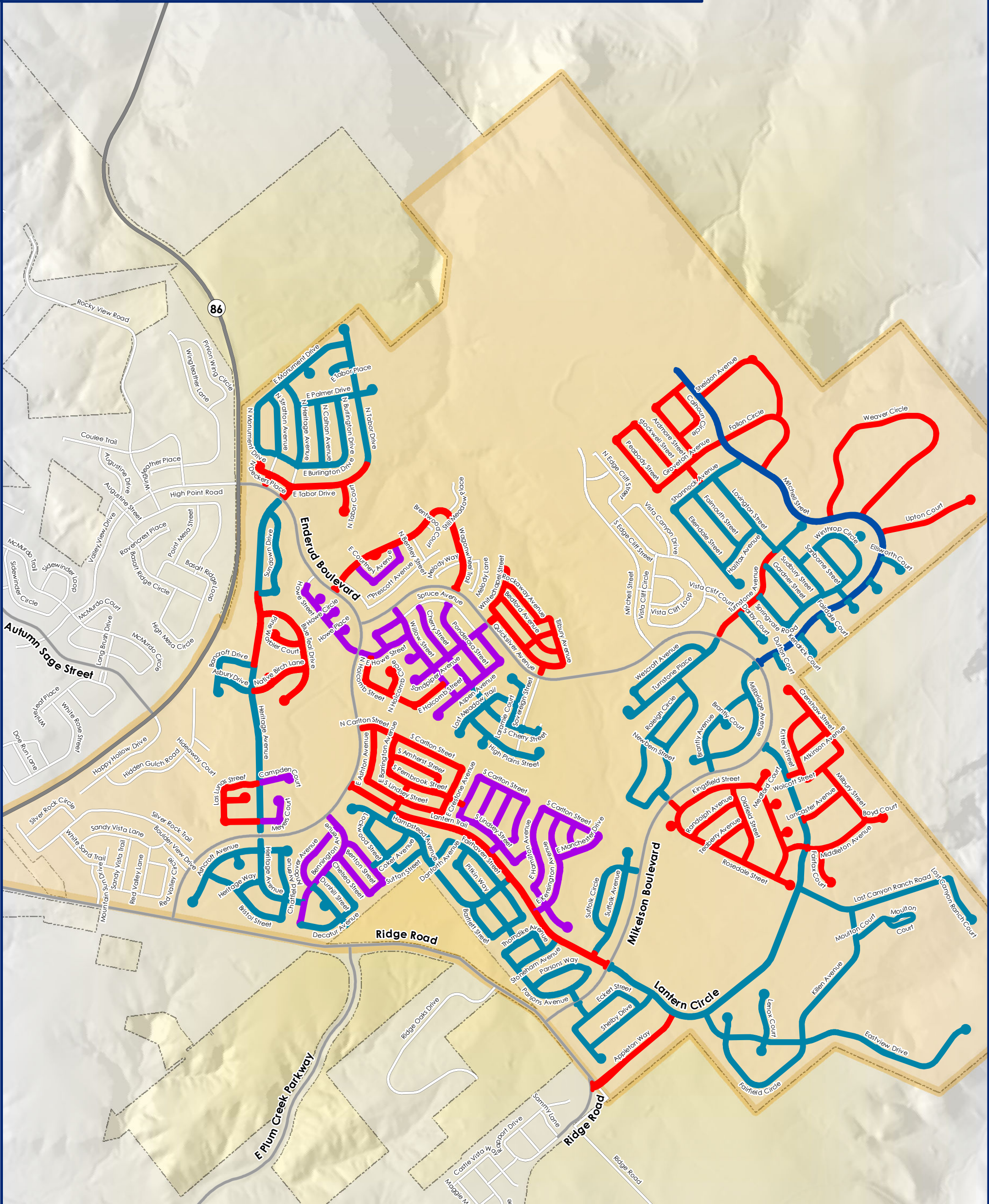
My commission expires:

Notary Public



RECOMMENDED PAVEMENT TREATMENTS

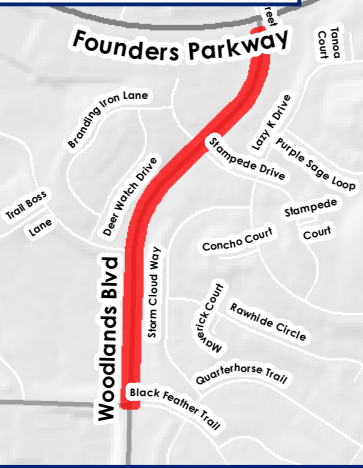
PMP East, Downtown and Primary Regions (Total Budget- \$18,500,000)



Downtown Treatments



Woodlands Blvd Slurry Seal



Mikelson Blvd- Northbound Reconstruction



PMP East Treatments

- 2in Mill and Overlay
- 3in Mill and Overlay
- Asphalt Slurry Seal
- Roadway Reconstruction

- PMP East Region (2023)
- Town Limits



Disclaimer: The data presented has been compiled from various sources, each of which introduces varying degrees of inaccuracies or inconsistencies. Such discrepancies in data are inherent and in supplying this product to the public the Town of Castle Rock assumes no liability for its use or accuracy. For questions or comments regarding omissions, corrections, or updates please visit CRgov.com/directory for contact information.
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2023 SLURRY SEAL PROJECT BID COMPARISON

BID SCHEDULE A - 2023 Slurry Seal Project				CONTRACTOR BID AVG.	CONTRACTOR BID AVG.	PUBLIC WORKS ESTIMATE		Vance Brothers		A-1 Chip Seal	
ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT COST	AVG. COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
202	REMOVAL OF PAVEMENT MARKINGS	SF	30,000	\$2.03	\$60,750.00	\$1.32	\$39,600.00	\$1.85	\$55,500.00	\$2.20	\$66,000.00
210A	ADJUST MANHOLE (MECHANICALLY SECURED GRADE RING)(CONTINGENCY)	EA	25	\$455.00	\$11,375.00	\$365.00	\$9,125.00	\$510.00	\$12,750.00	\$400.00	\$10,000.00
210B	ADJUST MANHOLE (RING AND COVER ASSEMBLY)(CONTINGENCY)	EA	25	\$722.50	\$18,062.50	\$565.00	\$14,125.00	\$720.00	\$18,000.00	\$725.00	\$18,125.00
210C	REPLACE VALVE BOX (CONTINGENCY)	EA	45	\$1,325.00	\$59,625.00	\$410.00	\$18,450.00	\$600.00	\$27,000.00	\$2,050.00	\$92,250.00
210D	ADJUST VALVE BOX (MECHANICALLY SECURED GRADE RING)(CONTINGENCY)	EA	45	\$395.00	\$17,775.00	\$325.00	\$14,625.00	\$190.00	\$8,550.00	\$600.00	\$27,000.00
403A	HMA/WMA (LEVELING) (GR SX)	TON	25	\$247.50	\$6,187.50	\$315.00	\$7,875.00	\$230.00	\$5,750.00	\$265.00	\$6,625.00
403B	HMA/WMA (PATCHING) (GR SX) (CIP)(Minimum 6" depth)	TON	575	\$252.50	\$145,187.50	\$270.00	\$155,250.00	\$225.00	\$129,375.00	\$280.00	\$161,000.00
408A	CRACK SEAL (MOB)(TRAFFIC CONTROL)	LB	5,000	\$2.63	\$13,125.00	\$2.80	\$14,000.00	\$2.30	\$11,500.00	\$2.95	\$14,750.00
408B	MASTIC (MOB)(TRAFFIC CONTROL)	LB	5,000	\$2.75	\$13,750.00	\$2.95	\$14,750.00	\$2.45	\$12,250.00	\$3.05	\$15,250.00
410	SLURRY SEAL TYPE II	SY	114,826	\$3.05	\$350,219.30	\$2.85	\$327,254.10	\$2.93	\$336,440.18	\$3.17	\$363,998.42
620	SANITARY FACILITY	LS	1	\$1,000.00	\$1,000.00	\$1,250.00	\$1,250.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00
626	MOBILIZATION	LS	1	\$35,000.00	\$35,000.00	\$50,000.00	\$50,000.00	\$20,000.00	\$20,000.00	\$50,000.00	\$50,000.00
627A	PAVEMENT MARKINGS (PAINT)(4" White)	SF	1,000	\$0.97	\$970.00	\$0.70	\$700.00	\$1.10	\$1,100.00	\$0.84	\$840.00
627B	PAVEMENT MARKINGS (PAINT)(4" Double Yellow)	SF	10,300	\$0.87	\$8,961.00	\$1.60	\$16,480.00	\$0.90	\$9,270.00	\$0.84	\$8,652.00
627C	PAVEMENT MARKINGS (PAINT)(6" White)	SF	14,000	\$0.87	\$12,180.00	\$0.70	\$9,800.00	\$0.90	\$12,600.00	\$0.84	\$11,760.00
627D	PAVEMENT MARKINGS (PAINT)(XWALK/STOPBAR)	SF	3,000	\$9.75	\$29,250.00	\$8.35	\$25,050.00	\$9.50	\$28,500.00	\$10.00	\$30,000.00
627E	PAVEMENT MARKINGS (SYMBOL)(PREFORMED THERMOPLASTIC)	SF	500	\$21.00	\$10,500.00	\$20.30	\$10,150.00	\$22.00	\$11,000.00	\$20.00	\$10,000.00
627F	PAVEMENT MARKINGS (XWALK/STOPBAR)(PREFORMED THERMOPLASTIC)	SF	1,200	\$14.18	\$17,010.00	\$14.10	\$16,920.00	\$15.00	\$18,000.00	\$13.35	\$16,020.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$42,500.00	\$42,500.00	\$75,500.00	\$75,500.00	\$40,000.00	\$40,000.00	\$45,000.00	\$45,000.00
630B	VARIABLE MESSAGE SIGN (VMS) (2 EA Per Day)	DAY	40	\$135.00	\$5,400.00	\$250.00	\$10,000.00	\$120.00	\$4,800.00	\$150.00	\$6,000.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$14,000.00	\$14,000.00	\$20,000.00	\$20,000.00	\$6,000.00	\$6,000.00	\$22,000.00	\$22,000.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00

TOTAL PROJECT BASE BID: **\$870,904.10**
PERCENTAGE Over/Under:

\$789,385.18
 -9.36%

\$996,270.42
 14.39%



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: **File #:** PWC 2023-013

To: Members of the Public Works Commission

From: Frank Castillo, Project Manager

Resolution approving a Construction Contract for the 2023 PMP Asphalt Overlay Project

Executive Summary

Maintaining the Town's streets is important for public safety, travel efficiency, and as a means to extend the useable life of the streets. This overall project is the annual Pavement Maintenance Program (PMP) for the Town's street system and is intended to preserve the Town's street infrastructure. Preservation and rehabilitation treatments work to extend the lifespan of street segments at the lowest lifecycle cost. And, once street segments reach the end of their lifespan, reconstruction projects are identified. The PMP, and reconstruction projects meet the Town's Vision Statement goals of:

- Providing outstanding community services including police, fire, emergency medical, parks, recreation, water and transportation.
- Ensure a Town government accountable for its vision, mission and values.

The Town of Castle Rock annually budget's for the PMP to perform needed maintenance to the Town's street system. Maintenance work generally consists of asphalt patching, overlay, reconstruction, slurry seal, sidewalk, curb & gutter repair, concrete panel replacement, and other pavement preservation treatments. In 2011 Town Council approved the rotating Five Year Pavement Maintenance Program. The 2023 maintenance work will be performed at various locations within the East PMP regionalized area. Primary street maintenance is scheduled for Mikelson Blvd and Woodlands Blvd. All maintenance activities are summarized on the 2023 PMP map (**Attachment A**).

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000 for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. Staff is comfortable with the contingencies and believes the identified work can be managed to comply with the plans and specifications. Contingency amounts will only be used if needed during the project. Any remaining contingency may be used to further expand the scope of work.

Notification and Outreach Efforts

Staff has developed specific public coordination outreach to ensure that residences and businesses will understand construction impacts and how this may affect access to individual businesses and residences. Public outreach will occur in numerous forms such as; 1) The Public Outreach Open House, 2) Town newsletters, 3) HOA newsletters, 4) Town social media, 5) Door notifications, 6) Press releases, 7) the Town's website, and others. Residents and businesses will be notified of actual dates that work is to be completed adjacent to their properties, and traffic control plans will be developed and managed to ensure worker and public safety.

Town staff will host an in-house, Public Outreach Open House in March. This Public Outreach Open House will consist of detailed maps of the 2023 maintenance work to let concerned residents know which streets will receive treatments and how it may affect them. This year's PMP Open House will be held at The Ridge House - Founder's Village, 4501 Enderud Blvd. Staff plans to coordinate with neighborhood Home Owners Association's (HOA). Furthermore, press releases will be published before the start of the PMP construction season to notify the public of work locations and dates.

History of Past Town Council, Boards & Commissions, or Other Discussions

The Public Works Commission at their October 3, 2011 meeting voted unanimously to recommend to Town Council to adopt the proposed Five Year Pavement Maintenance Program, and the Overall Condition Index (OCI) goal to be set at 75 for primary streets and 70 for residential streets. The OCI is an average rating of each street's condition. This was done in an effort to minimize impacts of roadway maintenance to residents, and to reduce costs of work by concentrating in one area of Town. Town Council approved the Town's rotating five year PMP regionalized area plan for residential streets at the November 1, 2011 Town Council meeting. The Town's five-year regional plan divides the town into five regionalized areas. Primary streets can be included in any year of the five-year program. The PMP program will then annually rotate around these five areas excluding primary streets and downtown Castle Rock such that every fifth year repairs to an area's residential street system will occur. In addition to the regionalized Five Year Pavement Maintenance Program, the Public Works Department has developed the Strategic Asset Management Plan (SAMP) to maximize value from each asset for our stakeholders. Staff has begun making adjustments to the regionalized plan to better align with SAMP policies of working to obtain the lowest total lifecycle cost.

Discussion

The Town's goal for the PMP is to preserve and extend the life of the Town's streets by making the most cost effective annual improvements to selected street segments. These goals are met when proper street maintenance is administered to these segments.

Staff determines which streets require maintenance by evaluating the street's condition rating in addition to a subjective analysis. A pavement management program, Cartegraph's Pavement Asset Module, establishes these condition ratings. This program establishes a condition rating based on staff's field observation for the streets, and rates them from poor to excellent condition. Different types of street maintenance treatments, such as crack seal, slurry seal, mill & overlay, full depth reclamation, and reconstruction are identified based on the condition of each roadway.

One category of street maintenance is an asphalt mill and overlay. This maintenance treatment removes and replaces a layer of asphalt without compromising the original pavement section. This work is costlier than a slurry seal and normally will be done to a street that has more than one distress. The distresses include minor alligator or fatigue cracking, joint reflection cracking, longitudinal / transverse cracking, thermal cracking, potholes, raveling and rutting. This year the Town will complete approximately 41 lane-miles of mill & overlay, which is approximately 6% of the Town's streets. A lane-mile is a single lane width by a mile long.

The invitation to bid for construction of this project was advertised in December 2022. Bids were opened for the projects on January 19, 2023.

The Asphalt Overlay bids were checked for accuracy, references were checked, and all documents were reviewed for contract compliance. Staff believes that this bidder is qualified to perform the work associated with the respective maintenance contract. A summary of the individual contract with bid amount plus contingency and the contractor is shown on the following table:

2023 PMP RECOMMENDED AWARD

PROJECT	BID AMOUNT PLUS CONTINGENCY	CONTRACTOR
2023 Asphalt Overlay Project	\$7,255,348 + \$725,535 (10%) Contingency	Schmidt Construction Co. Castle Rock, CO
TOTAL	\$7,980,883	120-3140-431-40-35

It is anticipated that asphalt overlay will begin in early April.

Budget Impact

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction project is \$7,600,000, for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. The remaining budget of \$257,548 has been identified for the annual miscellaneous concrete project, and other miscellaneous asphalt and concrete needs.

Staff Recommendation

Staff is recommending that the Public Works Commission recommend to Town Council the acceptance of the bid for the 2023 Asphalt Overlay project, and approval of the construction contract with Schmidt Construction Co. for the amounts identified.

Proposed Motion

“I move to recommend to Town Council to approve a Resolution approving the Construction Contract between the Town of Castle Rock and Schmidt Construction CO for the 2023 Asphalt Overlay Project”

Alternate Motion

Item #: File #: PWC 2023-013

“I move to recommend to Town Council to approve a Resolution approving the Construction Contract between the Town of Castle Rock and Schmidt Construction CO for the 2023 Asphalt Overlay Project, with the following changes....”

Attachments

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

**TOWN OF CASTLE ROCK
CONSTRUCTION CONTRACT
(2023 Asphalt Overlay Project)**

THIS CONSTRUCTION CONTRACT ("Contract") is made between the **TOWN OF CASTLE ROCK**, a Colorado municipal corporation ("Town"), 100 N. Wilcox Street, Castle Rock, Colorado 80104 and **SCHMIDT CONSTRUCTION COMPANY**, a Colorado corporation, 2635 Delta Drive, Colorado Springs, Colorado 80910 ("Contractor").

In consideration of these mutual covenants and conditions, the Town and Contractor agree as follows:

SCOPE OF WORK The Contractor shall execute the entire Work described in the Contract.

CONTRACT The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, written or oral representations and agreements. The Contract incorporates the following Contract Documents. In resolving inconsistencies among two or more of the Contract Documents, precedence will be given in the same order as enumerated.

LIST OF CONTRACT DOCUMENTS

The Contract Documents, except for Modifications issued after execution of this Contract, are:

1. Change Orders
2. Notice to Proceed
3. Construction Contract
4. General Conditions
5. Where applicable, Davis-Bacon Act Wage Determinations
6. The following Addenda, if any:

2023 Facilities – 1 Addendum

7. Special Conditions of the Contract:
 - a. ProjSec105 No open excavation
 - b. ProjSec107 Public Notification
 - c. ProjSec202 Temporary Pavement Marking
 - d. ProjSec627 Pavement Marking
 - e. ProjSec627 Preformed Thermoplastic
8. Notice of Award;
9. Invitation to Bid;
10. Information and Instructions to Bidders;
11. Notice of Substantial Completion;
12. Notice of Construction Completion;
13. Proposal Forms, including Bid Schedules;

14. Performance, and Labor and Material Payment Bonds;
15. Performance Guarantee; and
16. Insurance Certificates.

CONTRACT PRICE. The Town shall pay the Contractor for performing the Work and the completion of the Project according to the Contract, subject to Change Orders as approved in writing by the Town, under the guidelines in the General Conditions. The Town will pay **\$7,255,348.00** ("Contract Price"), to the Contractor, subject to full and satisfactory performance of the terms and conditions of the Contract. The Contract Price is provisional based on the quantities contained in the Bid attached as *Exhibit 1*. The final Contract Price shall be adjusted to reflect actual quantities incorporated into the Work at the specified unit prices. The Town has appropriated money equal or in excess of the Contract Price for this work.

TERM. The term shall commence upon execution of the Contract and terminate on December 31, 2023, unless an extension of the Contract is agreed to in writing by the Town and the Contractor.

COMPLETION OF WORK. The Contractor must begin work covered by the Contract within **3** working days from the date of the Notice to Proceed, and must complete work within **160** working days from and including the date of Notice to Proceed, according to the General Conditions, or by November 3, 2023, whichever date is earlier.

LIQUIDATED DAMAGES. If the Contractor fails to complete the Work by the date set for completion in the Contract, or if the completion date is extended by a Change Order, by the date set in the Change Order, the Town may permit the Contractor to proceed, and in such case, may deduct the sum of **\$2,400.00** for each day that the Work shall remain uncompleted from monies due or that may become due the Contractor. This sum is not a penalty but is a reasonable estimate of liquidated damages.

The parties agree that, under all of the circumstances, the daily basis and the amount set for liquidated damages is a reasonable and equitable estimate of all the Town's actual damages for delay. The Town expends additional personnel effort in administering the Contract or portions of the Work that are not completed on time, and has the cost of field and office engineering, inspecting, and interest on financing and such efforts and the costs thereof are impossible to accurately compute. In addition, some, if not all, citizens of Castle Rock incur personal inconvenience and lose confidence in their government as a result of public projects or parts of them not being completed on time, and the impact and damages, certainly serious in monetary as well as other terms are impossible to measure.

SERVICE OF NOTICES. Notices to the Town are given if sent by registered or certified mail, postage prepaid, to the following address:

TOWN OF CASTLE ROCK
Town Attorney
100 N. Wilcox Street
Castle Rock, CO 80104

With a copy to: Legal@crgov.com

INSURANCE PROVISIONS. The Contractor must not begin any work until the Contractor obtains, at the Contractor's own expense, all required insurance as specified in the General Conditions. Such insurance must have the approval of the Town of Castle Rock as to limits, form and amount. *Certificate of Insurance ("COI") must be submitted along with the executed contract as **Exhibit 2**.*

RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify, save harmless, and defend the Town, its officers and employees, from and in all suits, actions or claims of any character brought because of: any injuries or damage received or sustained by any person, persons or property because of operations for the Town under the Contract; including but not limited to claims or amounts recovered from any infringements of patent, trademark, or copyright; or pollution or environmental liability. The Town may retain so much of the money due the Contractor under the Contract, as the Town considers necessary for such purpose. If no money is due, the Contractor's Surety may be held until such suits, actions, claims for injuries or damages have been settled. Money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that the Contractor and the Town are adequately protected by public liability and property damage insurance.

The Contractor also agrees to pay the Town all expenses, including attorney's fees, incurred to enforce this Responsibility for Damage Claim clause.

Nothing in the **INSURANCE PROVISIONS of the General Conditions** shall limit the Contractor's responsibility for payment of claims, liabilities, damages, fines, penalties, and costs resulting from its performance or nonperformance under the Contract.

STATUS OF CONTRACTOR. Contractor has completed the Affidavit of Independent Contractor Status, attached as **Exhibit 3**, and submitted same at the time of execution of this Agreement. The Contractor is performing all work under the Contract as an independent Contractor and not as an agent or employee of the Town. No employee or official of the Town will supervise the Contractor. The Contractor will not supervise any employee or official of the Town. The Contractor shall not represent that it is an employee or agent of the Town in any capacity. **The Contractor and its employees are not entitled to Town Workers' Compensation benefits and are solely responsible for federal and state income tax on money earned.** This is not an exclusive contract.

THIRD PARTY BENEFICIARIES. None of the terms or conditions in the Contract shall give or allow any claim, benefit, or right of action by any third person not a party to the Contract. Any person, except the Town or the Contractor, receiving services or benefits under the Contract is an incidental beneficiary only.

INTEGRATION. This contract integrates the entire understanding of the parties with respect to the matters set forth. No representations, agreements, covenants, warranties, or certifications,



express or implied, shall exist as between the parties, except as specifically set forth in this Contract.

DEFINITIONS. The Definitions in the General Conditions apply to the entire Contract unless modified within a Contract Document.

Executed this _____ day of _____, 20__.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jason Gray, Mayor

APPROVED AS TO FORM:

Michael J. Hyman, Town Attorney

CONTRACTOR:

SCHMIDT CONSTRUCTION COMPANY

By: _____

Title: _____

EXHIBIT 1

CONTRACTOR'S BID

Description of the Work

General Description - The work to be performed under this contract includes removal and replacement of existing concrete including concrete pavement, crossspan, sidewalk, curb and gutter, curb ramps, asphalt patching, various depths and types of milling of existing asphalt pavement, and various thicknesses of asphalt paving within the streets listed in the Appendices or as directed by the Project Manager. The Contractor shall supply all labor, equipment, and materials necessary to complete the work in accordance with these specifications. The contract shall be awarded based on bids received for the base bid schedule A and the contract documents. **Night work shall be required and entail asphalt patching, asphalt milling, and asphalt overlay on 4th Street, between UPRR and Elbert Street, and 2nd Street between UPRR and Perry Street, as indicated in the maps. Work shall begin June 20, 2023 and be completed before July 21, 2023.** Contractor will be required to coordinate construction activities with adjacent businesses, trash removal companies, school district, HOA, Metro Districts, and other Town maintenance projects if applicable. The contractor shall commence work no later than three (3) calendar days from, and including, the date of the Notice to Proceed, and be construction complete (punchlist items, cleanup, and demobilize) within one hundred and sixty (160) working days from the date on the Notice to Proceed. If "Construction Completion" is not issued within the allotted contract time for the original scope of work, "Liquidated Damages" shall be assessed. When contract work is complete, the contractor shall commence work on punchlist items, cleanup, and demobilizing regardless of contract time remaining. Work shall take place between April 3, 2023 and November 3, 2023. A schedule of sequencing of all work shall be submitted at or before the project pre-construction meeting, and approved by the Town prior to issuance of Notice to Proceed.

Project Specials for the Asphalt Overlay bid book

Proj.Sec105 No open excavation
Proj.Sec107 Public Notification
~~Proj.Sec109 Asphalt Cement cost Adjustment~~
Proj.Sec202 Temporary Pavement Marking
Proj.Sec627 Pavement Marking
Proj.Sec627 Performed Thermoplastic
~~Proj.Sec403 Asphalt Fibers~~

**2023 Asphalt Overlay Project
BID SCHEDULE**

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	ASPHALT PLANING (2.0")	SY	284,070	\$1.55	\$ 440,308.50
202B	ASPHALT PLANING (3.0") (MITCHELL STREET)	SY	23,292	\$2.15	\$ 50,077.80
202C	REMOVAL OF CURB AND GUTTER TYPE 2	LF	3,004	\$10.45	\$ 31,391.80
202D	REMOVAL OF CURB AND GUTTER & WALK	LF	4,917	\$16.25	\$ 79,901.25
202E	REMOVAL OF SIDEWALK	SY	874	\$18.30	\$ 15,994.20
202F	REMOVAL OF CURB RAMP	SY	4,434	\$20.15	\$ 89,345.10
202G	REMOVAL OF CONCRETE PAVEMENT	SY	453	\$30.55	\$ 13,839.15
203	UNCLASSIFIED EXCAVATION (CIP)(CONTINGENCY)	CY	150	\$77.90	\$ 11,685.00
210A	ADJUST MANHOLE (OVERLAY)	EA	75	\$166.00	\$ 12,450.00
210B	RESET MANHOLE (RESET MANHOLE RING AND ADJUST WITH RISER RINGS)(CONTINGENCY)	EA	100	\$593.00	\$ 59,300.00
210C	ADJUST VALVE BOX (OVERLAY)	EA	150	\$98.60	\$ 14,790.00
210D	REPLACE VALVE BOX (CONTINGENCY)	EA	50	\$371.00	\$ 18,550.00
210E	TYPE R INLET PAN (REMOVE AND REPLACE)	LF	19	\$79.40	\$ 1,508.60
210F	TYPE R INLET TOP (REPAIR)	SF	531	\$80.40	\$ 42,692.40
210G	CHASE DRAIN RESET	EA	3	\$1,221.00	\$ 3,663.00
304	AGGREGATE BASE COURSE (CLASS 6 RECYLCED COONCRETE)(CONTINGENCY)	CY	300	\$25.45	\$ 7,635.00
403A	HMA/WMA (LEVELING) (GR SX)(CONTINGENCY)	TON	20	\$162.00	\$ 3,240.00
403B	HMA/WMA (PATCHING) (GR S) (6") (PG 64-22)(75)(CIP)	TON	4,100	\$148.00	\$ 606,800.00
403C	HMA/WMA (2.0") (GR SX) (PG 58-28)(75)	SY	284,070	\$10.55	\$ 2,996,938.50
403D	HMA/WMA (3.0") (GR SX) (PG 58-28)(75) (MITCHELL STREET)	SY	23,292	\$15.45	\$ 359,861.40
412	CONCRETE PAVEMENT (10") (CROSSPAN) (HIGH EARLY)	SY	453	\$122.00	\$ 55,266.00
608A	CONCRETE SIDEWALK (6")	SY	874	\$71.25	\$ 62,272.50
608B	MOUNTABLE CURB CORNER RAMP (ADA) (CAST IRON)	SY	3,671	\$102.00	\$ 374,442.00
608C	MOUNTABLE CURB MID-BLOCK RAMP (ADA) (CAST IRON)	SY	763	\$102.00	\$ 77,826.00
609A	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF	2,814	\$34.60	\$ 97,364.40
609B	CURB AND GUTTER TYPE 2 (SECTION II-M)	LF	190	\$34.60	\$ 6,574.00
609C	MOUNTABLE CURB, GUTTER AND SIDEWALK 6' 6"	LF	3,748	\$68.20	\$ 255,613.60
609D	MOUNTABLE CURB, GUTTER AND SIDEWALK 7' 11"	LF	1,169	\$80.40	\$ 93,987.60
620	SANITARY FACILITY	LS	1	\$2,272.00	\$ 2,272.00
626	MOBILIZATION	LS	1	\$144,000.00	\$ 144,000.00
627A	PAVEMENT MARKINGS (PAINT)(6" White)	SF	2,700	\$0.80	\$ 2,160.00
627B	PAVEMENT MARKINGS (PAINT)(4" Double Yellow)	SF	7,000	\$0.80	\$ 5,600.00
627C	PAVEMENT MARKINGS (PAINT)(XWALK/STOPBARS)	SF	5,600	\$0.80	\$ 4,480.00
627D	PAVEMENT MARKINGS (SYMBOLS)(PREFORMED THERMOPLASTIC)	SF	300	\$22.20	\$ 6,660.00
627E	PAVEMENT MARKINGS (XWALK/STOPBAR)(PREFORMED THERMOPLASTIC)	SF	650	\$13.15	\$ 8,547.50
629	SURVEY MONUMENT RESET	EA	10	\$595.00	\$ 5,950.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$175,479.00	\$ 175,479.00
630B	VARIABLE MESSAGE SIGN (2 VMS PER DAY)	DY	210	\$136.35	\$ 28,633.50
720	MATERIALS SAMPLING & TESTING	LS	1	\$58,738.00	\$ 58,738.00
F/A	MINOR CONTRACT REVISIONS	LS	1	\$ 929,500.00	\$ 929,500.00

TOTAL PROJECT COST: \$7,255,337.80

TOTAL PROJECT COST IN WORDS: Seven Million, Two Hundred Fifty-Five Thousand, Three Hundred Thirty-Seven and 80/100

EXHIBIT 2

CONTRACTOR'S CERTIFICATE OF INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/6/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Hylant - Detroit 2401 W. Big Beaver Rd. Ste 400 Troy MI 48084	CONTACT NAME: PHONE (A/C, No. Ext): 248-643-8750 FAX (A/C, No): E-MAIL ADDRESS: susan.thompson@hylant.com
INSURED Schmidt Construction Co. 2635 Delta Drive Colorado Springs, CO 80910	INSURER(S) AFFORDING COVERAGE INSURER A: Old Republic Insurance Company INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES**CERTIFICATE NUMBER:** 1844427396**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Broad Form P.D. GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:	Y		MWZY31417522	10/1/2022	10/1/2023	EACH OCCURRENCE \$ 5,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 0 PERSONAL & ADV INJURY \$ 5,000,000 GENERAL AGGREGATE \$ 10,000,000 PRODUCTS - COMP/OP AGG \$ 5,000,000 Project Aggregate \$ 5,000,000
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS			MWTB31417322	10/1/2022	10/1/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 5,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
A	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input type="checkbox"/>	N/A	MWXS31417422	10/1/2022	10/1/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: 2023 Asphalt Overlay

The Town, its officers and employees are additional insured with respect to general liability where required by written contract or agreement.

CERTIFICATE HOLDER**CANCELLATION**Town of Castle Rock
Attn: Public Works Department
4175 Castleton Court
Castle Rock CO 80109

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Nicholas R. Hylant

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EXHIBIT 3

TOWN OF CASTLE ROCK AFFIDAVIT OF INDEPENDENT CONTRACTOR STATUS

I, _____, an authorized representative of **Schmidt Construction Company**, holding legal authority to sign this Affidavit declare under oath that I am 18 years or older and have the capacity to sign this Affidavit.

In accordance with Section 8-70-115, C.R.S., I certify the following:

- With respect to the Agreement, **Schmidt Construction Company** represents and warrants that it is its express intention to be employed as an independent contractor of the Town of Castle Rock (the “Town”) for purposes of performing the work or services which are the subject of the Agreement. **Schmidt Construction Company** understands and confirms that the Town reasonably relied on this intention in entering into the Agreement.
- The Town does not require **Schmidt Construction Company** work exclusively for the Town, except that **Schmidt Construction Company** may choose to work exclusively for the Town for a finite period of time specified in the document.
- The Town does not establish a quality standard for the work or services performed pursuant to the Agreement, except that the Town may provide plans and specifications regarding the work but cannot oversee the actual work or provide instruction as to how the work is performed.
- The Town does not pay a salary or hourly rate but rather a fixed or contract rate, as noted in the terms and conditions of the Agreement, and any Exhibits made part of the Agreement.
- The Town cannot terminate the work or services performed during the contract period unless otherwise agreed to in the terms and conditions of the Agreement.
- **Schmidt Construction Company** is not provided with anything, if at all, more than minimal training from the Town.
- The Town does not provide **Schmidt Construction Company** with tools or benefits for the performance of the work or services which are the subject of the Agreement, except materials and equipment may be supplied.
- The Town does not dictate the time of performance, except that a completion schedule and a range of mutually agreeable work hours may be established in the Agreement.
- The Town issues checks payable to **Schmidt Construction Company** a party to the Agreement; and the Town does not combine their business operations in any way with the **Schmidt Construction Company’s** business, but instead maintains such operations as separate and distinct.

- **Schmidt Construction Company** understands that if a professional license to practice a particular occupation under the laws of the State of Colorado requires the exercise of a supervisory function with regard to the work of services performed under this Agreement, such supervisory role shall not affect the independent contractor relationship with the Town.
- **SCHMIDT CONSTRUCTION COMPANY UNDERSTANDS THAT NEITHER SCHMIDT CONSTRUCTION COMPANY NOR ITS EMPLOYEES ARE ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS OF THE TOWN.**
- **SCHMIDT CONSTRUCTION COMPANY UNDERSTANDS THAT IT IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THE AGREEMENT.**

CONTRACTOR:

SCHMIDT CONSTRUCTION COMPANY

By: _____

Name

STATE OF COLORADO)

) ss.

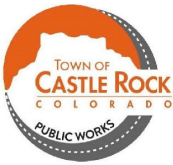
COUNTY OF _____)

The foregoing instrument as acknowledged before me this ____ day of _____,
20__ by _____ as _____ of the above mentioned Contractor.

Witness my official hand and seal.

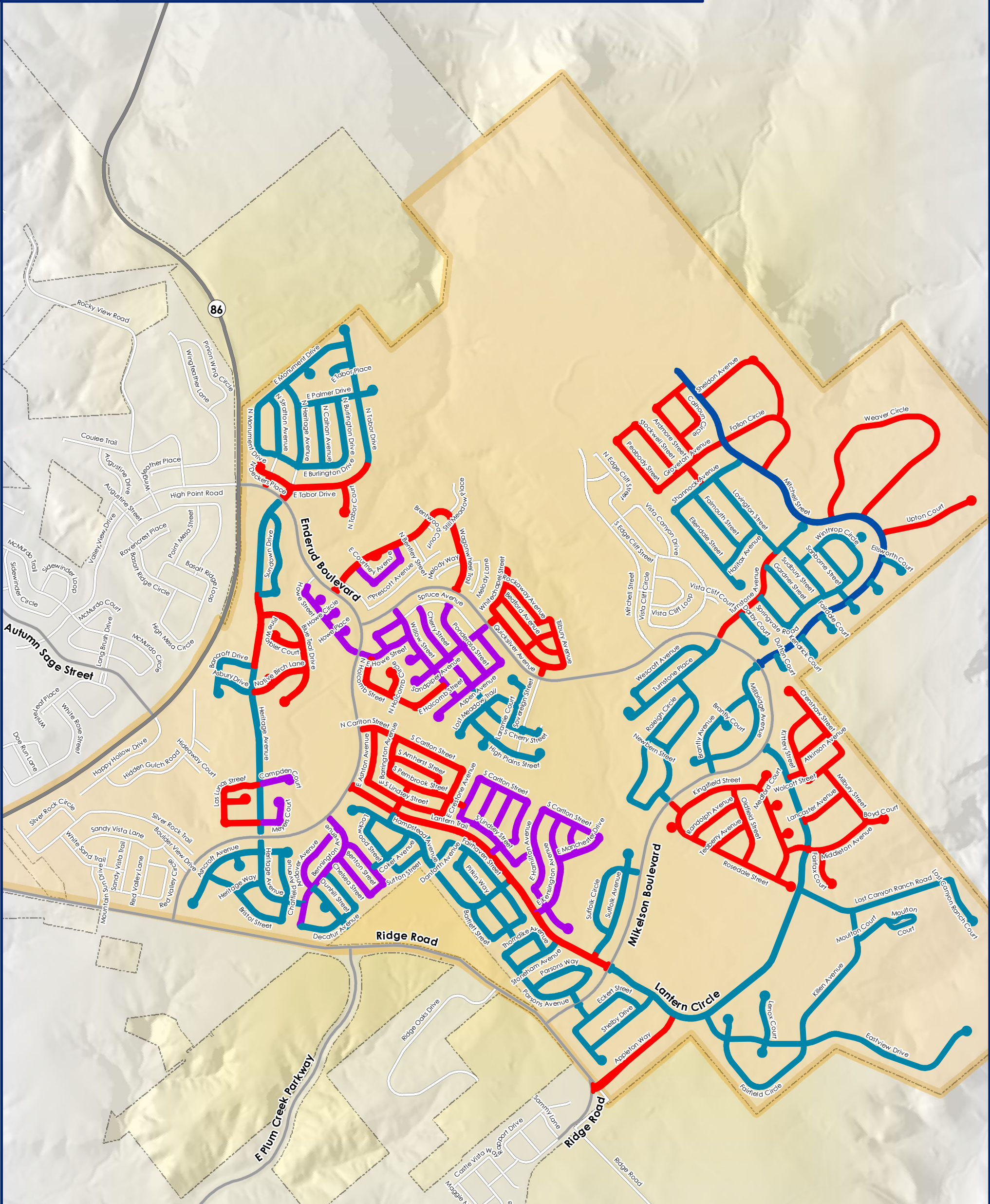
My commission expires:

Notary Public



RECOMMENDED PAVEMENT TREATMENTS

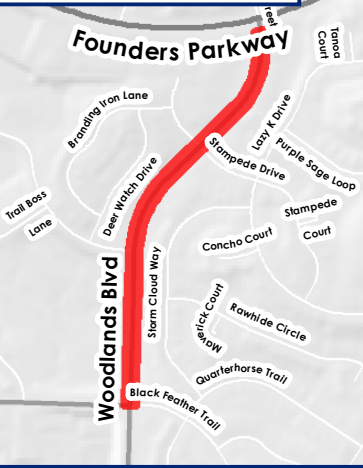
PMP East, Downtown and Primary Regions (Total Budget- \$18,500,000)



Downtown Treatments



Woodlands Blvd Slurry Seal



Mikelson Blvd- Northbound Reconstruction



PMP East Treatments

- 2in Mill and Overlay
- 3in Mill and Overlay
- Asphalt Slurry Seal
- Roadway Reconstruction

- PMP East Region (2023)
- Town Limits



Disclaimer: The data presented has been compiled from various sources, each of which introduces varying degrees of inaccuracies or inconsistencies. Such discrepancies in data are inherent and in supplying this product to the public the Town of Castle Rock assumes no liability for its use or accuracy. For questions or comments regarding omissions, corrections, or updates please visit CRgov.com/directory for contact information.

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2023 Asphalt Overlay Project Bid Comparison																	
	BID SCHEDULE A - ASPHALT OVERLAY			CONTRACTOR BID AVG.	CONTRACTOR AVG. TOTAL COST	PUBLIC WORKS ESTIMATE		SCHIMDT CONSTRUCTION		ALPINE CIVIL CONSTRUCTION		MARTIN MARIETTA		ELITE SURFACE INFRASTRUCTURE		HOLCIM-WCR, INC	
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	AVG. COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
202A	ASPHALT PLANING (2.0")	SY	284,070	\$2.38	\$676,086.60	\$2.10	\$596,547.00	\$1.55	\$440,308.50	\$2.25	\$639,157.50	\$2.70	\$766,989.00	\$2.65	\$752,785.50	\$2.75	\$781,192.50
200B	ASPHALT PLANING (3.0") (MITCHELL ST)	SY	23,292	\$3.45	\$80,357.40	\$2.75	\$64,053.00	\$2.15	\$50,077.80	\$3.10	\$72,205.20	\$4.20	\$97,826.40	\$3.95	\$92,003.40	\$3.85	\$89,674.20
202C	REMOVAL OF CURB AND GUTTER TYPE 2	LF	3,004	\$9.77	\$29,349.08	\$13.05	\$39,202.20	\$10.45	\$31,391.80	\$5.00	\$15,020.00	\$11.10	\$33,344.40	\$11.30	\$33,945.20	\$11.00	\$33,044.00
202D	REMOVAL OF CURB AND GUTTER & WALK	LF	4,917	\$14.43	\$70,952.31	\$17.50	\$86,047.50	\$16.25	\$79,901.25	\$16.00	\$78,672.00	\$11.10	\$54,578.70	\$17.80	\$87,522.60	\$11.00	\$54,087.00
202E	REMOVAL OF SIDEWALK	SY	874	\$19.95	\$17,836.30	\$26.75	\$23,379.50	\$18.30	\$15,994.20	\$20.00	\$17,480.00	\$17.80	\$17,557.20	\$26.15	\$22,855.10	\$17.50	\$15,295.00
202F	REMOVAL OF CURB RAMP	SY	4,434	\$21.36	\$94,710.24	\$27.00	\$119,718.00	\$20.15	\$89,345.10	\$25.00	\$110,850.00	\$17.80	\$78,925.20	\$26.35	\$116,835.90	\$17.50	\$77,595.00
202G	REMOVAL OF CONCRETE PAVEMENT	SY	453	\$26.87	\$12,172.11	\$21.00	\$9,513.00	\$30.55	\$13,839.15	\$40.00	\$18,120.00	\$17.80	\$8,063.40	\$28.50	\$12,910.50	\$17.50	\$7,927.50
203	UNCLASSIFIED EXCAVATION (CIP)(CONTINGENCY)	CY	150	\$51.90	\$7,785.00	\$75.00	\$11,250.00	\$77.90	\$11,685.00	\$22.00	\$3,300.00	\$55.75	\$8,362.50	\$49.25	\$7,387.50	\$54.60	\$8,190.00
210A	ADJUST MANHOLE (OVERLAY)	EA	75	\$259.00	\$19,425.00	\$182.00	\$13,650.00	\$166.00	\$12,450.00	\$750.00	\$56,250.00	\$165.00	\$12,375.00	\$104.00	\$7,800.00	\$110.00	\$8,250.00
210B	RESET MANHOLE (RESET MANHOLE RING AND ADJUST WITH RISER RINGS)(CONTINGENCY)	EA	100	\$636.60	\$63,660.00	\$643.00	\$64,300.00	\$593.00	\$59,300.00	\$650.00	\$65,000.00	\$710.00	\$71,000.00	\$540.00	\$54,000.00	\$690.00	\$69,000.00
210C	ADJUST VALVE BOX (OVERLAY)	EA	150	\$125.72	\$18,858.00	\$85.00	\$12,750.00	\$98.60	\$14,790.00	\$300.00	\$45,000.00	\$83.00	\$12,450.00	\$62.00	\$9,300.00	\$85.00	\$12,750.00
210D	REPLACE VALVE BOX (CONTINGENCY)	EA	50	\$412.20	\$20,610.00	\$510.00	\$25,500.00	\$371.00	\$18,550.00	\$450.00	\$22,500.00	\$530.00	\$26,500.00	\$390.00	\$19,500.00	\$320.00	\$16,000.00
210E	TYPE R INLET PAN (REMOVE AND REPLACE)	LF	19	\$90.98	\$1,728.62	\$83.00	\$1,577.00	\$79.40	\$1,508.60	\$85.00	\$1,615.00	\$100.00	\$1,900.00	\$90.50	\$1,719.50	\$100.00	\$1,900.00
210F	TYPE R INLET TOP (REPAIR)	SF	531	\$74.83	\$39,734.73	\$105.00	\$55,755.00	\$80.40	\$42,692.40	\$60.00	\$31,860.00	\$77.00	\$40,887.00	\$80.00	\$42,480.00	\$76.75	\$40,754.25
210G	CHASE DRAIN RESET	EA	3	\$2,690.20	\$8,070.60	\$775.00	\$2,325.00	\$1,221.00	\$3,663.00	\$500.00	\$1,500.00	\$5,570.00	\$16,710.00	\$660.00	\$1,980.00	\$5,500.00	\$16,500.00
304	AGGREGATE BASE COURSE (CLASS 6 RECYLCED COONCRETE)(CONTINGENCY)	CY	300	\$42.24	\$12,672.00	\$75.00	\$22,500.00	\$25.45	\$7,635.00	\$55.00	\$16,500.00	\$34.00	\$10,200.00	\$64.00	\$19,200.00	\$32.75	\$9,825.00
403A	HMA/WMA (LEVELING) (GR SX)(CONTINGENCY)	TON	20	\$179.75	\$3,595.00	\$175.00	\$3,500.00	\$162.00	\$3,240.00	\$120.00	\$2,400.00	\$183.00	\$3,660.00	\$98.25	\$1,965.00	\$335.50	\$6,710.00
403B	HMA/WMA (PATCHING) (GR S) (6")(PG 64-22)(75)(CIP)	TON	4,100	\$147.23	\$603,643.00	\$186.00	\$762,600.00	\$148.00	\$606,800.00	\$92.50	\$379,250.00	\$146.00	\$598,600.00	\$180.65	\$740,665.00	\$169.00	\$692,900.00
403C	HMA/WMA (2.0") (GR SX) (PG 58-28)(75)	SY	284,070	\$10.78	\$3,062,274.60	\$11.00	\$3,124,770.00	\$10.55	\$2,996,938.50	\$10.00	\$2,840,700.00	\$10.50	\$2,982,735.00	\$10.75	\$3,053,752.50	\$12.10	\$3,437,247.00
403D	HMA/WMA (3.0") (GR SX) (PG 58-28)(75) (MITCHELL ST)	SY	23,292	\$16.27	\$378,960.84	\$18.50	\$430,902.00	\$15.45	\$359,861.40	\$15.25	\$355,203.00	\$15.50	\$361,026.00	\$15.90	\$370,342.80	\$19.25	\$448,371.00
412	CONCRETE PAVEMENT (10") (CROSSPAN) (HIGH EARLY)	SY	453	\$137.60	\$62,332.80	\$175.00	\$79,275.00	\$122.00	\$55,266.00	\$142.00	\$64,326.00	\$134.00	\$60,702.00	\$159.00	\$72,027.00	\$131.00	\$59,343.00
608A	CONCRETE SIDEWALK (6")	SY	874	\$66.75	\$58,339.50	\$95.00	\$83,030.00	\$71.25	\$62,272.50	\$50.00	\$43,700.00	\$67.00	\$58,558.00	\$80.00	\$69,920.00	\$65.50	\$57,247.00
608B	MOUNTABLE CURB CORNER RAMP (ADA) (CAST IRON)	SY	3,671	\$136.48	\$501,018.08	\$155.00	\$569,005.00	\$102.00	\$374,442.00	\$150.00	\$550,650.00	\$145.00	\$532,295.00	\$143.40	\$526,421.40	\$142.00	\$521,282.00
608C	MOUNTABLE CURB MID-BLOCK RAMP (ADA) (CAST IRON)	SY	763	\$147.30	\$112,389.90	\$162.50	\$123,987.50	\$102.00	\$77,826.00	\$180.00	\$137,340.00	\$144.00	\$109,872.00	\$168.50	\$128,565.50	\$142.00	\$108,346.00
609A	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF	2,814	\$31.64	\$89,034.96	\$33.00	\$92,862.00	\$34.60	\$97,364.40	\$22.00	\$61,908.00	\$33.50	\$94,269.00	\$35.35	\$99,474.90	\$32.75	\$92,158.50
609B	CURB AND GUTTER TYPE 2 (SECTION II-M)	LF	190	\$38.21	\$7,145.90	\$33.00	\$6,270.00	\$34.60	\$6,574.00	\$25.00	\$4,750.00	\$44.50	\$8,455.00	\$40.30	\$7,657.00	\$46.65	\$8,293.50
609C	MOUNTABLE CURB, GUTTER AND SIDEWALK 6' 6"	LF	3,748	\$64.00	\$239,872.00	\$59.25	\$222,069.00	\$68.20	\$255,613.60	\$60.00	\$224,880.00	\$67.00	\$251,116.00	\$59.30	\$222,256.40	\$65.50	\$245,494.00
609D	MOUNTABLE CURB, GUTTER AND SIDEWALK 7' 11"	LF	1,169	\$71.18	\$83,209.42	\$62.00	\$72,478.00	\$80.40	\$93,987.60	\$75.00	\$87,675.00	\$67.00	\$78,323.00	\$68.00	\$79,492.00	\$65.50	\$76,569.50
620	SANITARY FACILITY	LS	1	\$7,554.40	\$7,554.40	\$3,200.00	\$3,200.00	\$2,272.00	\$2,272.00	\$5,000.00	\$5,000.00	\$5,400.00	\$5,400.00	\$2,100.00	\$2,100.00	\$23,000.00	\$23,000.00
626	MOBILIZATION	LS	1	\$185,234.00	\$185,234.00	\$175,000.00	\$175,000.00	\$144,000.00	\$144,000.00	\$348,800.00	\$348,800.00	\$80,000.00	\$80,000.00	\$187,120.00	\$187,120.00	\$166,250.00	\$166,250.00
627A	PAVEMENT MARKINGS (PAINT)(6" White)	SF	2,700	\$1.16	\$3,132.00	\$0.70	\$1,890.00	\$0.80	\$2,160.00	\$1.25	\$3,375.00	\$1.70	\$4,590.00	\$0.95	\$2,565.00	\$1.10	\$2,970.00
627B	PAVEMENT MARKINGS (PAINT)(4" Double Yellow)	SF	7,000	\$1.52	\$10,640.00	\$0.70	\$4,900.00	\$0.80	\$5,600.00	\$1.95	\$13,650.00	\$1.70	\$11,900.00	\$0.95	\$6,650.00	\$2.20	\$15,400.00
627C	PAVEMENT MARKINGS (PAINT)(XWALKS/STOP BARS)	SF	5,600	\$3.78	\$21,168.00	\$2.15	\$12,040.00	\$0.80	\$4,480.00	\$5.00	\$28,000.00	\$4.50	\$25,200.00	\$0.95	\$5,320.00	\$7.65	\$42,840.00
627D	PAVEMENT MARKINGS (SYMBOL)(PREFORMED THERMOPLASTIC)	SF	300	\$24.80	\$7,440.00	\$25.00	\$7,500.00	\$22.20	\$6,660.00	\$22.00	\$6,600.00	\$26.00	\$7,800.00	\$26.50	\$7,950.00	\$27.30	\$8,190.00
627E	PAVEMENT MARKINGS (XWALK/STOPBAR)(PREFORMED THERMOPLASTIC)	SF	650	\$16.74	\$10,881.00	\$15.00	\$9,750.00	\$13.15	\$8,547.50	\$20.00	\$13,000.00	\$18.50	\$12,025.00	\$15.65	\$10,172.50	\$16.40	\$10,660.00
629	SURVEY MONUMENT RESET	EA	10	\$564.00	\$5,640.00	\$700.00	\$7,000.00	\$595.00	\$5,950.00	\$550.00	\$5,500.00	\$385.00	\$3,850.00	\$790.00	\$7,900.00	\$500.00	\$5,000.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$286,562.80	\$286,562.80	\$325,000.00	\$325,000.00	\$175,479.00	\$175,479.00	\$100,000.00	\$100,000.00	\$319,310.00	\$319,310.00	\$434,025.00	\$434,025.00	\$404,000.00	\$404,000.00
630B	VARIABLE MESSAGE SIGN (2 VMS PER DAY)	DY	210	\$150.52	\$31,609.20	\$255.00	\$53,550.00	\$136.35	\$28,633.50	\$151.25	\$31,762.50	\$166.00	\$34,860.00	\$189.00	\$39,690.00	\$110.00	\$23,100.00
720	MATERIALS SAMPLING & TESTING	LS	1	\$77,964.60	\$77,964.60	\$70,000.00	\$70,000.00	\$58,738.00	\$58,738.00	\$76,500.00	\$76,500.00	\$86,100.00	\$86,100.00	\$88,235.00	\$88,235.00	\$80,250.00	\$80,250.00
F/A	MINOR CONTRACT REVISIONS	LS	1	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00

BID SCHEDULE A TOTAL PROJECT COST:

\$7,438,645.70

\$6,375,837.80

\$6,629,999.20

\$7,038,314.80

\$7,496,492.20

\$7,827,605.95

PERCENTAGE OVER/UNDER:

0.00%

-14.29%

-10.87%

MATH ERROR
-5.38%

0.78%

5.23%



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: File #: PWC 2023-014

To: Members of the Public Works Commission

From: Frank Castillo, Project Manager

Resolution Approving a Construction Contract for the 2023 Full Depth Reclamation Project

Executive Summary

Maintaining the Town's streets is important for public safety, travel efficiency, and as a means to extend the useable life of the streets. This overall project is the annual Pavement Maintenance Program (PMP) for the Town's street system and is intended to preserve the Town's street infrastructure. Preservation and rehabilitation treatments work to extend the lifespan of street segments at the lowest lifecycle cost. And, once street segments reach the end of their lifespan, reconstruction projects are identified. The PMP, and reconstruction projects meet the Town's Vision Statement goals of:

- Providing outstanding community services including police, fire, emergency medical, parks, recreation, water and transportation.
- Ensure a Town government accountable for its vision, mission and values.

The Town of Castle Rock annually budget's for the PMP to perform needed maintenance to the Town's street system. Maintenance work generally consists of asphalt patching, overlay, reconstruction, slurry seal, sidewalk, curb & gutter repair, concrete panel replacement, and other pavement preservation treatments. In 2011 Town Council approved the rotating Five Year Pavement Maintenance Program. The 2023 maintenance work will be performed at various locations within the East PMP regionalized area. Primary street maintenance is scheduled for Mikelson Blvd and Woodlands Blvd. All maintenance activities are summarized on the 2023 PMP map (**Attachment A**).

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000 for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. Staff is comfortable with the contingencies and believes the identified work can be managed to comply with the plans and specifications. Contingency amounts will only be used if needed during the project. Any remaining contingency may be used to further expand the scope of work.

Notification and Outreach Efforts

Staff has developed specific public coordination outreach to ensure that residences and businesses will understand construction impacts and how this may affect access to individual businesses and residences. Public outreach will occur in numerous forms such as; 1) The Public Outreach Open House, 2) Town newsletters, 3) HOA newsletters, 4) Town social media, 5) Door notifications, 6) Press releases, 7) the Town's website, and others. Residents and businesses will be notified of actual dates that work is to be completed adjacent to their properties, and traffic control plans will be developed and managed to ensure worker and public safety.

Town staff will host an in-house, Public Outreach Open House in March. This Public Outreach Open House will consist of detailed maps of the 2023 maintenance work to let concerned residents know which streets will receive treatments and how it may affect them. This year's PMP Open House will be held at The Ridge House - Founder's Village, 4501 Enderud Blvd. Staff plans to coordinate with neighborhood Home Owners Association's (HOA). Furthermore, press releases will be published before the start of the PMP construction season to notify the public of work locations and dates.

History of Past Town Council, Boards & Commissions, or Other Discussions

The Public Works Commission at their October 3, 2011 meeting voted unanimously to recommend to Town Council to adopt the proposed Five Year Pavement Maintenance Program, and the Overall Condition Index (OCI) goal to be set at 75 for primary streets and 70 for residential streets. The OCI is an average rating of each street's condition. This was done in an effort to minimize impacts of roadway maintenance to residents, and to reduce costs of work by concentrating in one area of Town. Town Council approved the Town's rotating five year PMP regionalized area plan for residential streets at the November 1, 2011 Town Council meeting. The Town's five-year regional plan divides the town into five regionalized areas. Primary streets can be included in any year of the five-year program. The PMP program will then annually rotate around these five areas excluding primary streets and downtown Castle Rock such that every fifth year repairs to an area's residential street system will occur. In addition to the regionalized Five Year Pavement Maintenance Program, the Public Works Department has developed the Strategic Asset Management Plan (SAMP) to maximize value from each asset for our stakeholders. Staff has begun making adjustments to the regionalized plan to better align with SAMP policies of working to obtain the lowest total lifecycle cost.

Discussion

The Town's goal for the PMP is to preserve and extend the life of the Town's streets by making the most cost effective annual improvements to selected street segments. These goals are met when proper street maintenance is administered to these segments.

Staff determines which streets require maintenance by evaluating the street's condition rating in addition to a subjective analysis. A pavement management program, Cartegraph's Pavement Asset Module, establishes these condition ratings. This program establishes a condition rating based on staff's field observation for the streets, and rates them from poor to excellent condition. Different types of street maintenance treatments, such as crack seal, slurry seal, mill & overlay, full depth reclamation, and reconstruction are identified based on the condition of each roadway.

A Street that has reached its end of service life, or has passed it, requires reconstruction, via full depth reclamation. Full depth reclamation involves removing the pavement section in its entirety, moisture conditioning the subgrade and installing a new pavement section. Reconstruction essentially begins a new service life for the pavement. This year the Town will perform approximately 15 lane-miles of reconstruction, which is approximately 2% of the Town's streets.

The invitation to bid for construction of the various projects was advertised in December 2022. Bids were opened for the projects on January 19, 2023.

Full Depth Reclamation bids were checked for accuracy, references were checked, and all documents were reviewed for contract compliance. Staff believes that the recommended bidder is qualified to perform the work associated with the respective maintenance contract. A summary of the individual contract with bid amount plus contingency and the contractor is shown on the following table:

2023 PMP RECOMMENDED AWARD

PROJECT	BID AMOUNT PLUS CONTINGENCY	CONTRACT
2023 Full Depth Reclamation Project	\$6,893,561 + \$689,356 (10%) Contingency	Schmidt Construcion Co. Castle Rock, CO
TOTAL	\$7,582,917	120-3175-431.40-35

It is anticipated that concrete repairs and the reconstructions will begin in early April.

Budget Impact

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000, for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. The remaining budget of \$257,458 for the annual miscellaneous concrete project, and other miscellaneous asphalt and concrete needs.

Staff Recommendation

Staff recommends that the Public Works Commission recommends to Town Council the acceptance of the bid for the 2023 Full Depth Reclamation Project, and approval of the construction contract with Schmidt Construction Co. for the amount identified.

Proposed Motion

"I move to recommend to Town Council to approve a Resolution approving the Construction Contract between the Town of Castle Rock and Schmidt Construction Co., for the 2023 Full Depth Reclamation Project"

Alternate Motion

"I move to recommend to Town Council to approve a Resolution approving the Construction Contract between the Town of Castle Rock and Schmidt Construction CO for the 2023 Full Depth Reclamation Project, with the following changes...."

Item #: **File #:** PWC 2023-014

Attachments

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

**TOWN OF CASTLE ROCK
CONSTRUCTION CONTRACT
(2023 Full Depth Reclamation Project)**

THIS CONSTRUCTION CONTRACT ("Contract") is made between the **TOWN OF CASTLE ROCK**, a Colorado municipal corporation ("Town"), 100 N. Wilcox Street, Castle Rock, Colorado 80104 and **SCHMIDT CONSTRUCTION COMPANY**, a Colorado corporation, 2635 Delta Drive, Colorado Springs, Colorado 80910 ("Contractor").

In consideration of these mutual covenants and conditions, the Town and Contractor agree as follows:

SCOPE OF WORK The Contractor shall execute the entire Work described in the Contract.

CONTRACT The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, written or oral representations and agreements. The Contract incorporates the following Contract Documents. In resolving inconsistencies among two or more of the Contract Documents, precedence will be given in the same order as enumerated.

LIST OF CONTRACT DOCUMENTS

The Contract Documents, except for Modifications issued after execution of this Contract, are:

1. Change Orders
2. Notice to Proceed
3. Construction Contract
4. General Conditions
5. Where applicable, Davis-Bacon Act Wage Determinations
6. The following Addenda, if any:

2023 Facilities – 1 Addendum

7. Special Conditions of the Contract:
 - a. ProjSec105 No open excavation
 - b. ProjSec107 Public Notification
 - c. ProjSec202 Temporary Pavement Marking
 - d. ProjSec310 Full Depth Reclamation
8. Notice of Award;
9. Invitation to Bid;
10. Information and Instructions to Bidders;
11. Notice of Substantial Completion;
12. Notice of Construction Completion;
13. Proposal Forms, including Bid Schedules;
14. Performance, and Labor and Material Payment Bonds;

15. Performance Guarantee; and
16. Insurance Certificates.

CONTRACT PRICE. The Town shall pay the Contractor for performing the Work and the completion of the Project according to the Contract, subject to Change Orders as approved in writing by the Town, under the guidelines in the General Conditions. The Town will pay **\$6,893,561.00** ("Contract Price"), to the Contractor, subject to full and satisfactory performance of the terms and conditions of the Contract. The Contract Price is provisional based on the quantities contained in the Bid attached as ***Exhibit 1***. The final Contract Price shall be adjusted to reflect actual quantities incorporated into the Work at the specified unit prices. The Town has appropriated money equal or in excess of the Contract Price for this work.

TERM. The term shall commence upon execution of the Contract and terminate on December 31, 2023, unless an extension of the Contract is agreed to in writing by the Town and the Contractor.

COMPLETION OF WORK. The Contractor must begin work covered by the Contract within **3** working days from the date of the Notice to Proceed, and must complete work within **160** working days from and including the date of Notice to Proceed, according to the General Conditions, or by November 3, 2023, whichever date is earlier.

LIQUIDATED DAMAGES. If the Contractor fails to complete the Work by the date set for completion in the Contract, or if the completion date is extended by a Change Order, by the date set in the Change Order, the Town may permit the Contractor to proceed, and in such case, may deduct the sum of **\$2,400.00** for each day that the Work shall remain uncompleted from monies due or that may become due the Contractor. This sum is not a penalty but is a reasonable estimate of liquidated damages.

The parties agree that, under all of the circumstances, the daily basis and the amount set for liquidated damages is a reasonable and equitable estimate of all the Town's actual damages for delay. The Town expends additional personnel effort in administering the Contract or portions of the Work that are not completed on time, and has the cost of field and office engineering, inspecting, and interest on financing and such efforts and the costs thereof are impossible to accurately compute. In addition, some, if not all, citizens of Castle Rock incur personal inconvenience and lose confidence in their government as a result of public projects or parts of them not being completed on time, and the impact and damages, certainly serious in monetary as well as other terms are impossible to measure.

SERVICE OF NOTICES. Notices to the Town are given if sent by registered or certified mail, postage prepaid, to the following address:

TOWN OF CASTLE ROCK
Town Attorney
100 N. Wilcox Street
Castle Rock, CO 80104

With a copy to: Legal@crgov.com

INSURANCE PROVISIONS. The Contractor must not begin any work until the Contractor obtains, at the Contractor's own expense, all required insurance as specified in the General Conditions. Such insurance must have the approval of the Town of Castle Rock as to limits, form and amount. *Certificate of Insurance ("COI") must be submitted along with the executed contract as **Exhibit 2**.*

RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify, save harmless, and defend the Town, its officers and employees, from and in all suits, actions or claims of any character brought because of: any injuries or damage received or sustained by any person, persons or property because of operations for the Town under the Contract; including but not limited to claims or amounts recovered from any infringements of patent, trademark, or copyright; or pollution or environmental liability. The Town may retain so much of the money due the Contractor under the Contract, as the Town considers necessary for such purpose. If no money is due, the Contractor's Surety may be held until such suits, actions, claims for injuries or damages have been settled. Money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that the Contractor and the Town are adequately protected by public liability and property damage insurance.

The Contractor also agrees to pay the Town all expenses, including attorney's fees, incurred to enforce this Responsibility for Damage Claim clause.

Nothing in the **INSURANCE PROVISIONS of the General Conditions** shall limit the Contractor's responsibility for payment of claims, liabilities, damages, fines, penalties, and costs resulting from its performance or nonperformance under the Contract.

STATUS OF CONTRACTOR. Contractor has completed the Affidavit of Independent Contractor Status, attached as ***Exhibit 3***, and submitted same at the time of execution of this Agreement. The Contractor is performing all work under the Contract as an independent Contractor and not as an agent or employee of the Town. No employee or official of the Town will supervise the Contractor. The Contractor will not supervise any employee or official of the Town. The Contractor shall not represent that it is an employee or agent of the Town in any capacity. **The Contractor and its employees are not entitled to Town Workers' Compensation benefits and are solely responsible for federal and state income tax on money earned.** This is not an exclusive contract.

THIRD PARTY BENEFICIARIES. None of the terms or conditions in the Contract shall give or allow any claim, benefit, or right of action by any third person not a party to the Contract. Any person, except the Town or the Contractor, receiving services or benefits under the Contract is an incidental beneficiary only.

INTEGRATION. This contract integrates the entire understanding of the parties with respect to the matters set forth. No representations, agreements, covenants, warranties, or certifications, express or implied, shall exist as between the parties, except as specifically set forth in this Contract.



DEFINITIONS. The Definitions in the General Conditions apply to the entire Contract unless modified within a Contract Document.

Executed this _____ day of _____, 20__.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jason Gray, Mayor

APPROVED AS TO FORM:

Michael J. Hyman, Town Attorney

CONTRACTOR:

SCHMIDT CONSTRUCTION COMPANY

By: _____

Title: _____

EXHIBIT 1

CONTRACTOR'S BID

Description of the Work

General Description - The work to be performed under this contract includes removal and replacement of existing concrete including crossspan, sidewalk, curb and gutter, curb ramps. Perform full depth reclamation, and various thicknesses of asphalt paving within the street(s) listed in the Appendices or as directed by the Project Manager. The Contractor shall supply all labor, equipment, and materials necessary to complete the work in accordance with these specifications. The contract shall be awarded based on bids received for Bid Schedule A and the contract documents. **Work on Mikelson Blvd shall begin May 30, and completed before July 14, to avoid school traffic issues.** Contractor will be required to coordinate construction activities with adjacent businesses, trash removal companies, school district, HOA, Metro Districts, and other Town maintenance projects if applicable. Contractor shall acquire all Town of Castle Rock and State of Colorado stormwater permits as applicable, approved TESC plans will be provided after notice of award is issued. The contractor shall commence work no later than three (3) calendar days from, and including, the date of the Notice to Proceed, and be construction complete (punchlist items, cleanup, and demobilize) within one hundred and sixty days (160) working days from the date on the Notice to Proceed. If "Construction Completion" is not issued within the allotted contract time for the original scope of work, "Liquidated Damages" shall be assessed. When contract work is complete, the contractor shall commence work on punchlist items, cleanup, and demobilizing regardless of contract time remaining. Work shall take place between April 3, 2023 and November 3, 2023. A schedule of sequencing of all work shall be submitted at or before the project pre-construction meeting, and approved by the Town prior to issuance of Notice to Proceed.

**2023 Full Depth Reclamation Project
Bid Schedule**

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB AND GUTTER TYPE 2	SY	2209	\$11.15	\$ 24,630.35
202B	REMOVAL OF CURB AND GUTTER & WALK	LF	11,300	\$14.20	\$ 160,460.00
202C	REMOVAL OF CONCRETE PAVEMENT	SY	900	\$30.40	\$ 27,360.00
202D	REMOVAL OF CURB RAMP	SY	3100	\$20.10	\$ 62,310.00
202E	REMOVAL OF SIDEWALK	SY	425	\$18.20	\$ 7,735.00
203A	UNCLASSIFIED EXCAVATION (CIP)(CONTINGENCY)	CY	500	\$19.70	\$ 9,850.00
203B	UNCLASSIFIED EXCAVATION (CIP)	CY	16,000	\$19.70	\$ 315,200.00
203C	TEST HOLE	HR	15	\$237.00	\$ 3,555.00
208A	STORM DRAIN INLET PROTECTION	LF	100	\$5.95	\$ 595.00
208B	VEHICLE TRACKING PAD	EA	7	\$2,267.00	\$ 15,869.00
208C	CONCRETE WASHOUT STRUCTURE	EA	10	\$304.00	\$ 3,040.00
210A	ADJUST MANHOLE (RECON)	EA	158	\$593.00	\$ 93,694.00
210B	REPLACE VALVE BOX (RECON)	EA	205	\$603.25	\$ 123,666.25
210C	TYPE R INLET PAN (REMOVE AND REPLACE)	LF	75	\$79.10	\$ 5,932.50
201D	TYPE R INLET TOP (REPAIR)	SF	350	\$80.10	\$ 28,035.00
304	AGGREGATE BASE COURSE (CLASS 6 RECYLCED CONCRETE)(CONTINGENCY)	CY	200	\$25.35	\$ 5,070.00
310	FULL DEPTH RECLAMATION (17") (MIKELSON BLVD)	SY	19,750	\$1.35	\$ 26,662.50
310A	FULL DEPTH RECLAMATION (12") (LOCAL RESIDENTIAL)	SY	93,900	\$1.25	\$ 117,375.00
403B	HMA/WMA (2.0") (GR SX) (PG 58-28) (75)(LOCAL RESIDENTIAL)	SY	93,900	\$10.65	\$ 1,000,035.00
403C	HMA/WMA (3.0") (GR SG) (PG 58-28) (75)(LOCAL RESIDENTIAL)	SY	93,900	\$15.40	\$ 1,446,060.00
403D	HMA/WMA (2.0") (GR SX) (PG 64-28) (75)(MIKELSON BLVD)	SY	19,750	\$10.60	\$ 209,350.00
403E	HMA/WMA (3.0") (GR SG) (PG 58-28) (75)(MIKELSON BLVD)	SY	19,750	\$15.10	\$ 298,225.00
403F	HMA/WMA (3.0") (GR SG) (PG 58-28) (75)(MIKELSON BLVD)	SY	19,750	\$15.10	\$ 298,225.00
412A	CONCRETE PAVEMENT (10") (CROSSPAN) (HIGH EARLY)	SY	270	\$122.00	\$ 32,940.00
412B	CONCRETE PAVEMENT (10")(FILLET)	SY	630	\$117.00	\$ 73,710.00
608A	CONCRETE SIDEWALK 6"	SY	425	\$71.00	\$ 30,175.00
608B	MOUNTABLE CURB CORNER RAMP (ADA) (CAST IRON)	SY	2850	\$106.00	\$ 302,100.00
608C	MOUNTABLE CURB MID-BLOCK RAMP (ADA) (CAST IRON)	SY	230	\$106.00	\$ 24,380.00
609A	CURB AND GUTTER TYPE 2 (SECTION I-B)	LF	571	\$34.50	\$ 19,699.50
609B	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF	1608	\$34.50	\$ 55,476.00
609C	CURB AND CUTTER TYPE 2 (SECTION II-M)	LF	30	\$50.70	\$ 1,521.00
609D	MOUNTABLE CURB, GUTTER AND SIDEWALK 6' 6"	LF	11,300	\$74.05	\$ 836,765.00
620	SANITARY FACILITY	LS	1	\$4,545.00	\$ 4,545.00
626	MOBILIZATION	LS	1	\$123,000.00	\$ 123,000.00
627A	PAVEMENT MARKING (PAINT) (4" WHITE)	SF	1,500	\$0.85	\$ 1,275.00
627B	PAVEMENT MARKING (PAINT) (6" WHITE)	SF	7,800	\$0.85	\$ 6,630.00
627C	PAVEMENT MARKINGS (PAINT)(XWALK/STOPBAR)	SF	3,000	\$0.85	\$ 2,550.00
627D	PAVEMENT MARKINGS (SYMBOLS) (PREFORMED THERMOPLASTIC)	SF	450	\$23.25	\$ 10,462.50
627E	PAVEMENT MARKINGS (CROSSWALK/STOP BARS) (PREFORMED THERMOPLASTIC)	SF	875	\$13.75	\$ 12,031.25
629	SURVEY MONUMENTATION	EA	8	\$593.00	\$ 4,744.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$197,187.00	\$ 197,187.00
630B	VARIABLE MESSAGE SIGN (2 VMS PER DAY)	DY	215	\$136.35	\$ 29,315.25
720	MATERIALS SAMPLING & TESTING	LS	1	\$64,620.00	\$ 64,620.00
F/A	GESC AND SWMP PERMITS	LS	1	\$ 2,500.00	\$ 2,500.00
F/A	MINOR CONTRACT REVISIONS/LANDSCAPE MODIFICATIONS	LS	1	\$ 775,000.00	\$ 775,000.00

TOTAL PROJECT COST: \$ 6,893,561.10

TOTAL PROJECT COST IN WORDS: Six Million Eight Hundred Ninety Three Thousand Five Hundred Sixty One and Ten Cents

EXHIBIT 2

CONTRACTOR'S CERTIFICATE OF INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/6/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Hylant - Detroit 2401 W. Big Beaver Rd. Ste 400 Troy MI 48084	CONTACT NAME: PHONE (A/C, No. Ext): 248-643-8750 FAX (A/C, No): E-MAIL ADDRESS: susan.thompson@hylant.com
INSURED Schmidt Construction Co. 2635 Delta Drive Colorado Springs, CO 80910	INSURER(S) AFFORDING COVERAGE INSURER A: Old Republic Insurance Company INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES**CERTIFICATE NUMBER:** 701219229**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Broad Form P.D. GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:	Y		MWZY31417522	10/1/2022	10/1/2023	EACH OCCURRENCE \$ 5,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 0 PERSONAL & ADV INJURY \$ 5,000,000 GENERAL AGGREGATE \$ 10,000,000 PRODUCTS - COMP/OP AGG \$ 5,000,000 Project Aggregate \$ 5,000,000
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS			MWTB31417322	10/1/2022	10/1/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 5,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> EXCESS LIAB DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
A	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input type="checkbox"/>	N/A	MWXS31417422	10/1/2022	10/1/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: 2023 Full Depth Reclamation

The Town, its officers and employees are additional insured with respect to general liability where required by written contract or agreement.

CERTIFICATE HOLDER**CANCELLATION**Town of Castle Rock
Attn: Public Works Department
4175 Castleton Court
Castle Rock CO 80109

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Nicholas R. Hylant

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EXHIBIT 3

TOWN OF CASTLE ROCK AFFIDAVIT OF INDEPENDENT CONTRACTOR STATUS

I, _____, an authorized representative of **Schmidt Construction Company**, holding legal authority to sign this Affidavit declare under oath that I am 18 years or older and have the capacity to sign this Affidavit.

In accordance with Section 8-70-115, C.R.S., I certify the following:

- With respect to the Agreement, **Schmidt Construction Company** represents and warrants that it is its express intention to be employed as an independent contractor of the Town of Castle Rock (the “Town”) for purposes of performing the work or services which are the subject of the Agreement. **Schmidt Construction Company** understands and confirms that the Town reasonably relied on this intention in entering into the Agreement.
- The Town does not require **Schmidt Construction Company** work exclusively for the Town, except that **Schmidt Construction Company** may choose to work exclusively for the Town for a finite period of time specified in the document.
- The Town does not establish a quality standard for the work or services performed pursuant to the Agreement, except that the Town may provide plans and specifications regarding the work but cannot oversee the actual work or provide instruction as to how the work is performed.
- The Town does not pay a salary or hourly rate but rather a fixed or contract rate, as noted in the terms and conditions of the Agreement, and any Exhibits made part of the Agreement.
- The Town cannot terminate the work or services performed during the contract period unless otherwise agreed to in the terms and conditions of the Agreement.
- **Schmidt Construction Company** is not provided with anything, if at all, more than minimal training from the Town.
- The Town does not provide **Schmidt Construction Company** with tools or benefits for the performance of the work or services which are the subject of the Agreement, except materials and equipment may be supplied.
- The Town does not dictate the time of performance, except that a completion schedule and a range of mutually agreeable work hours may be established in the Agreement.
- The Town issues checks payable to **Schmidt Construction Company** a party to the Agreement; and the Town does not combine their business operations in any way with the **Schmidt Construction Company’s** business, but instead maintains such operations as separate and distinct.

- **Schmidt Construction Company** understands that if a professional license to practice a particular occupation under the laws of the State of Colorado requires the exercise of a supervisory function with regard to the work of services performed under this Agreement, such supervisory role shall not affect the independent contractor relationship with the Town.
- **SCHMIDT CONSTRUCTION COMPANY UNDERSTANDS THAT NEITHER SCHMIDT CONSTRUCTION COMPANY NOR ITS EMPLOYEES ARE ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS OF THE TOWN.**
- **SCHMIDT CONSTRUCTION COMPANY UNDERSTANDS THAT IT IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THE AGREEMENT.**

CONTRACTOR:

SCHMIDT CONSTRUCTION COMPANY

By: _____

Name

STATE OF COLORADO)

) ss.

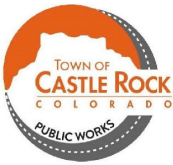
COUNTY OF _____)

The foregoing instrument as acknowledged before me this ___ day of _____,
20__ by _____ as _____ of the above mentioned Contractor.

Witness my official hand and seal.

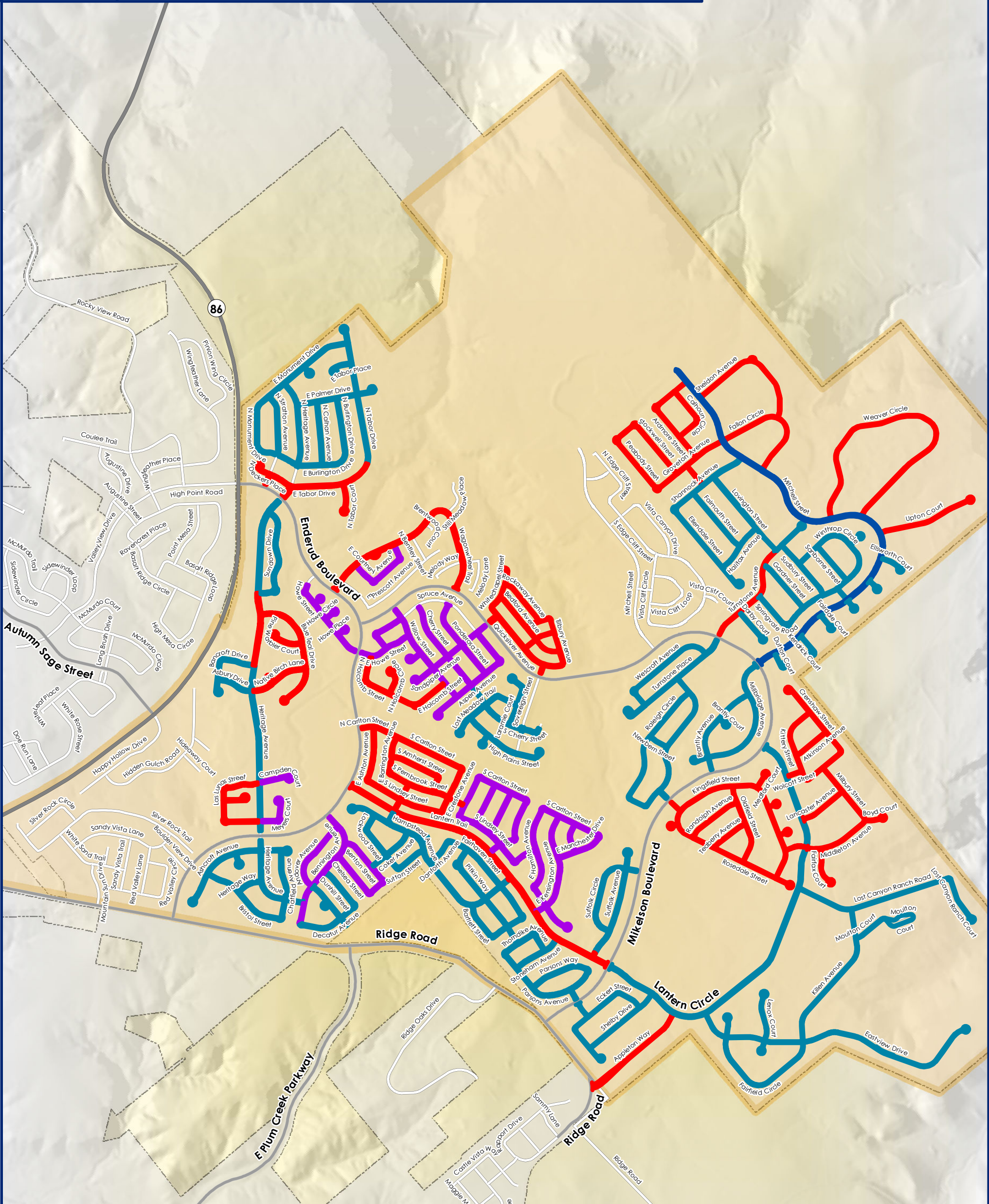
My commission expires:

Notary Public



RECOMMENDED PAVEMENT TREATMENTS

PMP East, Downtown and Primary Regions (Total Budget- \$18,500,000)



Downtown Treatments



Woodlands Blvd Slurry Seal



Mikelson Blvd- Northbound Reconstruction



PMP East Treatments

- 2in Mill and Overlay
- 3in Mill and Overlay
- Asphalt Slurry Seal
- Roadway Reconstruction

- PMP East Region (2023)
- Town Limits



Disclaimer: The data presented has been compiled from various sources, each of which introduces varying degrees of inaccuracies or inconsistencies. Such discrepancies in data are inherent and in supplying this product to the public the Town of Castle Rock assumes no liability for its use or accuracy. For questions or comments regarding omissions, corrections, or updates please visit CRgov.com/directory for contact information.

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2023 Full Depth Reclamation Project Bid Comparison

BID SCHEDULE A - FDR				CONTRACTOR BID AVG.	CONTRACTOR AVG. TOTAL COST	PUBLIC WORKS ESTIMATE		Schmidt Construction		Alpine		ESI		Martin Marietta		Chavez Construction		Brannan Sand and Gravel		CASI	
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	AVG. COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB AND GUTTER TYPE 2	SY	2,209	\$12.16	\$26,861.44	\$9.75	\$21,537.75	\$11.15	\$24,630.35	\$5.00	\$11,045.00	\$10.85	\$23,967.65	\$13.30	\$29,379.70	\$20.50	\$45,284.50	\$15.41	\$34,040.69	\$9.00	\$19,881.00
202B	REMOVAL OF CURB AND GUTTER & WALK	LF	11,300	\$14.50	\$163,850.00	\$17.25	\$194,925.00	\$14.20	\$160,460.00	\$15.50	\$175,150.00	\$16.10	\$181,930.00	\$11.20	\$126,560.00	\$15.50	\$175,150.00	\$12.84	\$145,092.00	\$15.00	\$169,500.00
202C	REMOVAL OF CONCRETE PAVEMENT	SY	900	\$30.16	\$27,144.00	\$21.00	\$18,900.00	\$30.40	\$27,360.00	\$40.00	\$36,000.00	\$26.40	\$23,760.00	\$18.00	\$16,200.00	\$36.00	\$32,400.00	\$20.54	\$18,486.00	\$32.00	\$28,800.00
202D	REMOVAL OF CURB RAMP	SY	3,100	\$22.50	\$69,750.00	\$24.00	\$74,400.00	\$20.10	\$62,310.00	\$25.00	\$77,500.00	\$26.40	\$81,840.00	\$18.00	\$55,800.00	\$23.00	\$71,300.00	\$20.54	\$63,674.00	\$25.00	\$77,500.00
202E	REMOVAL OF SIDEWALK	SY	425	\$20.19	\$8,580.75	\$22.00	\$9,350.00	\$18.20	\$7,735.00	\$20.00	\$8,500.00	\$23.75	\$10,093.75	\$18.00	\$7,650.00	\$21.00	\$8,925.00	\$20.54	\$8,729.50	\$22.00	\$9,350.00
203A	UNCLASSIFIED EXCAVATION (CIP)(CONTINGENCY)	CY	500	\$35.19	\$17,595.00	\$27.50	\$13,750.00	\$19.70	\$9,850.00	\$22.00	\$11,000.00	\$49.25	\$24,625.00	\$56.00	\$28,000.00	\$29.00	\$14,500.00	\$73.00	\$36,500.00	\$25.00	\$12,500.00
203B	UNCLASSIFIED EXCAVATION (CIP)	CY	16,000	\$26.39	\$422,240.00	\$30.00	\$480,000.00	\$19.70	\$315,200.00	\$12.00	\$192,000.00	\$23.50	\$376,000.00	\$43.75	\$700,000.00	\$33.00	\$528,000.00	\$56.10	\$897,600.00	\$45.00	\$720,000.00
203C	TEST HOLE	HR	15	\$288.80	\$4,332.00	\$290.00	\$4,350.00	\$237.00	\$3,555.00	\$250.00	\$3,750.00	\$450.00	\$6,750.00	\$382.00	\$5,730.00	\$125.00	\$1,875.00	\$258.06	\$3,870.90	\$325.00	\$4,875.00
208A	STORM DRAIN INLET PROTECTION	LF	100	\$31.25	\$3,125.00	\$35.50	\$3,550.00	\$5.95	\$595.00	\$10.00	\$1,000.00	\$23.30	\$2,330.00	\$83.00	\$8,300.00	\$34.00	\$3,400.00	\$12.65	\$1,265.00	\$80.00	\$8,000.00
208B	VEHICLE TRACKING PAD	EA	7	\$1,341.40	\$9,389.80	\$700.00	\$4,900.00	\$2,267.00	\$15,869.00	\$2,000.00	\$14,000.00	\$960.00	\$6,720.00	\$830.00	\$5,810.00	\$650.00	\$4,550.00	\$3,161.29	\$22,129.03	\$2,000.00	\$14,000.00
208C	CONCRETE WASHOUT STRUCTURE	EA	10	\$924.80	\$9,248.00	\$2,275.00	\$22,750.00	\$304.00	\$3,040.00	\$950.00	\$9,500.00	\$720.00	\$7,200.00	\$2,300.00	\$23,000.00	\$350.00	\$3,500.00	\$4,425.81	\$44,258.10	\$1,250.00	\$12,500.00
210A	ADJUST MANHOLE (RECON)	EA	158	\$642.60	\$101,530.80	\$660.00	\$104,280.00	\$593.00	\$93,694.00	\$750.00	\$118,500.00	\$540.00	\$85,320.00	\$865.00	\$136,670.00	\$465.00	\$73,470.00	\$1,325.19	\$209,380.02	\$6,000.00	\$948,000.00
210B	REPLACE VALVE BOX (RECON)	EA	205	\$463.65	\$95,048.25	\$510.00	\$104,550.00	\$603.25	\$123,666.25	\$450.00	\$92,250.00	\$390.00	\$79,950.00	\$375.00	\$76,875.00	\$500.00	\$102,500.00	\$1,031.83	\$211,525.15	\$475.00	\$97,375.00
210C	TYPE R INLET PAN (REMOVE AND REPLACE)	LF	75	\$90.02	\$6,751.50	\$105.00	\$7,875.00	\$79.10	\$5,932.50	\$80.00	\$6,000.00	\$90.00	\$6,750.00	\$101.00	\$7,575.00	\$100.00	\$7,500.00	\$115.54	\$8,665.50	\$95.00	\$7,125.00
210D	TYPE R INLET TOP (REPAIR)	SF	350	\$79.02	\$27,657.00	\$90.00	\$31,500.00	\$80.10	\$28,035.00	\$60.00	\$21,000.00	\$82.50	\$28,875.00	\$78.50	\$27,475.00	\$94.00	\$32,900.00	\$89.86	\$31,451.00	\$80.00	\$28,000.00
304	AGGREGATE BASE COURSE (CLASS 6 RECYLCED CONCRETE)(CONTINGENCY)	CY	200	\$45.14	\$9,028.00	\$80.25	\$16,050.00	\$25.35	\$5,070.00	\$60.00	\$12,000.00	\$66.85	\$13,370.00	\$33.50	\$6,700.00	\$40.00	\$8,000.00	\$101.13	\$20,226.00	\$75.00	\$15,000.00
310A	FULL DEPTH RECLAMATION (17") (MIKELSON BLVD)	SY	19,750	\$3.09	\$61,027.50	\$4.10	\$80,975.00	\$1.35	\$26,662.50	\$3.75	\$74,062.50	\$3.85	\$76,037.50	\$3.75	\$74,062.50	\$2.75	\$54,312.50	\$4.39	\$86,702.50	\$2.85	\$56,287.50
310B	FULL DEPTH RECLAMATION (12") (LOCAL RESIDENTIAL)	SY	93,900	\$2.73	\$256,347.00	\$3.60	\$338,040.00	\$1.25	\$117,375.00	\$2.75	\$258,225.00	\$3.55	\$333,345.00	\$3.60	\$338,040.00	\$2.50	\$234,750.00	\$4.13	\$387,807.00	\$2.45	\$230,055.00
403B	HMA/WMA (2.0") (GR SX) (PG 58-28) (75)(LOCAL RESIDENTIAL)	SY	93,900	\$11.04	\$1,036,656.00	\$12.00	\$1,126,800.00	\$10.65	\$1,000,035.00	\$10.00	\$939,000.00	\$10.80	\$1,014,120.00	\$10.75	\$1,009,425.00	\$13.00	\$1,220,700.00	\$11.03	\$1,035,717.00	\$14.20	\$1,333,380.00
403C	HMA/WMA (3.0") (GR SG) (PG 58-28) (75)(LOCAL RESIDENTIAL)	SY	93,900	\$15.65	\$1,469,535.00	\$18.50	\$1,737,150.00	\$15.40	\$1,446,060.00	\$15.00	\$1,408,500.00	\$14.85	\$1,394,415.00	\$14.75	\$1,385,025.00	\$18.25	\$1,713,675.00	\$14.34	\$1,346,525.00	\$20.50	\$1,924,950.00
403D	HMA/WMA (2.0") (GR SX) (PG 64-28) (75)(MIKELSON BLVD)	SY	19,750	\$11.45	\$226,137.50	\$12.00	\$237,150.00	\$10.60	\$209,350.00	\$11.00	\$212,312.50	\$11.90	\$226,025.00	\$10.75	\$212,312.50	\$13.00	\$256,750.00	\$11.10	\$219,525.00	\$15.70	\$310,075.00
403E	HMA/WMA (3.0") (GR SG) (PG 58-28) (75)(MIKELSON BLVD)	SY	19,750	\$15.47	\$305,532.50	\$18.50	\$365,375.00	\$15.10	\$298,225.00	\$14.50	\$286,375.00	\$15.00	\$296,250.00	\$14.75	\$291,312.50	\$18.00	\$355,500.00	\$14.23	\$281,042.50	\$20.50	\$404,875.00
403F	HMA/WMA (3.0") (GR SG) (PG 58-28) (75)(MIKELSON BLVD)	SY	19,750	\$15.44	\$304,940.00	\$18.50	\$365,375.00	\$15.10	\$298,225.00	\$14.50	\$286,375.00	\$14.85	\$293,287.50	\$14.75	\$291,312.50	\$18.00	\$355,500.00	\$13.81	\$272,747.50	\$20.50	\$404,875.00
412A	CONCRETE PAVEMENT (10") (CROSSPAN) (HIGH EARLY)	SY	270	\$137.80	\$37,206.00	\$190.00	\$51,300.00	\$122.00	\$32,940.00	\$142.00	\$38,340.00	\$160.00	\$43,200.00	\$135.00	\$36,450.00	\$130.00	\$35,100.00	\$154.05	\$41,593.50	\$157.00	\$42,390.00
412B	CONCRETE PAVEMENT (10")(FILLET)	SY	630	\$128.20	\$80,766.00	\$143.00	\$90,090.00	\$117.00	\$73,710.00	\$134.00	\$84,420.00	\$160.00	\$100,800.00	\$100.00	\$63,000.00	\$130.00	\$81,900.00	\$115.54	\$72,790.20	\$135.00	\$85,050.00
608A	CONCRETE SIDEWALK 6"	SY	425	\$69.95	\$29,728.75	\$92.00	\$39,100.00	\$71.00	\$30,175.00	\$50.00	\$21,250.00	\$79.75	\$33,893.75	\$67.00	\$28,475.00	\$82.00	\$34,850.00	\$77.03	\$32,737.75	\$80.00	\$34,000.00
608B	MOUNTABLE CURB CORNER RAMP (ADA) (CAST IRON)	SY	2,850	\$124.40	\$354,540.00	\$181.00	\$515,850.00	\$106.00	\$302,100.00	\$124.00	\$353,400.00	\$126.00	\$359,100.00	\$146.00	\$416,100.00	\$120.00	\$342,000.00	\$166.89	\$475,636.50	\$145.00	\$413,250.00
608C	MOUNTABLE CURB MID-BLOCK RAMP (ADA) (CAST IRON)	SY	230	\$144.50	\$33,235.00	\$185.00	\$42,550.00	\$106.00	\$24,380.00	\$180.00	\$41,400.00	\$168.50	\$38,755.00	\$146.00	\$33,580.00	\$122.00	\$28,060.00	\$166.89	\$38,384.70	\$160.00	\$36,800.00
609A	CURB AND GUTTER TYPE 2 (SECTION I-B)	LF	571	\$31.55	\$18,015.05	\$31.75	\$18,129.25	\$34.50	\$19,699.50	\$18.50	\$10,563.50	\$32.25	\$18,414.75	\$33.50	\$19,128.50	\$39.00	\$22,269.00	\$38.51	\$21,989.21	\$29.00	\$16,559.00
609B	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF	1,608	\$32.85	\$52,822.80	\$33.00	\$53,064.00	\$34.50	\$55,476.00	\$22.00	\$35,376.00	\$34.25	\$55,074.00	\$33.50	\$53,868.00	\$40.00	\$64,320.00	\$38.51	\$61,924.08	\$32.00	\$51,456.00
609C	CURB AND CUTTER TYPE 2 (SECTION II-M)	LF	30	\$44.14	\$1,324.20	\$38.20	\$1,146.00	\$50.70	\$1,521.00	\$25.00	\$750.00	\$40.00	\$1,200.00	\$45.00	\$1,350.00	\$60.00	\$1,800.00	\$51.35	\$1,540.50	\$38.00	\$1,140.00
609D	MOUNTABLE CURB, GUTTER AND SIDEWALK 6' 6"	LF	11,300	\$68.86	\$778,118.00	\$62.00	\$700,600.00	\$74.05	\$836,765.00	\$64.00	\$723,200.00	\$58.75	\$663,875.00	\$67.50	\$762,750.00	\$80.00	\$904,000.00	\$77.03	\$870,439.00	\$57.00	\$644,100.00
620	SANITARY FACILITY	LS	1	\$5,929.00	\$5,929.00	\$2,600.00	\$2,600.00	\$4,545.00	\$4,545.00	\$5,000.00	\$5,000.00	\$2,100.00	\$2,100.00	\$13,000.00	\$13,000.00	\$5,000.00	\$5,000.00	\$5,457.66	\$5,457.66	\$5,000.00	\$5,000.00
626	MOBILIZATION	LS	1	\$183,386.00	\$183,386.00	\$200,000.00	\$200,000.00	\$123,000.00	\$123,000.00	\$300,000.00	\$300,000.00	\$156,930.00	\$156,930.00	\$137,000.00	\$137,000.00	\$200,000.00	\$200,000.00	\$102,512.99	\$102,512.99	\$170,000.00	\$170,000.00
627A	PAVEMENT MARKING (PAINT) (4" WHITE)	SF	1,500	\$1.04	\$1,560.00	\$1.11	\$1,665.00	\$0.85	\$1,275.00	\$1.00	\$1,500.00	\$0.95	\$1,425.00	\$1.05	\$1,575.00	\$1.35	\$2,025.00	\$1.07	\$1,605.00	\$2.15	\$3,225.00
627B	PAVEMENT MARKING (PAINT) (6" WHITE)	SF	7,800	\$1.24	\$9,672.00	\$1.11	\$8,658.00	\$0.85	\$6,630.00	\$2.00	\$15,600.00	\$0.95	\$7,410.00	\$1.05	\$8,190.00	\$1.35	\$10,530.00	\$1.07	\$8,346.00	\$2.15	\$16,770.00
627C	PAVEMENT MARKINGS (PAINT)(XWALK/STOPBAR)	SF	3,000	\$3.66	\$10,980.00	\$1.44	\$4,320.00	\$0.85	\$2,550.00	\$5.00	\$15,000.00	\$0.95	\$2,850.00	\$5.50	\$16,500.00	\$6.00	\$18,000.00	\$5.06	\$15,180.00	\$2.15	\$6,450.00
627D	PAVEMENT MARKINGS (SYMBOLS) (PREFORMED THERMOPLASTIC)	SF	450	\$23.55	\$10,597.50	\$24.50	\$11,025.00	\$23.25	\$10,462.50	\$20.00	\$9,000.00	\$26.50	\$11,925.00	\$28.00	\$12,600.00	\$20.00	\$9,000.00	\$22.76	\$10,242.00	\$26.00	\$11,700.00
627E	PAVEMENT MARKINGS (CROSSWALK/STOP BARS) (PREFORMED THERMOPLASTIC)	SF	875	\$17.68	\$15,470.00	\$15.25	\$13,343.75	\$13.75	\$12,031.25	\$20.00	\$17,500.00	\$15.65	\$13,693.75	\$17.00	\$14,875.00	\$22.00	\$19,250.00	\$20.23	\$17,701.25	\$16.00	\$14,000.00
629	SURVEY MONUMENTATION	EA	8	\$1,206.60	\$9,652.80	\$1,310.00	\$10,480.00	\$593.00	\$4,744.00	\$550.00	\$4,400.00	\$790.00	\$6,320.00	\$2,500.00	\$20,000.00	\$1,600.00	\$12,800.00	\$2,276.13	\$18,209.04	\$1,100.00	\$8,800.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$252,926.40	\$252,926.40	\$275,000.00	\$275,000.00	\$197,187.00	\$197,187.00	\$98,000.00	\$98,000.00	\$364,445.00	\$364,445.00	\$410,000.00	\$410,000.00	\$195,000.00	\$195,000.00	\$519,538.45	\$519,538.45	\$350,000.00	\$350,000.00
630B	VARIABLE MESSAGE SIGN (2 VMS PER DAY)	DY	215	\$188.07	\$40,435.05	\$205.00	\$44,075.00	\$136.35	\$29,315.25	\$150.00	\$32,250.00	\$189.00	\$40,635.00	\$165.00	\$35,475.00	\$300.00	\$64,500.00	\$191.59	\$41,191.85	\$125.00	\$26,875.00
720	MATERIALS SAMPLING & TESTING	LS	1	\$82,902.00	\$82,902.00	\$75,000.00	\$75,000.00	\$64,620.00	\$64,620.00	\$95,000.00	\$95,000.00	\$88,890.00	\$88,890.00	\$78,000.00	\$78,000.00	\$88,000.00	\$88,000.00	\$109,254.29	\$109,254.29	\$95,000.00	\$95,000.00
F/A	GESC AND SWMP PERMITS	LS	1	\$2,500.00	\$3,000.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$5,000.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00
F/A	MINOR CONTRACT REVISIONS/LANDSCAPE MODIFICATIONS	LS	1	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.00	\$75,000.				

BID SCHEDULE A TOTAL PROJECT COST:	\$7,598,878.75	\$6,193,561.10	\$6,240,932.00	\$6,690,397.65	\$7,102,631.20	\$7,520,346.00	\$7,930,434.36	\$8,946,968.50
PERCENTAGE OVER/UNDER:	0.00%	-18.49%	-17.87%	-11.96%	-6.53%	-1.03%	28.04%	43.36%



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: File #: PWC 2023-015

To: Members of the Public Works Commission

From: Frank Castillo, Project Manager

Resolution approving a Construction Contract for the 2023 Curb, Gutter & Sidewalk Replacement Project

Executive Summary

Maintaining the Town's streets is important for public safety, travel efficiency, and as a means to extend the useable life of the streets. This overall project is the annual Pavement Maintenance Program (PMP) for the Town's street system and is intended to preserve the Town's street infrastructure. Preservation and rehabilitation treatments work to extend the lifespan of street segments at the lowest lifecycle cost. And, once street segments reach the end of their lifespan, reconstruction projects are identified. The PMP, and reconstruction projects meet the Town's Vision Statement goals of:

- Providing outstanding community services including police, fire, emergency medical, parks, recreation, water and transportation.
- Ensure a Town government accountable for its vision, mission and values.

The Town of Castle Rock annually budget's for the PMP to perform needed maintenance to the Town's street system. Maintenance work generally consists of asphalt patching, overlay, reconstruction, slurry seal, sidewalk, curb & gutter repair, concrete panel replacement, and other pavement preservation treatments. In 2011 Town Council approved the rotating Five Year Pavement Maintenance Program. The 2023 maintenance work will be performed at various locations within the East PMP regionalized area. Primary street maintenance is scheduled for Mikelson Blvd and Woodlands Blvd. All maintenance activities are summarized on the 2023 PMP map (**Attachment A**).

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000 for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. Staff is comfortable with the contingencies and believes the identified work can be managed to comply with the plans and specifications. Contingency amounts will only be used if needed during the project.

Notification and Outreach Efforts

Staff has developed specific public coordination outreach to ensure that residences and businesses will understand construction impacts and how this may affect access to individual businesses and residences. Public outreach will occur in numerous forms such as; 1) The Public Outreach Open House, 2) Town newsletters, 3) HOA newsletters, 4) Town social media, 5) Door notifications, 6) Press releases, 7) Town's website, and others. Residents and businesses will be notified of actual dates that work is to be completed adjacent to their properties, and traffic control plans will be developed and managed to ensure worker and public safety.

Town staff will host an in-house, Public Outreach Open House in March. This Public Outreach Open House will consist of detailed maps of the 2023 maintenance work to let concerned residents know which streets will receive treatments and how it may affect them. This year's PMP Open House will be held at The Ridge House - Founder's Village, 4501 Enderud Blvd. Staff plans to coordinate with neighborhood Home Owners Association's (HOA). Furthermore, press releases will be published before the start of PMP construction season to notify the public of work locations and dates.

History of Past Town Council, Boards & Commissions, or Other Discussions

The Public Works Commission at their October 3, 2011 meeting voted unanimously to recommend to Town Council to adopt the proposed Five Year Pavement Maintenance Program, and the Overall Condition Index (OCI) goal to be set at 75 for primary streets and 70 for residential streets. The OCI is an average rating of each street's condition. This was done in an effort to minimize impacts of roadway maintenance to residents, and to reduce costs of work by concentrating in one area of Town. Town Council approved the Town's rotating five year PMP regionalized area plan for residential streets at the November 1, 2011 Town Council meeting. The Town's five-year regional plan divides the town into five regionalized areas. Primary streets can be included in any year of the five-year program. The PMP program will then annually rotate around these five areas excluding primary streets and downtown Castle Rock such that every fifth year repairs to an area's residential street system will occur. In addition to the regionalized Five Year Pavement Maintenance Program, the Public Works Department has developed the Strategic Asset Management Plan (SAMP) to maximize value from each asset for our stakeholders. Staff has begun making adjustments to the regionalized plan to better align with SAMP policies of working to obtain the lowest total lifecycle cost.

Discussion

The Town's goal for the PMP is to preserve and extend the life of the Town's streets by making the most cost effective annual improvements to selected street segments. These goals are met when proper street maintenance is administered to these segments.

Staff determines which streets require maintenance by evaluating the street's condition rating in addition to a subjective analysis. A pavement management program, Cartegraph's Pavement Asset Module, establishes these condition ratings. This program establishes a condition rating based on staff's field observation for the streets, and rates them from poor to excellent condition. Different types of street maintenance treatments, such as crack seal, slurry seal, mill & overlay, full depth reclamation, and reconstruction are identified based on the condition of each roadway.

Staff evaluates the condition of the Town's concrete curb, gutter, and public sidewalks within projects limits. These contracts will remove and replace damaged concrete infrastructure that is a hazard to pedestrians or to the traveling public.

The invitation to bid for construction of this projects was advertised in December 2022. Bids were opened for this project on January 19, 2023.

The Curb, Gutter & Sidewalk Replacement Project bids were checked for accuracy, references were checked, and all documents were reviewed for contract compliance. Staff believes this recommended bidder is qualified to perform the work associated with the respective maintenance contract. A summary of the individual contract with bid amount plus contingency and the contractor is shown on the following table:

2023 PMP RECOMMENDED AWARD

PROJECT	BID AMOUNT PLUS CONTINGENCY	CONTRACTOR
2023 Curb, Gutter and Sidewalk Replacement Project	\$1,143,835 + \$114,384 (10%) Contingency	Chato's Concrete, LLC Denver CO
TOTAL	\$1,258,219	120-3140-431.40-35

It is anticipated that concrete repairs and the reconstructions will begin in early April.

The budget for the 2023 PMP is \$10,900,000 and the budget for 2023 reconstruction projects is \$7,600,000, for a total 2023 Budget of \$18,500,000. The total of the low bid results for identified work is \$16,584,128. Staff recommends adding contingencies for the various PMP projects and reconstructions for unforeseen conditions that total \$1,658,414, or 10% of the contract amounts, for a total authorization of \$18,242,542. The remaining budget of \$257,458 has been identified for the annual miscellaneous concrete project, and other miscellaneous asphalt and concrete needs.

Staff Recommendation

Staff is recommending that the Public Works Commission recommend to Town Council the acceptance of the bid for the 2023 Curb, Gutter and Sidewalk Replacement project, and approval of the construction contract with Chato's Concrete, LLC for the amounts identified.

Proposed Motion

- A. "I move to recommend to Town Council to approve a Resolution approving the Construction Contract between the Town of Castle Rock and Chato's Concrete, LLC for the 2023 Curb, Gutter & Sidewalk Replacement Project"

Alternate Motion

Item #: **File #:** PWC 2023-015

“I move to recommend to Town Council to approve a Resolution approving the Construction Contract between the Town of Castle Rock and Chato’s Concrete LLC for the 2023 Curb, Gutter & Sidewalk Replacement Project, with the following changes....”

Attachments

Contract

Attachment A: 2023 PMP Project Map

Attachment B: 2023 PMP Project Bid Proposal Summary

**TOWN OF CASTLE ROCK
CONSTRUCTION CONTRACT
(2023 Curb, Gutter, and Sidewalk Replacement Project)**

THIS CONSTRUCTION CONTRACT ("Contract") is made between the **TOWN OF CASTLE ROCK**, a Colorado municipal corporation ("Town"), 100 N. Wilcox Street, Castle Rock, Colorado 80104 and **CHATO'S CONCRETE, LLC**, a Colorado limited liability company, 8326 Quivas Way, Denver, Colorado 80221 ("Contractor").

In consideration of these mutual covenants and conditions, the Town and Contractor agree as follows:

SCOPE OF WORK The Contractor shall execute the entire Work described in the Contract.

CONTRACT The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, written or oral representations and agreements. The Contract incorporates the following Contract Documents. In resolving inconsistencies among two or more of the Contract Documents, precedence will be given in the same order as enumerated.

LIST OF CONTRACT DOCUMENTS

The Contract Documents, except for Modifications issued after execution of this Contract, are:

1. Change Orders
2. Notice to Proceed
3. Construction Contract
4. General Conditions
5. Where applicable, Davis-Bacon Act Wage Determinations
6. The following Addenda, if any:

2023 Facilities – 1 Addendum

7. Special Conditions of the Contract:
 - a. ProjSec105 No open excavation
 - b. ProjSec107 Public Notification
8. Notice of Award;
9. Invitation to Bid;
10. Information and Instructions to Bidders;
11. Notice of Substantial Completion;
12. Notice of Construction Completion;
13. Proposal Forms, including Bid Schedules;
14. Performance, and Labor and Material Payment Bonds;
15. Performance Guarantee; and
16. Insurance Certificates.

CONTRACT PRICE. The Town shall pay the Contractor for performing the Work and the completion of the Project according to the Contract, subject to Change Orders as approved in writing by the Town, under the guidelines in the General Conditions. The Town will pay **\$1,143,835.00** (“Contract Price”), to the Contractor, subject to full and satisfactory performance of the terms and conditions of the Contract. The Contract Price is provisional based on the quantities contained in the Bid attached as ***Exhibit 1***. The final Contract Price shall be adjusted to reflect actual quantities incorporated into the Work at the specified unit prices. The Town has appropriated money equal or in excess of the Contract Price for this work.

TERM. The term shall commence upon execution of the Contract and terminate on December 31, 2023, unless an extension of the Contract is agreed to in writing by the Town and the Contractor.

COMPLETION OF WORK. The Contractor must begin work covered by the Contract within **3** working days from the date of the Notice to Proceed, and must complete work within **45** working days from and including the date of Notice to Proceed, according to the General Conditions, or by June 12, 2023, whichever date is earlier.

LIQUIDATED DAMAGES. If the Contractor fails to complete the Work by the date set for completion in the Contract, or if the completion date is extended by a Change Order, by the date set in the Change Order, the Town may permit the Contractor to proceed, and in such case, may deduct the sum of **\$1,750** for each day that the Work shall remain uncompleted from monies due or that may become due the Contractor. This sum is not a penalty but is a reasonable estimate of liquidated damages.

The parties agree that, under all of the circumstances, the daily basis and the amount set for liquidated damages is a reasonable and equitable estimate of all the Town's actual damages for delay. The Town expends additional personnel effort in administering the Contract or portions of the Work that are not completed on time, and has the cost of field and office engineering, inspecting, and interest on financing and such efforts and the costs thereof are impossible to accurately compute. In addition, some, if not all, citizens of Castle Rock incur personal inconvenience and lose confidence in their government as a result of public projects or parts of them not being completed on time, and the impact and damages, certainly serious in monetary as well as other terms are impossible to measure.

SERVICE OF NOTICES. Notices to the Town are given if sent by registered or certified mail, postage prepaid, to the following address:

TOWN OF CASTLE ROCK
Town Attorney
100 N. Wilcox Street
Castle Rock, CO 80104

With a copy to: Legal@crgov.com

INSURANCE PROVISIONS. The Contractor must not begin any work until the Contractor obtains, at the Contractor's own expense, all required insurance as specified in the General Conditions. Such insurance must have the approval of the Town of Castle Rock as to limits, form and amount. *Certificate of Insurance ("COI") must be submitted along with the executed contract as **Exhibit 2**.*

RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify, save harmless, and defend the Town, its officers and employees, from and in all suits, actions or claims of any character brought because of: any injuries or damage received or sustained by any person, persons or property because of operations for the Town under the Contract; including but not limited to claims or amounts recovered from any infringements of patent, trademark, or copyright; or pollution or environmental liability. The Town may retain so much of the money due the Contractor under the Contract, as the Town considers necessary for such purpose. If no money is due, the Contractor's Surety may be held until such suits, actions, claims for injuries or damages have been settled. Money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that the Contractor and the Town are adequately protected by public liability and property damage insurance.

The Contractor also agrees to pay the Town all expenses, including attorney's fees, incurred to enforce this Responsibility for Damage Claim clause.

Nothing in the **INSURANCE PROVISIONS of the General Conditions** shall limit the Contractor's responsibility for payment of claims, liabilities, damages, fines, penalties, and costs resulting from its performance or nonperformance under the Contract.

STATUS OF CONTRACTOR. Contractor has completed the Affidavit of Independent Contractor Status, attached as **Exhibit 3**, and submitted same at the time of execution of this Agreement. The Contractor is performing all work under the Contract as an independent Contractor and not as an agent or employee of the Town. No employee or official of the Town will supervise the Contractor. The Contractor will not supervise any employee or official of the Town. The Contractor shall not represent that it is an employee or agent of the Town in any capacity. **The Contractor and its employees are not entitled to Town Workers' Compensation benefits and are solely responsible for federal and state income tax on money earned.** This is not an exclusive contract.

THIRD PARTY BENEFICIARIES. None of the terms or conditions in the Contract shall give or allow any claim, benefit, or right of action by any third person not a party to the Contract. Any person, except the Town or the Contractor, receiving services or benefits under the Contract is an incidental beneficiary only.

INTEGRATION. This contract integrates the entire understanding of the parties with respect to the matters set forth. No representations, agreements, covenants, warranties, or certifications, express or implied, shall exist as between the parties, except as specifically set forth in this Contract.



DEFINITIONS. The Definitions in the General Conditions apply to the entire Contract unless modified within a Contract Document.

Executed this _____ day of _____, 20__.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jason Gray, Mayor

APPROVED AS TO FORM:

Michael J. Hyman, Town Attorney

CONTRACTOR:

CHATO'S CONCRETE, LLC

By: _____

Title: _____

EXHIBIT 1

CONTRACTOR'S BID

Description of the Work

General Description – The work to be performed under this contract includes the removal and replacement of existing concrete pavement, pattern concrete, sidewalk, curb and gutter, mountable curb, gutter and walk, crosspan (10" thick), curb ramp (6" thick), 4" sidewalk, and 6" sidewalk. The Contractor shall supply all labor, equipment, and materials necessary to complete the work in accordance with these specifications. The contract shall be awarded based on bids received and the contract documents. Contractor will be required to coordinate construction activities with adjacent businesses, trash removal companies, school district, HOA, Metro Districts, and other Town maintenance projects if applicable. The contractor shall commence work no later than three (3) calendar days from, and including, the date of the Notice to Proceed, and be construction complete (punchlist items, cleanup, and demobilize) within forty (45) working days from the date on the Notice to Proceed. If "Construction Completion" is not issued within the allotted contract time for the original scope of work, "Liquidated Damages" shall be assessed. When contract work is complete, the contractor shall commence work on punchlist items, cleanup, and demobilizing regardless of contract time remaining. Work shall take place between April 10, 2023 and June 12, 2023. A schedule of sequencing of all work shall be submitted at or before the project pre-construction meeting, and approved by the Town prior to issuance of Notice to Proceed.

2023 Curb, Gutter, and Sidewalk Replacement Project
Bid Schedule

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB, GUTTER TYPE 2	LF	2,328	\$10.00	\$23,280.00
202B	REMOVAL OF CURB, GUTTER AND SIDEWALK	LF	2,099	\$15.00	\$31,485.00
202C	REMOVAL OF SIDEWALK	SY	358	\$16.00	\$5,728.00
202D	REMOVAL OF CONCRETE PAVEMENT (CROSSPAN & ALLEY CONCRETE PAVEMENT)	SY	300	\$20.00	\$6,000.00
202E	REMOVAL OF CURB RAMP	SY	1,138	\$18.00	\$20,484.00
202F	REMOVAL OF ASPHALT MAT (PATCHING)(CONTINGENCY)	SY	25	\$15.00	\$375.00
203	UNCLASSIFIED EXCAVATION (CIP) (6") (CONTINGENCY)	SY	50	\$50.00	\$2,500.00
210A	TYPE R INLET PAN (REMOVE AND REPLACE)	LF	27	\$60.00	\$1,620.00
210B	TYPE R INLET TOP (REPAIR)	SF	729	\$100.00	\$72,900.00
304	AGGREGATE BASE COURSE (CLASS 6) (6") (CONTINGENCY)	SY	20	\$30.00	\$600.00
403	HBP (PATCHING) (GR SX) (6") (PG 58-28)(CONTINGENCY)	SY	50	\$200.00	\$10,000.00
412A	CONCRETE PAVEMENT (10") (CROSSPAN) (HIGH EARLY)	SY	188	\$160.00	\$30,080.00
421B	CONCRETE PAVEMENT (10") (FILLET)	SY	112	\$150.00	\$16,800.00
608A	CONCRETE SIDEWALK (6")	SY	358	\$75.00	\$26,850.00
608B	MOUNTABLE CURB CORNER RAMP (ADA) (CAST IRON)	SY	1,006	\$120.00	\$120,720.00
608C	MOUNTABLE CURB MID-BLOCK RAMP (ADA) (CAST IRON)	SY	132	\$120.00	\$15,840.00
609A	VERTICAL CURB, GUTTER AND SIDEWALK 6'6"	LF	1,236	\$46.00	\$56,856.00
609B	MOUNTABLE CURB, GUTTER AND SIDEWALK 7' 11"	LF	863	\$57.00	\$49,191.00
609C	CURB AND GUTTER TYPE 2 (SECTION I-B)	LF	80	\$28.00	\$2,240.00
609D	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF	974	\$30.00	\$29,220.00
609E	CURB AND GUTTER TYPE 2 (SECTION II-M)	LF	1,274	\$34.00	\$43,316.00
620	SANITARY FACILITY	LS	1	\$2,500.00	\$2,500.00
626	MOBILIZATION	LS	1	\$20,000.00	\$20,000.00
629	SURVEY MONUMENTATION	EA	7	\$750.00	\$5,250.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$10,000.00	\$10,000.00
630B	VARIABLE MESSAGE SIGN (VMS) (2EA Per Day)	DAY	45	\$1,000.00	\$45,000.00
720	MATERIALS SAMPLING & TESTING	LS	1	\$25,000.00	\$25,000.00
F/A	MINOR CONTRACT REVISIONS	LS	1	\$20,000.00	\$470,000.00

TOTAL PROJECT COST: \$1,143,835.00 **UA**

TOTAL PROJECT COST IN WORDS: One Million One Hundred Fouty Three Thousand

Eight Hundred Thirty Five and Zero Cents

EXHIBIT 2

CONTRACTOR'S CERTIFICATE OF INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

02/08/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Moody Insurance Agency, Inc. 8055 East Tufts Avenue Suite 1000 Denver CO 80237	CONTACT NAME: Moody Insurance Agency, Inc. PHONE (A/C, No, Ext): (303) 824-6600 E-MAIL ADDRESS: certrequest@moodyins.com FAX (A/C, No): (303) 370-0118
INSURED Chato's Concrete, LLC. C&M Investments, LLC. 8326 Quivas Way Denver CO 80221-4630	INSURER(S) AFFORDING COVERAGE INSURER A: Phoenix Insurance Company INSURER B: Travelers Property Casualty Co of America INSURER C: Pinnacol Assurance INSURER D: INSURER E: INSURER F:
	NAIC # 25623 25674 41190

COVERAGES**CERTIFICATE NUMBER:** 23.24 Master**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			DTCO0T093495PHX23	01/01/2023	01/01/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY			8100T0940502326G	01/01/2023	01/01/2024	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> EXCESS LIAB DED <input checked="" type="checkbox"/> RETENTION \$ 0			CUP0T0951142326	01/01/2023	01/01/2024	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	4095180	01/01/2023	01/01/2024	<input checked="" type="checkbox"/> PER STATUTE E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Leased/Rented Equipment			DTCO0T093495PHX23	01/01/2023	01/01/2024	Limit 100,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER**CANCELLATION**

For Information Only

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Moody Insurance Agency

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AGENCY CUSTOMER ID: _____

LOC #: _____

ADDITIONAL REMARKS SCHEDULE

Page ____ of ____

AGENCY Moody Insurance Agency, Inc.		NAMED INSURED Chato's Concrete, LLC. C&M Investments, LLC.
POLICY NUMBER		
CARRIER	NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,****FORM NUMBER:** 25 **FORM TITLE:** Certificate of Liability Insurance: Notes**CONTRACTUAL LIABILITY APPLIES PER POLICY TERMS AND CONDITIONS**

Crime - EPLI Policy:

Policy Number: 106428988

Effective Dates: 1/1/2023 - 1/1/2024

Insurer: Travelers Casualty & Surety Co (NAIC #10677)

Crime Limit: \$100,000

Employment Practices Liability Limit: \$1,000,000

General Liability

CG D2 46 04 19 - Blanket Additional Insured - Ongoing and Completed Operations as required per written contract

CG 79 88 01 19 - Blanket Additional Insured when required by written contract

CG D3 16 02 19 - Blanket waiver of subrogation status when required by written contract

Auto Liability

CAT3530215 - Blanket Additional Insured

CAT3530215 - Blanket waiver of subrogation status when required by written contract

Workers Compensation

359-B Form Includes:

Blanket waiver of subrogation status applies when required by written contract

Excess Liability:

Excess Liability policy is on a follow form basis for the following underlying insurance coverages: General Liability and Automobile Liability. Additional insured status will follow when required by written contract including Primary and Non-Contributory status when required by written contract.

IMPORTANT:

The policy forms referenced will be sent via email only. To obtain copies, please send your request with the email address to certrequest@moodyins.com.

ElitePac®
General Liability Extension Endorsement

COMMERCIAL GENERAL LIABILITY
CG 73 00 01 19

SUMMARY OF COVERAGES (including index)

This is a summary of the various additional coverages and coverage modifications provided by this endorsement. No coverage is provided by this summary. Refer to the actual endorsement (Pages 3-through-9) for changes affecting your insurance protection.

DESCRIPTION	PAGE FOUND
Additional Insureds - Primary and Non-Contributory Provision	Page 8
Blanket Additional Insureds - As Required By Contract	Page 5
<ul style="list-style-type: none">• Owners, Lessees or Contractors (includes Architects, Engineers or Surveyors• Lessors of Leased Equipment• Managers or Lessors of Premises• Mortgagees, Assignees and Receivers• Any Other person or organization other than a joint venture• Grantors of Permits	
Broad Form Vendors Coverage	Page 7
Damage To Premises Rented To You (Including Fire, Lightning or Explosion)	Page 3
Electronic Data Liability (\$100,000)	Page 4
Employee Definition Amended	Page 9
Employees As Insureds Modified	Page 5
Employer's Liability Exclusion Amended (Not applicable in New York)	Page 3
Incidental Malpractice Exclusion modified	Page 7
Knowledge of Occurrence, Claim, Suit or Loss	Page 7
Liberalization Clause	Page 8
Mental Anguish Amendment (Not applicable to New York)	Page 9
Newly Formed or Acquired Organizations	Page 5
Non-Owned Aircraft	Page 3
Non-Owned Watercraft (under 60 feet)	Page 3
Not-for-profit Members - as additional insureds	Page 5
Personal And Advertising Injury - Discrimination Amendment (Not applicable in New York)	Page 8
Products Amendment (Medical Payments)	Page 4
Supplementary Payments Amended - Bail Bonds (\$5,000) and Loss of Earnings (\$1,000)	Page 4
Two or More Coverage Parts or Policies Issued By Us	Page 8
Unintentional Failure to Disclose Hazards	Page 8
Waiver of Transfer of Rights of Recovery (subrogation)	Page 8
When Two or More Coverage Parts of this Policy Apply to a Loss	Page 3



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ElitePac®
General Liability Extension Endorsement

COMMERCIAL GENERAL LIABILITY
CG 73 00 01 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies the insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

The **SECTIONS** of the Commercial General Liability Coverage Form identified in this endorsement will be amended as shown below. However, **if (a) two or more Coverage Parts of this policy, or (b) two or more forms or endorsements within the same Coverage Part apply to a loss**, coverage provision(s) with the broadest language will apply, unless specifically stated otherwise within the particular amendment covering that loss.

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

COVERAGES - Amendments

SECTION I - COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY

EXCLUSIONS

Employer's Liability Amendment

(This provision is not applicable in the State of New York).

The following is added to Exclusion **e. Employer's Liability** under **COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. Exclusions**:

This exclusion also does not apply to any "temporary worker".

Non-Owned Aircraft, Auto or Watercraft

A. Paragraph **(2)** of Exclusion **g. Aircraft, Auto Or Watercraft** under **COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. Exclusions** is deleted in its entirety and replaced with the following:

(2) A watercraft you do not own that is:

- (a)** Less than 26 feet long and not being used to carry persons or property for a charge; or
- (b)** At least 26 feet, but less than 60 feet long, and not being used to carry persons or property for a charge. Any person is an insured who uses or is responsible for the use of such watercraft with your expressed or implied consent. However, if the insured has any other valid and collectible insurance for "bodily injury" or "property damage" that would be covered under this provision, or on any other basis, this coverage is then excess, and subject to Condition **4. Other Insurance, b. Excess Insurance** under **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS**.

B. The following is added to Exclusion **g. Aircraft, Auto Or Watercraft** under **COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. Exclusions**:

This exclusion does not apply to:

- (6)** Any aircraft, not owned or operated by any insured, which is hired, chartered or loaned with a paid crew. However, if the insured has any other valid and collectible insurance for "bodily injury" or "property damage" that would be covered under this provision, or on any other basis, this coverage is then excess, and subject to Condition **4. Other Insurance, b. Excess Insurance** under **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS**.

Damage To Premises Rented to You

A. The last paragraph of Paragraph **2. Exclusions** under **COVERAGE A BODILY INJURY AND PROPERTY DAMAGE** is deleted in its entirety and replaced with the following:

Exclusions **c. through n.** do not apply to damage by fire, lightning or explosion to premises rented to you or temporarily occupied by you with the permission of the owner. A separate limit of insurance applies to this coverage as described in **SECTION III - LIMITS OF INSURANCE**.



B. Paragraph 6. under **SECTION III - LIMITS OF INSURANCE** is deleted in its entirety and replaced with the following:

6. Subject to Paragraph 5. above, the most we will pay under **COVERAGE A** for damages because of "property damage" to any one premises, while rented to you, or in the case of damage caused by fire, lightning or explosion, while rented to you or temporarily occupied by you with permission of the owner, for all such damage caused by fire, lightning or explosion proximately caused by the same event, whether such damage results from fire, lightning or explosion or any combination of the three, is the amount shown in the Declarations for the Damage To Premises Rented To You Limit.

C. Paragraph a. of Definition 9. "Insured contract" under **SECTION V - DEFINITIONS** is deleted in its entirety and replaced with the following:

a. A contract for a lease of premises. However, that portion of the contract for a lease of premises that indemnifies any person or organization for damage by fire, lightning or explosion to premises while rented to you or temporarily occupied by you with the permission of the owner is not an "insured contract";

Electronic Data Liability

A. Exclusion p. **Access or Disclosure Of Confidential Or Personal Information And Data-related Liability** under **COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. Exclusions** is deleted in its entirety and replaced by the following:

p. **Access or Disclosure Of Confidential Or Personal Information And Data-related Liability**

Damages arising out of:

- (1) Any access to or disclosure of any person's or organization's confidential or personal information, including patents, trade secrets, processing methods, customer lists, financial information, credit card information or any other type of nonpublic information; or
- (2) The loss of, loss of use of, damage to, corruption of, inability to access, or inability to manipulate "electronic data" that does not result from physical injury to tangible property.

This exclusion applies even if damages are claimed for notification costs, credit monitoring expenses, forensic expenses, public relations expenses or any other loss, cost or expense incurred by you or others arising out of that which is described in Paragraph (1) or (2) above.

B. The following paragraph is added to **SECTION III - LIMITS OF INSURANCE**:

Subject to 5. above, the most we will pay under **COVERAGE A** for "property damage" because of all loss of "electronic data" arising out of any one "occurrence" is a sub-limit of \$100,000.

SECTION I - COVERAGE C MEDICAL PAYMENTS EXCLUSIONS

Any Insured Amendment

Exclusion a. **Any Insured** under **COVERAGE C MEDICAL PAYMENTS, 2. Exclusions** is deleted in its entirety and replaced with the following:

a. **Any Insured**

To any insured.

This exclusion does not apply to:

- (1) "Not-for-profit members";
- (2) "Golfing facility" members who are not paid a fee, salary, or other compensation; or
- (3) "Volunteer workers".

This exclusion exception does not apply if **COVERAGE C MEDICAL PAYMENTS** is excluded by another endorsement to this Coverage Part.

Product Amendment

Exclusion f. **Products-Completed Operations Hazard** under **COVERAGE C MEDICAL PAYMENTS, 2. Exclusions** is deleted in its entirety and replaced with the following:

f. **Products-Completed Operations Hazard**

Included within the "products-completed operations hazard".

This exclusion does not apply to "your products" sold for use or consumption on your premises, while such products are still on your premises.

This exclusion exception, does not apply if **COVERAGE C MEDICAL PAYMENTS** is excluded by another endorsement to this Coverage Part.

SECTION I - SUPPLEMENTARY PAYMENTS - COVERAGES A AND B

Expenses For Bail Bonds And Loss Of Earnings

A. Subparagraph 1.b. under **SUPPLEMENTARY PAYMENTS - COVERAGES A AND B** is deleted in its entirety and replaced with the following:

b. Up to \$5,000 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.

B. Subparagraph 1.d. under **SUPPLEMENTARY PAYMENTS - COVERAGES A AND B** is deleted in its entirety and replaced with the following:

- d. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit", including actual loss of earnings up to \$1,000 a day because of time off from work.

SECTION II - WHO IS AN INSURED - Amendments

Not-for-Profit Organization Members

The following paragraph is added to **SECTION II - WHO IS AN INSURED**:

If you are an organization other than a partnership, joint venture, or a limited liability company, and you are a not-for-profit organization, the following are included as additional insureds:

1. Your officials;
2. Your trustees;
3. Your members;
4. Your board members;
5. Your commission members;
6. Your agency members;
7. Your insurance managers;
8. Your elective or appointed officers; and
9. Your "not-for-profit members".

However only with respect to their liability for your activities or activities they perform on your behalf.

Employees As Insureds Modified

- A. Subparagraph 2.a.(1)(a) under **SECTION II - WHO IS AN INSURED** does not apply to "bodily injury" to a "temporary worker" caused by a co-"employee" who is not a "temporary worker".
- B. Subparagraph 2.a.(2) under **SECTION II - WHO IS AN INSURED** does not apply to "property damage" to the property of a "temporary worker" or "volunteer worker" caused by a co-"employee" who is not a "temporary worker" or "volunteer worker".
- C. Subparagraph 2.a.(1)(d) under **SECTION II - WHO IS AN INSURED** does not apply to "bodily injury" caused by cardio-pulmonary resuscitation or first aid services administered by a co-"employee".

With respect to this provision only, Subparagraph (1) of Exclusion 2. e. **Employer's Liability** under **SECTION I - COVERAGES, COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY** does not apply.

Newly Formed Or Acquired Organizations

- A. Subparagraph 3.a. under **SECTION II - WHO IS AN INSURED** is deleted in its entirety and replaced with the following:

- a. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier. However, **COVERAGE A** does not apply to "bodily injury" or "property damage" that occurred before you acquired or formed the organization.

- B. The following paragraph is added to **SECTION II - WHO IS AN INSURED**, Paragraph 3:

If you are engaged in the business of construction of dwellings three stories or less in height, or other buildings three stories or less in height and less than 25,000 square feet in area, you will also be an insured with respect to "your work" only, for the period of time described above, for your liability arising out of the conduct of any partnership or joint venture of which you are or were a member, even if that partnership or joint venture is not shown as a Named Insured. However, this provision only applies if you maintain or maintained an interest of at least fifty percent in that partnership or joint venture for the period of that partnership or joint venture.

This provision does not apply to any partnership or joint venture that has been dissolved or otherwise ceased to function for more than thirty-six months.

With respect to the insurance provided by this provision, **Newly Formed or Acquired Organizations**, the following is added to **SECTION IV - COMMERCIAL GENERAL LIABILITY**, Paragraph 4. **Other Insurance**, Subparagraph b. **Excess Insurance**:

The insurance provided by this provision, **Newly Formed or Acquired Organizations**, is excess over any other insurance available to the insured, whether primary, excess, contingent or on any other basis.

(All other provisions of this section remain unchanged)

Blanket Additional Insureds - As Required By Contract

Subject to the **Primary and Non-Contributory** provision set forth in this endorsement, **SECTION II - WHO IS AN INSURED** is amended to include as an additional insured:

A. Owners, Lessees or Contractors/Architects, Engineers and Surveyors

1. Any person or organization for whom you are performing operations when you and such person or organization have agreed in a written contract, written agreement or written permit that such person or organization be added as an additional insured on your commercial general liability policy; and

2. Any other person or organization, including any architects, engineers or surveyors not engaged by you, whom you are required to add as an additional insured under your policy in the contract or agreement in Paragraph 1. above:

Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

- a. Your acts or omissions; or
- b. The acts of omissions of those acting on your behalf;

in the performance of your ongoing operations performed for the additional insured in Paragraph 1., above.

However, this insurance does not apply to:

"Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services by or for you, including:

- a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; and
- b. Supervisory, inspection, architectural or engineering activities.

Professional services do not include services within construction means, methods, techniques, sequences and procedures employed by you in connection with your operations in your capacity as a construction contractor.

A person or organization's status as an additional insured under this endorsement ends when your operations for the person or organization described in Paragraph 1. above are completed.

B. Other Additional Insureds

Any of the following persons or organizations with whom you have agreed in a written contract, written agreement or written permit that such persons or organizations be added as an additional insured on your commercial general liability policy:

1. Lessors of Leased Equipment

Any person or organization from whom you lease equipment, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your maintenance, operation or use of equipment leased to you by such person or organization.

With respect to the insurance afforded to these additional insureds, this insurance does not apply to any "occurrence" which takes place after the equipment lease expires.

2. Managers or Lessors of Premises

Any person or organization from whom you lease premises, but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you.

This insurance does not apply to any "occurrence" which takes place after you cease to be a tenant of that premises.

3. Mortgagees, Assignees or Receivers

Any person or organization with respect to their liability as mortgagee, assignee or receiver and arising out of the ownership, maintenance or use of your premises.

This insurance does not apply to any "occurrence" which takes place after the mortgage is satisfied, or the assignment or receivership ends.

4. Any Person or Organization Other Than A Joint Venture

Any person or organization (other than a joint venture of which you are a member), but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your acts or omissions or the acts of omissions of those acting on your behalf in the performance of your ongoing operations or in connection with property owned by you.

5. State or Governmental Agency or Political Subdivision - Permits or Authorizations

Any state or governmental agency or subdivision or political subdivision, but only with respect to:

- a. Operations performed by you or on your behalf for which the state or governmental agency or subdivision or political subdivision has issued a permit or authorization; or
- b. The following hazards for which the state or governmental agency or subdivision or political subdivision has issued a permit or authorization in connection with premises you own, rent or control and to which this insurance applies:

- (1) The existence, maintenance, repair, construction, erection or removal of advertising signs, awnings, canopies, cellar entrances, coal holes, driveways, manholes, marquees, hoist away openings, sidewalk vaults, street banners or decorations and similar exposures;
- (2) The construction, erection or removal of elevators; or
- (3) The ownership, maintenance or use of any elevators covered by this insurance.

This insurance does not apply to:

- (a) "Bodily injury" or "property damage" arising out of operations performed for the federal government, state or municipality; or
- (b) "Bodily injury" or "property damage" included within the "products-completed operations hazard".

With respect to Paragraphs 2. through 4., this insurance does not apply to structural alterations, new construction or demolition operations performed by or on behalf of such person or organization.

The provisions of this coverage extension do not apply unless the written contract or written agreement has been signed by the Named Insured or written permit issued prior to the "bodily injury" or "property damage" or "personal and advertising injury".

Broad Form Vendors Coverage

Subject to the **Primary and Non-Contributory** provision set forth in this endorsement, **SECTION II - WHO IS AN INSURED** is amended to include as an additional insured any person or organization (referred to below as vendor) for whom you have agreed in a written contract or written agreement to provide coverage as an additional insured under your policy. Such person or organization is an additional insured only with respect to "bodily injury" or "property damage" arising out of "your products" which are distributed or sold in the regular course of the vendor's business. However, the insurance afforded the vendor does not apply to:

- a. "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a contract or agreement; however this exclusion does not apply to liability for damages that the vendor would have in the absence of the contract or agreement;
- b. Any express warranty unauthorized by you;

- c. Any physical or chemical change in the product made intentionally by the vendor;
- d. Repackaging, unless unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container;
- e. Any failure to make such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business in connection with the sale of the product; or
- f. Products which, after distribution or sale by you, have been labeled or re-labeled or used as a container, part or ingredient of any other thing or substance by or for the vendor; however this insurance does not apply to any insured person or organization, from who you have acquired such products, or any ingredient, part or container, entering into, accompanying or containing such products.

The provisions of this coverage extension do not apply unless the written contract or written agreement has been signed by the Named Insured prior to the "bodily injury" or "property damage".

Incidental Malpractice

Subparagraph 2.a.(1)(d) under **SECTION II - WHO IS AN INSURED** is deleted in its entirety and replaced with the following:

- (d) Arising out of his or her providing or failing to provide professional health care services.

This does not apply to nurses, emergency medical technicians or paramedics if you are not in the business or occupation of providing any such professional services.

This also does not apply to "bodily injury" caused by cardio-pulmonary resuscitation or first aid services administered by a co-"employee".

This provision does not apply if you are a Social Service or Senior Living risk.

SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS - Amendments

Knowledge Of Occurrence, Claim, Suit Or Loss

The following is added to Paragraph 2. **Duties in the Event of Occurrence, Offense, Claim or Suit** under **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS**:

The requirements under this paragraph do not apply until after the "occurrence" or offense is known to:

1. You, if you are an individual;
2. A partner, if you are a partnership;

3. An “executive officer” or insurance manager, if you are a corporation;
4. Your members, managers or insurance manager, if you are a limited liability company; or
5. Your elected or appointed officials, officers, members, trustees, board members, commission members, agency members, or your administrator or your insurance manager if you are an organization other than a partnership, joint venture, or limited liability company.

Primary and Non-Contributory Provision

The following is added to Paragraph 4. **Other Insurance, b. Excess Insurance** under **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS:**

This insurance is primary to and we will not seek contribution from any other insurance available to an additional insured under this policy provided that:

- (1) The additional insured is a Named Insured under such other insurance; and
- (2) You have agreed in a written contract, written agreement or written permit that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

Unintentional Failure To Disclose Hazards

The following is added to Paragraph 6. **Representations** under **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS:**

However, if you should unintentionally fail to disclose any existing hazards in your representations to us at the inception date of the policy, or during the policy period in connection with any additional hazards, we shall not deny coverage under this Coverage Part based upon such failure to disclose hazards.

Waiver Of Transfer Of Rights Of Recovery

The following is added to Paragraph 8. **Transfer of Rights Of Recovery Against Others To Us** under **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS:**

We will waive any right of recovery we may have against a person or organization because of payments we make for “bodily injury” or “property damage” arising out of your ongoing operations or “your work” done under a written contract or written agreement and included in the “products-completed operations hazard”, if:

1. You have agreed to waive any right of recovery against that person or organization in a written contract or written agreement;
2. Such person or organization is an additional insured on your policy; or

3. You have assumed the liability of that person or organization in that same contract, and it is an “insured contract”.

The section above only applies to that person or organization identified above, and only if the “bodily injury” or “property damage” occurs subsequent to the execution of the written contract or written agreement.

Liberalization

The following condition is added to **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS:**

If we revise this Coverage Part to provide more coverage without additional premium charge, subject to our filed company rules, your policy will automatically provide the additional coverage as of the day the revision is effective in your state.

Two or More Coverage Parts or Policies Issued By Us

(This provision is not Applicable in the state of New York or Wisconsin).

The following condition is added to **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS:**

It is our intention that the various coverage parts or policies issued to you by us, or any company affiliated with us, do not provide any duplication or overlap of coverage. We have exercised diligence to draft our coverage parts and policies to reflect this intention. However, if the facts and circumstances that will respond to any claim or “suit” give rise to actual or claimed duplication or overlap of coverage between the various coverage parts or policies issued to you by us or any company affiliated with us, the limit of insurance under all such coverage parts or policies combined shall not exceed the highest applicable limit under this coverage, or any one of the other coverage forms or policies.

This condition does not apply to any Excess or Umbrella policy issued by us specifically to apply as excess insurance over this coverage part or policy to which this coverage part is attached.

SECTION V - DEFINITIONS

Discrimination

(This provision does not apply in New York).

- A. The following is added to Definition 14. “Personal and advertising injury”:

“Personal and advertising injury” also means “discrimination” that results in injury to the feelings or reputation of a natural person, however only if such “discrimination” or humiliation is:

1. Not done by or at the direction of:
 - a. The insured; or

- b. Anyone considered an insured under **SECTION II - WHO IS AN INSURED;**

- 2. Not done intentionally to cause harm to another person.
- 3. Not directly or indirectly related to the employment, prospective employment or termination of employment of any person or persons by any insured.
- 4. Not arising out of any "advertisement" by the insured.

B. The following definition is added to SECTION V - DEFINITIONS:

"Discrimination" means:

- a. Any act or conduct that would be considered discrimination under any applicable federal, state, or local statute, ordinance or law;
- b. Any act or conduct that results in disparate treatment of, or has disparate impact on, a person, because of that person's race, religion, gender, sexual orientation, age, disability or physical impairment; or
- c. Any act or conduct characterized or interpreted as discrimination by a person based on that person's race, religion, gender, sexual orientation, age, disability or physical impairment.

It does not include acts or conduct characterized or interpreted as sexual intimidation or sexual harassment, or intimidation or harassment based on a person's gender.

Electronic Data

The following definition is added to **SECTION V - DEFINITIONS:**

"Electronic data" means information, facts or programs stored as or on, created or used on, or transmitted to or from computer software, including systems and applications software, hard or floppy disks, CD-ROMS, tapes, drives, cell, data processing devices or any other media which are used with electronically controlled equipment. For the purpose of the Electronic Data Liability coverage provided by this endorsement, Definition 17, "Property damage" is deleted in its entirety and replaced by the following:

17. "Property damage" means:

- a. Physical injury to tangible property, including all resulting loss of use of that property. All such loss of use shall be deemed to occur at the time of the physical injury that caused it; or

- b. Loss of, loss of use of, damage to, corruption of, inability to access, or inability to properly manipulate "electronic data", resulting from physical injury to tangible property. All such loss of "electronic data" shall be deemed to occur at the time of the "occurrence" that caused it.

For the purpose of the Electronic Data Liability coverage provided by this endorsement, "electronic data" is not tangible property.

Employee Amendment

Definition 5, "Employee" under **SECTION V - DEFINITIONS** is deleted in its entirety and replaced by the following:

- 5. "Employee" includes a "leased worker", or a "temporary worker". If you are a School, "Employee" also includes a student teacher.

Golfing Facility

The following definition is added to **SECTION V - DEFINITIONS:**

"Golfing facility" means a golf course, golf club, driving range, or miniature golf course.

Mental Anguish Amendment

(This provision does not apply in New York).

Definition 3, "Bodily injury" under **SECTION V - DEFINITIONS** is deleted in its entirety and replaced with the following:

- 3. "Bodily injury" means bodily injury, sickness or disease sustained by a person, including death resulting from any of these at any time. This includes mental anguish resulting from any bodily injury, sickness or disease sustained by a person. (In New York, mental anguish has been determined to be "bodily injury").

Not-for-profit Member

The following definition is added to **SECTION V - DEFINITIONS:**

"Not-for-profit member" means a person who is a member of a not-for-profit organization, including clubs and churches, who receives no financial or other compensation.

NCCI #: WC000313B
Policy #: 4095180

Chatos Concrete LLC
8326 Quivas Way
Denver, CO 80221

Moody Insurance Agency Inc
8055 E. Tufts Ave
Ste 1000
Denver, CO 80237
(303) 824-6600

ENDORSEMENT: Blanket Waiver of Subrogation

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

SCHEDULE

To any person or organization when agreed to under a written contract or agreement, as defined above and with the insured, which is in effect and executed prior to any loss.

Effective Date: December 16, 2022 Expires on: January 1, 2024
Pinnacol Assurance has issued this endorsement December 16, 2022

ElitePac®
Commercial Automobile Extension

COMMERCIAL AUTO
CA 78 09 11 17

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Business Auto Coverage Form apply unless modified by the endorsement.

AMENDMENTS TO SECTION II - LIABILITY COVERAGE

- A.** If this policy provides Auto Liability coverage for Owned Autos, the following extensions are applicable accordingly:

NEWLY ACQUIRED OR FORMED ORGANIZATIONS

The following is added to **SECTION II, A.1. - Who Is An Insured:**

Any organization you newly acquire or form, other than a partnership, joint venture or limited liability company over which you maintain ownership or majority interest, will qualify as a Named Insured if there is no similar insurance available to that organization. However:

1. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier;
2. Coverage does not apply to "bodily injury" or "property damage" resulting from an "accident" that occurred before you acquired or formed the organization.

No person or organization is an "insured" with respect to the conduct of any current or past partnership, joint venture or limited liability company that is not shown as a Named Insured in the Declarations.

EXPENSES FOR BAIL BONDS AND LOSS OF EARNINGS

Paragraphs (2) and (4) of **SECTION II, A.2.a. - Supplementary Payments** are deleted in their entirety and replaced with the following:

- (2) Up to the Limit of Insurance shown on the ElitePac Schedule for the cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" covered under this policy. We do not have to furnish these bonds.
- (4) All reasonable expenses incurred by the "insured" at our request. This includes actual loss of earnings because of time off from work, which we will pay up to the Limit of Insurance shown on the ElitePac Schedule.

EMPLOYEE INDEMNIFICATION AND EMPLOYER'S LIABILITY AMENDMENT

The following is added to **SECTION II, B.4. - Exclusions:**

This exclusion does not apply to a "volunteer worker" who is not entitled to workers compensation, disability or unemployment compensation benefits.

FELLOW EMPLOYEE COVERAGE

The **Fellow Employee** Exclusion, **SECTION II, B.5. -** is deleted in its entirety.

CARE, CUSTODY OR CONTROL AMENDMENT

The following is added to **SECTION II, B.6. - Exclusions:**

This exclusion does not apply to property owned by anyone other than an "insured", subject to the following:

1. The most we will pay under this exception for any one "accident" is the Limit of Insurance stated in the ElitePac Schedule; and
2. A per "accident" deductible as stated in the ElitePac Schedule applies to this exception.

- B.** If this policy provides Auto Liability coverage for Owned Autos or Non-Owned Autos, the following extension is applicable accordingly:

LIMITED LIABILITY COMPANIES

The following is added to **SECTION II, A.1. - Who Is An Insured:**

If you are a limited liability company, your members and managers are "insureds" while using a covered "auto" you don't own, hire or borrow during the course of their duties for you.

BLANKET ADDITIONAL INSUREDS - As Required By Contract

The following is added to **SECTION II, A.1. - Who Is An Insured:**



Any person or organization whom you have agreed in a written contract, written agreement or written permit that such person or organization be added as an additional "insured" on your policy. Such person or organization is an additional "insured" only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by your ownership, maintenance or use of a covered "auto". This coverage shall be primary and non-contributory with respect to the additional "insured". This provision only applies if:

1. It is required in the written contract, written agreement or written permit identified in this section;
2. It is permitted by law; and
3. The written contract or written agreement has been executed (executed means signed by a named insured) or written permit issued prior to the "bodily injury" or "property damage".

C. If this policy provides Auto Liability coverage for Non-Owned Autos, the following extension is applicable accordingly:

EMPLOYEES AS INSURED

If this policy provides Auto Liability coverage for Non-Owned Autos, the following is added to **SECTION II, A.1. - Who Is An Insured:**

Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow in your business or your personal affairs.

An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in that "employee's" name with your permission, while performing duties related to the conduct of your business.

AMENDMENTS TO SECTION III - PHYSICAL DAMAGE COVERAGE

If this policy provides Comprehensive, Specified Causes of Loss or Collision coverage, the following extensions are applicable for those "autos" for which Comprehensive, Specified Causes of Loss or Collision coverage is purchased:

TOWING AND LABOR

SECTION III, A.2. - Towing is deleted in its entirety and replaced with the following:

We will pay all reasonable towing and labor costs up to the maximum Limit of Insurance shown on the ElitePac Schedule per tow each time a covered "Private Passenger Auto", "Social Service Van or Bus" or "Light Truck" is disabled and up to the maximum Limit of Insurance per tow each time a covered "Medium Truck", "Heavy Truck" or "Extra Heavy Truck" is disabled.

For labor charges to be eligible for reimbursement the labor must be performed at the place of disablement.

This coverage extension does not apply to Emergency Services Organizations and Governmental Entities.

GLASS BREAKAGE DEDUCTIBLE

The following is added to **SECTION III, A.3. - Glass Breakage - Hitting A Bird Or Animal - Falling Objects or Missiles:**

If damaged glass is repaired rather than replaced, no deductible will apply for such repair. This extension does not apply to Emergency Services Organizations and Governmental Entities.

ADDITIONAL TRANSPORTATION EXPENSES SECTION III, A.4.a. - Transportation Expenses is deleted in its entirety and replaced with the following:

We will pay up to the maximum Limit of Insurance shown on the ElitePac Schedule for temporary transportation expenses that you incur because of any "loss" to a covered "auto", but only if the covered "auto" carries the coverages and meets the requirements described in **1.** or **2.** below:

1. We will pay temporary transportation expenses for total theft of a covered "auto". We will only pay for such expenses incurred during the period beginning 24 hours after the theft and ending, regardless of the policy's expiration, when the covered "auto" is returned to use or we pay for its "loss".
2. For "loss" other than total theft of a covered "auto" under Comprehensive or Specified Causes of Loss Coverage, or for any "loss" under Collision Coverage to a covered "auto", we will only pay for those temporary transportation expenses incurred during the policy period beginning 24 hours after the "loss" and ending, regardless of the policy's expiration, with the lesser of the number of days reasonably required to repair or replace the covered "auto" or 30 days.

Paragraph **2.** of this extension does not apply while there are spare or reserve "autos" available to you for your operations.

This coverage extension does not apply to Emergency Services Organizations and Governmental Entities.

HIRED AUTO PHYSICAL DAMAGE COVERAGE

The following is added to **SECTION III, A.4. - Coverage Extensions:**

Physical Damage coverage is hereby extended to apply to Physical Damage "loss" to "autos" leased, hired, rented or borrowed without a driver. We will provide coverage equal to the broadest coverage available to any covered "auto" shown in the Declarations. But, the most we will pay for "loss" to each "auto" under this coverage extension is the lesser of:

1. The Limit of Insurance stated in the ElitePac Schedule; or
2. The actual cash value of the damaged or stolen property as of the time of the "loss"; or
3. The actual cost of repairing or replacing the damaged or stolen property with other property of like kind and quality. A part is of like kind and quality when it is of equal or better condition than the pre-accident part. We will use the original equipment from the manufacturer when:
 - (a) The operational safety of the vehicle might otherwise be impaired;
 - (b) Reasonable and diligent efforts to locate the appropriate rebuilt, aftermarket or used part have been unsuccessful; or
 - (c) A new original equipment part of like kind and quality is available and will result in the lowest overall repair cost.

For each leased, hired, rented or borrowed "auto" our obligation to pay "losses" will be reduced by a deductible equal to the highest deductible applicable to any owned "auto" for that coverage. No deductible will be applied to "losses" caused by fire or lightning.

SECTION IV, B.5. Other Insurance Condition, Paragraph 5.b. is deleted in its entirety and replaced by the following:

For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

1. Any covered "auto" you lease, hire, rent, or borrow; and
2. Any covered "auto" hired or rented by your "employee" under a contract or agreement in that "employee's" name, with your permission, while performing duties related to the conduct of your business.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

This coverage extension does not apply to Emergency Services Organizations and Governmental Entities.

HIRED AUTO LOSS OF USE COVERAGE

The following is added to **SECTION III, A.4. - Coverage Extensions**:

We will pay expenses for which you are legally responsible to pay up to the Limit of Insurance shown on the ElitePac Schedule per "accident" for loss of use of a leased, hired, rented or borrowed "auto" if it results from an "accident".

This coverage extension does not apply to Emergency Services Organizations, Governmental Entities, and Schools.

AUTO LOAN/LEASE GAP COVERAGE (Not Applicable in New York)

The following is added to **SECTION III, A.4. - Coverage Extensions**:

In the event of a total "loss" to a covered "auto" we will pay any unpaid amount due on the lease or loan for a covered "auto", less:

1. The amount paid under the Physical Damage Coverage Section of the policy; and
2. Any:
 - a. Overdue lease/loan payments at the time of "loss";
 - b. Financial penalties imposed under a lease for excessive use, abnormal wear and tear, high mileage or similar charges;
 - c. Security deposits not refunded by the lessor or financial institution;
 - d. Costs for extended warranties, credit life, health, accident, or disability insurance purchased with the loan or lease; and
 - e. Carry-over balances from previous leases or loans.

You are responsible for the deductible applicable to the "loss" for the covered "auto".

PERSONAL EFFECTS

The following is added to **SECTION III, A.4. - Coverage Extensions**:

If this policy provides Comprehensive Coverage for a covered "auto" you own and that covered "auto" is stolen, we will pay up to the Limit of Insurance shown on the ElitePac Schedule, without application of a deductible, for lost personal effects that were in the covered "auto" at the time of theft. Personal effects do not include jewelry, tools, money, or securities. This coverage is excess over any other collectible insurance.

AIRBAG COVERAGE

The following is added to **SECTION III, B.3.a. - Exclusions**:

Mechanical breakdown does not include the accidental discharge of an airbag.

This coverage extension does not apply to Emergency Services Organizations and Governmental Entities.

EXPANDED AUDIO, VISUAL, AND DATA ELECTRONIC EQUIPMENT COVERAGE

SECTION III, B.4. - Exclusions

This exclusion does not apply to the following:

1. Global positioning systems;
2. "Telematic devices"; or
3. Electronic equipment that reproduces, receives or transmits visual or data signals and accessories used with such equipment, provided such equipment is:

- a. Permanently installed in or upon the covered "auto" at the time of the "loss";
- b. Removable from a housing unit that is permanently installed in the covered "auto" at the time of the "loss";
- c. Designed to be solely operated by use of power from the "auto's" electrical system; or
- d. Designed to be used solely in or upon the covered "auto".

For each covered "loss" to such equipment, a deductible of \$50 shall apply, unless the deductible otherwise applicable to such equipment is less than \$50, at which point the lower deductible, if any, will apply.

COMPREHENSIVE DEDUCTIBLE - LOCATION TRACKING DEVICE

The following is added to **SECTION III, D. - Deductible:**

Any Comprehensive Coverage Deductible shown in the Declarations will be reduced by 50% for any "loss" caused by theft if the covered "auto" is equipped with a location tracking device and that device was the sole method used to recover the "auto".

PHYSICAL DAMAGE LIMIT OF INSURANCE

SECTION III, C. - Limit Of Insurance is deleted in its entirety and replaced with the following:

The most we will pay for a "loss" in any one "accident" is the lesser of:

1. The actual cash value of the damaged or stolen property as of the time of the "loss"; or
2. The cost of repairing or replacing the damaged or stolen property with other property of like kind and quality.

This coverage extension does not apply to Emergency Services Organizations and Governmental Entities.

AMENDMENTS TO SECTION IV - BUSINESS AUTO CONDITIONS

DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS

The following is added to **SECTION IV, A.2.a. - Duties In The Event Of Accident, Claim, Suit Or Loss:**

The notice requirements for reporting "accident" claim, "suit" or "loss" information to us, including provisions related to the subsequent investigation of such "accident", claim, "suit" or "loss" do not apply until the "accident", claim, "suit" or "loss" is known to:

1. You, if you are an individual;
2. A partner, if you are a partnership;

3. An executive officer or insurance manager, if you are a corporation;
4. Your members, managers or insurance manager, if you are a limited liability company;
5. Your elected or appointed officials, trustees, board members or your insurance manager, if you are an organization other than a partnership, joint venture or limited liability company.

But, this section does not amend the provisions relating to notification of police or protection or examination of the property that was subject to the "loss".

WAIVER OF SUBROGATION

SECTION IV, A.5. - Transfer Of Rights Of Recovery Against Others To Us is deleted in its entirety and replaced with the following:

We waive any right of recovery we may have against any person or organization because of payments we make for "bodily injury" or "property damage" resulting from the ownership, maintenance or use of a covered "auto" but only when you have assumed liability for such "bodily injury" or "property damage" in an "insured contract". In all other circumstances, if a person or organization to or for whom we make payment under this Coverage Form has rights to recover damages from another, those rights are transferred to us.

MULTIPLE DEDUCTIBLES

The following is added to **SECTION IV, A. - Loss Conditions:**

If a "loss" from one event involves two or more covered "autos" and coverage under Comprehensive or Specified Causes of Loss applies, only the highest applicable deductible will be applied.

CONCEALMENT, MISREPRESENTATION OR FRAUD

The following is added to **SECTION IV, B.2. - Concealment, Misrepresentation Or Fraud:**

If you should unintentionally fail to disclose any existing hazards in your representations to us prior to the inception date of the policy or during the policy period in connection with any newly discovered hazards, we will not deny coverage under this Coverage Form based upon such failure.

POLICY PERIOD, COVERAGE TERRITORY

SECTION IV, B.7. - Policy Period, Coverage Territory is deleted in its entirety and replaced with the following:

Under this Coverage Form, we cover "accidents" and "losses" occurring:

- a. During the policy period shown in the Declarations; and
- b. Within the "Coverage Territory".

We also cover "loss" to or "accidents" involving a covered "auto" while being transported between any of these places.

TWO OR MORE COVERAGE FORMS OR POLICIES ISSUED BY US - DEDUCTIBLES

The following is added to **SECTION IV, B.8. - Two Or More Coverage Forms Or Policies Issued By Us:**

If a "loss" covered under this Coverage Form also involves a "loss" to other property resulting from the same "accident" that is covered under this policy or another policy issued by us or any member company of ours, only the highest applicable deductible will be applied.

AMENDMENTS TO SECTION V - DEFINITIONS

BODILY INJURY INCLUDING MENTAL ANGUISH (Not Applicable in New York)

The definition of bodily injury is deleted in its entirety and replaced by the following:

"Bodily injury" means bodily injury, sickness, or disease sustained by a person, including death resulting from any of these. "Bodily injury" includes mental anguish resulting from bodily injury, sickness or disease sustained by a person.

ADDITIONS TO SECTION V - DEFINITIONS

COVERAGE TERRITORY

"Coverage Territory" means:

1. The United States of America (including its territories and possessions), Canada and Puerto Rico; and
2. Anywhere in the world, except for any country or jurisdiction that is subject to trade or other economic sanction or embargo by the United States of America, if a covered "auto" is leased, hired, rented, or borrowed without a driver for a period of 30 days or less, and the insured's responsibility to pay "damages" is determined in a "suit" on the merits in and under the substantive law of the United States of America (including its territories and possessions), Puerto Rico, or Canada, or in a settlement we agree to.

If we are prevented by law, or otherwise, from defending the "insured" in a "suit" brought in a location described in Paragraph 2. above, the insured will conduct a defense of that "suit". We will reimburse the "insured" for the reasonable and necessary expenses incurred for the defense of any such "suit" seeking damages to which this insurance applies, and that we would have paid had we been able to exercise our right and duty to defend.

EXTRA HEAVY TRUCK

"Extra Heavy Truck" means a truck with a gross vehicle weight rating of 45,001 pounds or more.

HEAVY TRUCK

"Heavy Truck" means a truck with a gross vehicle weight rating of 20,001 pounds to 45,000 pounds.

LIGHT TRUCK

"Light Truck" means a truck with a gross vehicle weight rating of 10,000 pounds or less.

MEDIUM TRUCK

"Medium Truck" means a truck with a gross vehicle weight rating of 10,001 pounds to 20,000 pounds.

PRIVATE PASSENGER AUTO

"Private Passenger Auto" means a four-wheel "auto" of the private passenger or station wagon type. A pickup, panel truck or van not used for business is included within the definition of a "private passenger auto".

SOCIAL SERVICE VAN OR BUS

"Social Service Van or Bus" means a van or bus used by a government entity, civic, charitable or social service organization to provide transportation to clients incidental to the social services sponsored by the organization, including special trips and outings.

TELEMATIC DEVICE

"Telematic Device" includes devices designed for the collection and dissemination of data for the purpose of monitoring vehicle and/or driver performance. This includes Global Positioning System technology, wireless safety communications and automatic driving assistance systems, all integrated with computers and mobile communications technology in automotive navigation systems.

VOLUNTEER WORKER

"Volunteer worker" means a person who performs business duties for you, for no financial or other compensation.

Contracting, Installation, Service and Repair General Liability Extended ElitePac® Endorsement

COMMERCIAL GENERAL LIABILITY
CG 79 88 01 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

1. BLANKET ADDITIONAL INSURED

a. Ongoing Operations

SECTION II — WHO IS AN INSURED is amended to include as an additional insured:

1. Any person or organization for whom you are performing operations when you and such person or organization have agreed in a written contract, written agreement or written permit that such person or organization be added as an additional insured on your commercial general liability policy; and
2. Any other person or organization, including any architects, engineers or surveyors not engaged by you, whom you are required to add as an additional insured under your policy in the contract or agreement in Paragraph 1. above;

Such person or organization is an additional insured only with respect to liability arising out of your ongoing operations performed under that contract, agreement, or permit when that contract, agreement, or permit requires the additional insured be added with respect to liability arising out of your ongoing operations.

If the written contract, written agreement, or written permit does not require that the additional insured be added with respect to liability arising out of your ongoing operations, then such person or organization is an additional insured only with respect to "bodily injury", "property damage" or "personal and advertising injury" caused in whole or in part by your ongoing operations performed under that contract, agreement, or permit.

b. Completed Operations

SECTION II — WHO IS AN INSURED is amended to include as an additional insured:

1. Any person or organization for whom you are performing or have performed operations when you and such person or organization have agreed in a written contract, written agreement or written permit that such person or organization be added as an additional insured on your commercial general liability policy; and
2. Any other person or organization, including any architects, engineers or surveyors not engaged by you, whom you are required to add as an additional insured under your policy in the contract or agreement in Paragraph 1. above;

Such person or organization is an additional insured only with respect to their liability arising out of "your work" performed under that contract, agreement, or permit and included in the "products-completed operations hazard" when that contract, agreement, or permit requires the additional insured be added with respect to liability arising out of "your work" performed under that contract, agreement, or permit and included in the "products-completed operations hazard".



If the written contract, written agreement, or written permit does not require that the additional insured be added with respect to liability arising out of "your work" performed under that contract, agreement, or permit and included in the "products-completed operations hazard", then such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by "your work" performed under that contract, agreement, or permit and included in the "products-completed operations hazard".

- c. The coverages provided in Paragraphs **a.** and **b.** do not apply unless the written contract or written agreement has been signed by the Named Insured or written permit issued prior to the "bodily injury", "property damage" or "personal and advertising injury".

d. Exclusions

- (1) With respect to the insurance afforded to additional insureds under **a. Ongoing Operations** the following is added to **2. Exclusions** under **SECTION I — COVERAGE A — BODILY INJURY AND PROPERTY DAMAGE LIABILITY**:

This insurance does not apply to "bodily injury", "property damage", or "personal and advertising injury" occurring after:

- (a) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or
- (b) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.
- (2) With respect to the insurance afforded to these additional insureds under **a. Ongoing Operations** and **b. Completed Operations**, the following is added to **2. Exclusions** under **SECTION I — COVERAGE A — BODILY INJURY AND PROPERTY DAMAGE LIABILITY**:

This insurance does not apply to:

"Bodily injury", "property damage", or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

- (a) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
- (b) Supervisory, inspection, architectural or engineering activities.

e. Conditions

With respect to the insurance afforded to these additional insureds under **a. Ongoing Operations** and **b. Completed Operations** the following is added to Paragraph **4. Other Insurance, a. Primary Insurance** under **SECTION IV — COMMERCIAL GENERAL LIABILITY CONDITIONS**:

This insurance is primary and will not contribute with any other insurance available to an additional insured under this coverage part provided that:

- (1) The additional insured is a Named Insured under such other insurance.
- (2) You have agreed in a written contract, written agreement or written permit to include that additional insured on your General Liability policy on a primary and/or non-contributory basis.

2. PROPERTY DAMAGE CARE, CUSTODY OR CONTROL

The following is added to **Exclusion j.** under **SECTION I — COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY**:

Paragraphs **(4)** and **(5)** do not apply for the limited purpose of providing the coverage and sub-limits of liability as set forth below.

We will pay those sums that the insured becomes legally obligated to pay as damages arising out of "property damage" to:

- (1) Personal property in the care, custody or control of the insured; and

- (2) That particular part of real property on which you or any contractors or subcontractors working directly or indirectly on your behalf are performing operations, if the “property damage” arises out of those operations.

The most we will pay under (1) and (2) above in any one “occurrence” or for all damages during any one policy period is a sub-limit of \$100,000.

These limits are included in and not in addition to the Limits of Insurance shown in the Declarations of the Commercial General Liability Policy.

Our right and duty to defend the insured against any “suit” for damages under (1) and (2) above ends when we have used up the applicable sub-limit of liability in the payment of judgments or settlements under it.

3. OTHER INSURANCE AMENDMENT — SUPPLEMENTAL COVERAGE FOR INSURED’S INVOLVEMENT IN A CONSOLIDATED (WRAP-UP) INSURANCE PROGRAM OR SIMILAR PROJECT

The following is added to **SECTION IV — COMMERCIAL GENERAL LIABILITY CONDITIONS**, Paragraph 4. Other Insurance b. Excess Insurance (1)(a):

- (v) That is covered by a consolidated (wrap-up) or similar insurance program provided by the prime contractor/project manager or owner of the construction project in which you are involved for your ongoing operations or operations included within the “products-completed operations hazard”, unless such consolidated (wrap-up) or similar program is specifically excluded from coverage on this policy.

4. FELLOW EMPLOYEE EXTENSION

Under **SECTION II — WHO IS AN INSURED** Paragraphs 2.a. and 2.a. (1) are replaced by the following:

- a. Your “volunteer workers” only while performing duties related to the conduct of your business, or your “employees”, other than either your “executive officers” (if you are an organization other than a partnership, joint venture, or limited liability company) or your managers (if you are a limited liability company), but only for acts within the scope of their employment by you or while performing duties related to the conduct of your business. The Employers Liability exclusion (**SECTION I COVERAGES; COVERAGE A, exclusion e.**) does not apply to this provision. However, none of these “employees” or “volunteer workers” are insureds for:

- (1) “Bodily injury” or “personal and advertising injury”:

- (a) Arising out of his or her providing or failing to provide professional health care services.

5. CONTRACTUAL LIABILITY (RAILROADS)

Definition 9. Insured Contract is amended as follows:

Paragraph c. is deleted in its entirety and replaced with the following:

Any easement or license agreement;

Paragraph f.(1) is deleted in its entirety.

6. CONTRACTUAL LIABILITY AMENDMENT — (PERSONAL AND ADVERTISING INJURY)

If it is required in a written contract, written agreement or written permit with the insured that any contractual liability exclusion for Personal Injury be removed from the policy, then Exclusion e. **Contractual Liability** under **COVERAGE B PERSONAL AND ADVERTISING INJURY, 2. Exclusions** is deleted in its entirety and replaced with the following:

e. Contractual Liability

“Personal and advertising Injury” for which the insured has assumed liability in a contract or agreement arising out of an “advertisement”. This exclusion does not apply to liability for damages that the insured would have in the absence of the contract or agreement.

7. WAIVER OF GOVERNMENTAL IMMUNITY

We will waive, both in the adjustment of claims and in the defense of “suits” against the insured, any governmental immunity of the insured, unless the insured requests in writing that we not do so.

Waiver of immunity as a defense will not subject us to liability for any portion of a claim or judgment in excess of the applicable limit of insurance.

8. DAMAGE TO PREMISES RENTED TO YOU

The Limit of Insurance for Damage To Premises Rented To You is increased to \$1,000,000.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BLANKET ADDITIONAL INSURED

(Includes Products-Completed Operations If Required By Contract)

This endorsement modifies insurance provided under the following:
COMMERCIAL GENERAL LIABILITY COVERAGE PART

PROVISIONS

The following is added to **SECTION II – WHO IS AN INSURED**:

Any person or organization that you agree in a written contract or agreement to include as an additional insured on this Coverage Part is an insured, but only:

- a. With respect to liability for "bodily injury" or "property damage" that occurs, or for "personal injury" caused by an offense that is committed, subsequent to the signing of that contract or agreement and while that part of the contract or agreement is in effect; and
- b. If, and only to the extent that, such injury or damage is caused by acts or omissions of you or your subcontractor in the performance of "your work" to which the written contract or agreement applies. Such person or organization does not qualify as an additional insured with respect to the independent acts or omissions of such person or organization.

The insurance provided to such additional insured is subject to the following provisions:

- a. If the Limits of Insurance of this Coverage Part shown in the Declarations exceed the minimum limits required by the written contract or agreement, the insurance provided to the additional insured will be limited to such minimum required limits. For the purposes of determining whether this limitation applies, the minimum limits required by the written contract or agreement will be considered to include the minimum limits of any Umbrella or Excess liability coverage required for the additional insured by that written contract or agreement. This provision will not increase the limits of insurance described in Section III – Limits Of Insurance.
- b. The insurance provided to such additional insured does not apply to:

- (1) Any "bodily injury", "property damage" or "personal injury" arising out of the providing, or failure to provide, any professional architectural, engineering or surveying services, including:

- (a) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders or change orders, or the preparing, approving, or failing to prepare or approve, drawings and specifications; and

- (b) Supervisory, inspection, architectural or engineering activities.

- (2) Any "bodily injury" or "property damage" caused by "your work" and included in the "products-completed operations hazard" unless the written contract or agreement specifically requires you to provide such coverage for that additional insured during the policy period.

- c. The additional insured must comply with the following duties:

- (1) Give us written notice as soon as practicable of an "occurrence" or an offense which may result in a claim. To the extent possible, such notice should include:

- (a) How, when and where the "occurrence" or offense took place;

- (b) The names and addresses of any injured persons and witnesses; and

- (c) The nature and location of any injury or damage arising out of the "occurrence" or offense.

- (2) If a claim is made or "suit" is brought against the additional insured:

COMMERCIAL GENERAL LIABILITY

- (a) Immediately record the specifics of the claim or "suit" and the date received; and
 - (b) Notify us as soon as practicable and see to it that we receive written notice of the claim or "suit" as soon as practicable.
- (3) Immediately send us copies of all legal papers received in connection with the claim or "suit", cooperate with us in the investigation or settlement of the claim or defense against the "suit", and otherwise comply with all policy conditions.
- (4) Tender the defense and indemnity of any claim or "suit" to any provider of other insurance which would cover such additional insured for a loss we cover. However, this condition does not affect whether the insurance provided to such additional insured is primary to other insurance available to such additional insured which covers that person or organization as a named insured as described in Paragraph 4., Other Insurance, of Section IV – Commercial General Liability Conditions.

EXHIBIT 3

TOWN OF CASTLE ROCK AFFIDAVIT OF INDEPENDENT CONTRACTOR STATUS

I, _____, an authorized representative of **Chato's Concrete, LLC**, holding legal authority to sign this Affidavit declare under oath that I am 18 years or older and have the capacity to sign this Affidavit.

In accordance with Section 8-70-115, C.R.S., I certify the following:

- With respect to the Agreement, **Chato's Concrete, LLC** represents and warrants that it is its express intention to be employed as an independent contractor of the Town of Castle Rock (the "Town") for purposes of performing the work or services which are the subject of the Agreement. **Chato's Concrete, LLC** understands and confirms that the Town reasonably relied on this intention in entering into the Agreement.
- The Town does not require **Chato's Concrete, LLC** work exclusively for the Town, except that **Chato's Concrete, LLC** may choose to work exclusively for the Town for a finite period of time specified in the document.
- The Town does not establish a quality standard for the work or services performed pursuant to the Agreement, except that the Town may provide plans and specifications regarding the work but cannot oversee the actual work or provide instruction as to how the work is performed.
- The Town does not pay a salary or hourly rate but rather a fixed or contract rate, as noted in the terms and conditions of the Agreement, and any Exhibits made part of the Agreement.
- The Town cannot terminate the work or services performed during the contract period unless otherwise agreed to in the terms and conditions of the Agreement.
- **Chato's Concrete, LLC** is not provided with anything, if at all, more than minimal training from the Town.
- The Town does not provide **Chato's Concrete, LLC** with tools or benefits for the performance of the work or services which are the subject of the Agreement, except materials and equipment may be supplied.

- The Town does not dictate the time of performance, except that a completion schedule and a range of mutually agreeable work hours may be established in the Agreement.
- The Town issues checks payable to **Chato's Concrete, LLC** a party to the Agreement; and the Town does not combine their business operations in any way with the **Chato's Concrete, LLC's** business, but instead maintains such operations as separate and distinct.
- **Chato's Concrete, LLC** understands that if a professional license to practice a particular occupation under the laws of the State of Colorado requires the exercise of a supervisory function with regard to the work of services performed under this Agreement, such supervisory role shall not affect the independent contractor relationship with the Town.
- **CHATO'S CONCRETE, LLC UNDERSTANDS THAT NEITHER CHATO'S CONCRETE, LLC NOR ITS EMPLOYEES ARE ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS OF THE TOWN.**
- **CHATO'S CONCRETE, LLC UNDERSTANDS THAT IT IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THE AGREEMENT.**

CONTRACTOR:

CHATO'S CONCRETE, LLC

By: _____

Name

STATE OF COLORADO)

) ss.

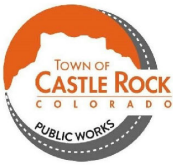
COUNTY OF _____)

The foregoing instrument as acknowledged before me this ____ day of _____,
20__ by _____ as _____ of the above mentioned Contractor.

Witness my official hand and seal.

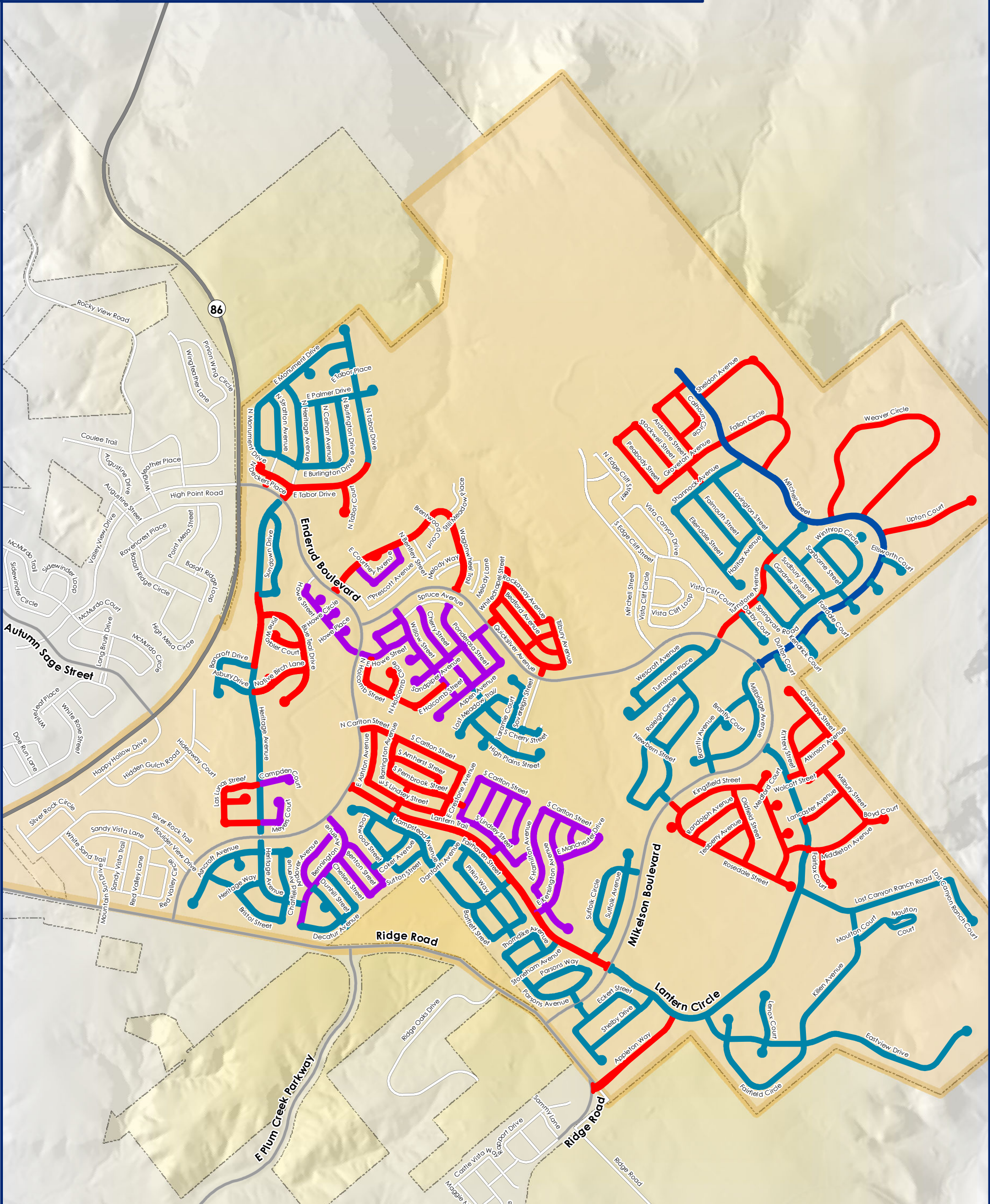
My commission expires:

Notary Public



RECOMMENDED PAVEMENT TREATMENTS

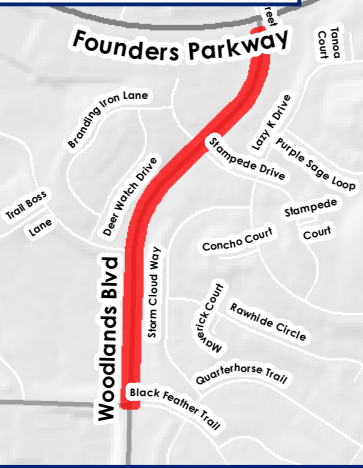
PMP East, Downtown and Primary Regions (Total Budget- \$18,500,000)



Downtown Treatments



Woodlands Blvd Slurry Seal



Mikelson Blvd- Northbound Reconstruction



PMP East Treatments

- 2in Mill and Overlay
- 3in Mill and Overlay
- Asphalt Slurry Seal
- Roadway Reconstruction

- PMP East Region (2023)
- Town Limits



Disclaimer: The data presented has been compiled from various sources, each of which introduces varying degrees of inaccuracies or inconsistencies. Such discrepancies in data are inherent and in supplying this product to the public the Town of Castle Rock assumes no liability for its use or accuracy. For questions or comments regarding omissions, corrections, or updates please visit CRgov.com/directory for contact information.

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2023 CURB, GUTTER, WALK REPLACEMENT BID COMPARISON

BID SCHEDULE A - 2023 CURB, GUTTER and SIDEWALK REPLACEMENT				CONTRACTOR BID AVG.	CONTRACTOR BID AVG.	PUBLIC WORKS ESTIMATE		SUNLAND ASPHALT		ALPINE CIVIL CONSTRUCTION INC.		ESI		KRM CONCRETE LLC.		CENTENNIAL CONCRETE		CHATO'S CONCRETE LLC.		SILVA		ESSENTIAL CONTRACTOR		JALISCO INTERNATIONAL INC.	
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	AVG. COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB, GUTTER TYPE 2	LF	2,328	\$17.26	\$40,186.45	\$12.25	\$28,518.00	\$27.18	\$63,275.04	\$5.00	\$11,640.00	\$12.00	\$27,936.00	\$12.00	\$27,936.00	\$41.88	\$97,496.64	\$10.00	\$23,280.00	\$11.00	\$25,608.00	\$17.50	\$40,740.00	\$18.80	\$43,766.40
202B	REMOVAL OF CURB, GUTTER AND SIDEWALK	LF	2,099	\$29.91	\$62,788.09	\$17.75	\$37,257.25	\$44.87	\$94,182.13	\$20.00	\$41,980.00	\$17.10	\$35,892.90	\$19.25	\$40,405.75	\$70.00	\$146,930.00	\$15.00	\$31,485.00	\$10.00	\$20,990.00	\$31.00	\$65,069.00	\$42.00	\$88,158.00
202C	REMOVAL OF SIDEWALK	SY	358	\$31.78	\$11,377.24	\$16.15	\$5,781.70	\$43.87	\$15,705.46	\$20.00	\$7,160.00	\$26.65	\$9,540.70	\$21.00	\$7,518.00	\$70.00	\$25,060.00	\$16.00	\$5,728.00	\$17.00	\$6,086.00	\$24.50	\$8,771.00	\$47.00	\$16,826.00
202D	REMOVAL OF CONCRETE PAVEMENT (CROSSSPAN & ALLEY CONCRETE	SY	300	\$37.34	\$11,201.00	\$28.60	\$8,580.00	\$41.03	\$12,309.00	\$41.00	\$12,300.00	\$30.75	\$9,225.00	\$24.25	\$7,275.00	\$70.00	\$21,000.00	\$20.00	\$6,000.00	\$20.00	\$6,000.00	\$27.00	\$8,100.00	\$62.00	\$18,600.00
202E	REMOVAL OF CURB RAMP	SY	1,138	\$32.70	\$37,217.66	\$24.50	\$27,881.00	\$47.34	\$53,872.92	\$26.00	\$29,588.00	\$27.00	\$30,726.00	\$20.00	\$22,760.00	\$70.00	\$79,660.00	\$18.00	\$20,484.00	\$18.00	\$20,484.00	\$25.00	\$28,450.00	\$43.00	\$48,934.00
202F	REMOVAL OF ASPHALT MAT (PATCHING)(CONTINGENCY)	SY	25	\$60.52	\$1,512.92	\$23.75	\$593.75	\$70.65	\$1,766.25	\$13.00	\$325.00	\$60.00	\$1,500.00	\$45.00	\$1,125.00	\$100.00	\$2,500.00	\$15.00	\$375.00	\$90.00	\$2,250.00	\$72.00	\$1,800.00	\$79.00	\$1,975.00
203	UNCLASSIFIED EXCAVATION (CIP) (6") (CONTINGENCY)	SY	50	\$55.49	\$2,774.39	\$36.70	\$1,835.00	\$131.89	\$6,594.50	\$10.00	\$500.00	\$44.50	\$2,225.00	\$30.00	\$1,500.00	\$50.00	\$2,500.00	\$50.00	\$2,500.00	\$50.00	\$2,500.00	\$120.00	\$6,000.00	\$13.00	\$650.00
210A	TYPE R INLET PAN (REMOVE AND REPLACE)	LF	27	\$93.76	\$2,531.64	\$82.70	\$2,232.90	\$70.88	\$1,913.76	\$85.00	\$2,295.00	\$110.00	\$2,970.00	\$78.00	\$2,106.00	\$100.00	\$2,700.00	\$60.00	\$1,620.00	\$90.00	\$2,430.00	\$50.00	\$1,350.00	\$200.00	\$5,400.00
210B	TYPE R INLET TOP (REPAIR)	SF	729	\$69.32	\$50,531.04	\$86.60	\$63,131.40	\$117.34	\$85,540.86	\$65.00	\$47,385.00	\$90.00	\$65,610.00	\$90.00	\$58,320.00	\$9.50	\$6,925.50	\$100.00	\$72,900.00	\$90.00	\$65,610.00	\$15.00	\$10,935.00	\$57.00	\$41,553.00
304	AGGREGATE BASE COURSE (CLASS 6) (6") (CONTINGENCY)	SY	20	\$45.33	\$906.58	\$34.80	\$696.00	\$42.36	\$847.20	\$55.00	\$1,100.00	\$42.60	\$852.00	\$30.00	\$600.00	\$50.00	\$1,000.00	\$30.00	\$600.00	\$20.00	\$400.00	\$20.00	\$2,400.00	\$36.00	\$720.00
403	HBP (PATCHING) (GR SX) (6") (PG 58-28)(CONTINGENCY)	SY	50	\$136.68	\$5,628.20	\$97.25	\$4,862.50	\$328.90	\$5,591.30	\$80.00	\$4,000.00	\$118.25	\$5,912.50	\$40.00	\$2,000.00	\$100.00	\$5,000.00	\$200.00	\$10,000.00	\$100.00	\$5,000.00	\$150.00	\$7,500.00	\$113.00	\$5,650.00
412A	CONCRETE PAVEMENT (10") (CROSSSPAN) (HIGH EARLY)	SY	188	\$149.76	\$28,154.88	\$133.00	\$25,004.00	\$191.84	\$36,065.92	\$147.00	\$27,636.00	\$159.00	\$29,892.00	\$120.00	\$22,560.00	\$70.00	\$13,160.00	\$160.00	\$30,080.00	\$135.00	\$25,380.00	\$120.00	\$22,560.00	\$245.00	\$46,060.00
421B	CONCRETE PAVEMENT (10") (FILLET)	SY	112	\$157.83	\$17,676.71	\$125.00	\$14,000.00	\$239.45	\$26,818.40	\$137.00	\$15,344.00	\$159.00	\$17,808.00	\$120.00	\$13,440.00	\$70.00	\$7,840.00	\$150.00	\$16,800.00	\$135.00	\$15,120.00	\$110.00	\$12,320.00	\$300.00	\$33,600.00
608A	CONCRETE SIDEWALK (6")	SY	358	\$81.99	\$29,350.83	\$80.00	\$28,640.00	\$149.87	\$53,653.46	\$50.00	\$17,900.00	\$80.00	\$28,640.00	\$72.00	\$25,776.00	\$70.00	\$25,060.00	\$75.00	\$26,850.00	\$100.00	\$35,800.00	\$61.00	\$21,838.00	\$80.00	\$28,640.00
608B	MOUNTABLE CURB CORNER RAMP (ADA) (CAST IRON)	SY	1,006	\$143.30	\$144,164.27	\$140.00	\$140,840.00	\$153.49	\$154,410.94	\$132.00	\$132,792.00	\$134.25	\$135,055.50	\$102.00	\$102,612.00	\$250.00	\$251,500.00	\$120.00	\$120,720.00	\$120.00	\$120,720.00	\$118.00	\$118,708.00	\$160.00	\$160,960.00
608C	MOUNTABLE CURB MID-BLOCK RAMP (ADA) (CAST IRON)	SY	132	\$173.11	\$22,850.81	\$160.00	\$21,120.00	\$252.01	\$33,265.32	\$175.00	\$23,100.00	\$165.00	\$21,780.00	\$120.00	\$15,840.00	\$250.00	\$33,000.00	\$120.00	\$15,840.00	\$128.00	\$16,896.00	\$118.00	\$15,576.00	\$230.00	\$30,360.00
609A	VERTICAL CURB, GUTTER AND SIDEWALK (6")	LF	1,236	\$74.37	\$91,918.57	\$59.30	\$73,294.80	\$112.26	\$138,753.36	\$65.00	\$80,340.00	\$67.00	\$82,812.00	\$79.00	\$97,644.00	\$48.05	\$59,389.80	\$46.00	\$56,856.00	\$72.00	\$88,992.00	\$70.00	\$86,520.00	\$110.00	\$135,960.00
609B	MOUNTABLE CURB, GUTTER AND SIDEWALK 7" 11"	LF	863	\$87.48	\$75,492.36	\$67.90	\$58,597.70	\$158.24	\$136,561.12	\$80.00	\$69,040.00	\$72.00	\$62,136.00	\$80.00	\$69,040.00	\$48.05	\$41,467.15	\$57.00	\$49,191.00	\$90.00	\$77,670.00	\$72.00	\$62,136.00	\$130.00	\$112,190.00
609C	CURB AND GUTTER TYPE 2 (SECTION I-B)	LF	80	\$37.69	\$3,014.93	\$31.70	\$2,536.00	\$34.55	\$2,764.00	\$19.00	\$1,520.00	\$34.75	\$2,780.00	\$50.00	\$4,000.00	\$41.88	\$3,350.40	\$28.00	\$2,240.00	\$46.00	\$3,680.00	\$25.00	\$2,000.00	\$60.00	\$4,800.00
609D	CURB AND GUTTER TYPE 2 (SECTION II-B)	LF	974	\$39.73	\$38,701.35	\$32.25	\$31,411.50	\$50.48	\$49,167.52	\$22.50	\$21,915.00	\$35.75	\$34,820.50	\$50.00	\$48,700.00	\$41.88	\$40,791.12	\$30.00	\$29,220.00	\$46.00	\$44,804.00	\$28.00	\$27,272.00	\$53.00	\$51,622.00
609E	CURB AND GUTTER TYPE 2 (SECTION III-M)	LF	1,274	\$41.68	\$53,101.74	\$35.90	\$45,736.60	\$55.25	\$70,388.50	\$25.00	\$31,850.00	\$38.00	\$48,412.00	\$42.00	\$53,508.00	\$41.88	\$53,355.12	\$34.00	\$43,316.00	\$48.00	\$61,152.00	\$30.00	\$38,220.00	\$61.00	\$77,714.00
620	SANITARY FACILITY	LS	1	\$1,722.78	\$1,722.78	\$1,500.00	\$1,500.00	\$3,375.00	\$3,375.00	\$1,000.00	\$1,000.00	\$2,650.00	\$2,650.00	\$1,500.00	\$1,500.00	\$750.00	\$750.00	\$2,500.00	\$2,500.00	\$1,500.00	\$1,500.00	\$2,000.00	\$2,000.00	\$230.00	\$230.00
626	MOBILIZATION		1	\$43,128.02	\$43,128.02	\$55,000.00	\$55,000.00	\$63,565.25	\$63,565.25	\$55,000.00	\$55,000.00	\$47,661.90	\$47,661.90	\$15,000.00	\$15,000.00	\$1,925.00	\$1,925.00	\$20,000.00	\$20,000.00	\$35,000.00	\$35,000.00	\$50,000.00	\$50,000.00	\$100,000.00	\$100,000.00
629	SURVEY MONUMENTATION	EA	7	\$905.56	\$6,338.89	\$700.00	\$4,900.00	\$2,250.00	\$15,750.00	\$550.00	\$3,850.00	\$900.00	\$6,300.00	\$700.00	\$4,900.00	\$1,500.00	\$10,500.00	\$750.00	\$5,250.00	\$550.00	\$3,850.00	\$600.00	\$4,200.00	\$350.00	\$2,450.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$61,583.33	\$61,583.33	\$55,000.00	\$55,000.00	\$198,750.00	\$198,750.00	\$20,000.00	\$20,000.00	\$58,500.00	\$58,500.00	\$30,000.00	\$30,000.00	\$28,000.00	\$28,000.00	\$10,000.00	\$10,000.00	\$35,000.00	\$35,000.00	\$49,000.00	\$49,000.00	\$125,000.00	\$125,000.00
630B	VARIABLE MESSAGE SIGN (VMS) (2EA Per Day)	DAY	45	\$3,104.17	\$15,937.50	\$250.00	\$11,250.00	\$25,312.50	\$25,312.50	\$150.00	\$6,750.00	\$190.00	\$8,550.00	\$240.00	\$10,800.00	\$420.00	\$18,900.00	\$1,000.00	\$45,000.00	\$250.00	\$11,250.00	\$160.00	\$7,200.00	\$215.00	\$9,675.00
720	MATERIALS SAMPLING & TESTING	LS	1	\$32,722.22	\$32,722.22	\$25,000.00	\$25,000.00	\$132,500.00	\$132,500.00	\$15,000.00	\$15,000.00	\$18,000.00	\$18,000.00	\$15,000.00	\$15,000.00	\$16,000.00	\$16,000.00	\$25,000.00	\$25,000.00	\$18,000.00	\$18,000.00	\$13,000.00	\$13,000.00	\$42,000.00	\$42,000.00
F/A	MINOR CONTRACT REVISIONS	LS	1	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00
TOTAL PROJECT BASE BID:							\$795,200.10		\$1,502,339.71		\$701,310.00		\$816,188.00		\$721,865.75		\$1,015,760.73		\$693,835.00		\$772,172.00		\$733,665.00		\$1,253,493.40
									INCOMPLETE BID PACKET		\$701,730.00						\$1,018,760.70								
											MATH ERROR						MATH ERROR								



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: File #: PWC 2023-016

To: Members of the Public Works Commission

From: Frank Castillo, Project Manager

Resolution Approving a Construction Contract for the 2023 Town Facility Parking Lot Improvements Project

Executive Summary

The purpose of this memorandum is to request Commission's endorsement to Town Council for entering into a construction contract with Metro Pavers Inc., to perform parking lot maintenance activities.

Maintaining the Town's Facility parking lots is important for public safety, and a means to preserve and extend the useable life of the pavement. The 2023 Town Facility Parking Lot Improvement Project will address the parking lots at Founder's Village Fire Station #153, Prairie Hawk Fire Station #154, Bison Park, Butterfield Park, Gemstone Park, Wrangler Park, Ray Waterman Treatment Plant, Weaver II Well Field, and Founder's Treatment Plant, as shown on the attached maps (**Attachment A**).

Discussion

The Town's goal for these improvements is to preserve and extend the life of the Town's facilities parking lots by making annual improvements to selected parking lots. These goals are met when proper parking lot maintenance is provided.

Staff has established a five-year plan that will address maintenance for Town facility parking lots by evaluating the parking lot condition with onsite inspections. Different types of maintenance treatments, such as asphalt mill and overlay, asphalt patching, seal coat, and concrete pavement panel replacement are identified based on the condition of the pavement.

The invitation to bid for construction of this project was advertised in December 2022. Bids were opened for the project on January 19, 2023. A summary of the bid results is attached (**Attachment B**). The bid was checked for accuracy, references were contacted, and contract compliance was met. Staff believes that the low bidder is qualified to perform the work associated with the respective maintenance contract. It is anticipated that construction for the 2023 Town Facility Parking Lot Improvement Project will begin in late August with completion by late September 2023. The reason for the late summer start is that school will be back in session, so this translates to reduced use of

the parking lots during the work week.

2023 FACILITIES RECOMMENDED AWARD

PROJECT	BID AMOUNT PLUS CONTINGENCY	CONTRACTOR
2023 Town Facilities Parking Lot Improvements	\$664,600 + \$66,460 (10%) Contingency	Metro Pavers, Inc. Denver, CO
TOTAL:	\$731,060	136-1820-418-40-31 210-4275-442-78-01

Budget Impact

The budget from account 136-1820-418-40-31 for the Founder's Fire Station #153, Prairie Hawk Fire Station #154, Wrangler Park, Bison Park, Gemstone Park, and Butterflied Park (Concrete off Meadows Blvd) is \$589,600. Castle Rock Water's budget from the Facilities Paving Program, account 210-4275-442-78-01 for Ray Waterman Treatment Plant, Founder's Treatment Plant and Weaver II Well Field has a budget of \$75,000. The low bid for all identified work is \$664,600, plus a 10% contingency of \$66,460 for unforeseen conditions for a total recommended encumbrance to complete the contract of \$731,060.

Recommendation

Staff recommends that the Public Works Commission recommend to Town Council approve the construction contract with Metro Pavers Inc. for the amount identified for the 2023 Town Facilities Parking Lot Improvements.

Proposed Motion

"I move to recommend Town Council approve a Resolution approving the Construction Contract between the Town of Castle Rock and Metro Pavers, Inc. for the 2023 Town Facilities Parking Lot Improvements"

Alternate Motion

"I move to recommend Town Council approve a Resolution approving the Construction Contract between the Town of Castle Rock and Metro Pavers, Inc. for the 2023 Town Facilities Parking Lot Improvements, with the following changes...."

Attachments

Contract

Attachment A: Project Site Maps

Attachment B: Project Bid Summary

**TOWN OF CASTLE ROCK
CONSTRUCTION CONTRACT
(2023 Town Facilities Parking Lot Improvements)**

THIS CONSTRUCTION CONTRACT ("Contract") is made between the **TOWN OF CASTLE ROCK**, a Colorado municipal corporation ("Town"), 100 N. Wilcox Street, Castle Rock, Colorado 80104 and **METRO PAVERS, INC.**, 7874 I-76 Service Road, Henderson, Colorado 80640 ("Contractor").

In consideration of these mutual covenants and conditions, the Town and Contractor agree as follows:

SCOPE OF WORK The Contractor shall execute the entire Work described in the Contract.

CONTRACT The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, written or oral representations and agreements. The Contract incorporates the following Contract Documents. In resolving inconsistencies among two or more of the Contract Documents, precedence will be given in the same order as enumerated.

LIST OF CONTRACT DOCUMENTS

The Contract Documents, except for Modifications issued after execution of this Contract, are:

1. Change Orders
2. Notice to Proceed
3. Construction Contract
4. General Conditions
5. Where applicable, Davis-Bacon Act Wage Determinations
6. The following Addenda, if any:

2023 Facilities – 1 Addendum

7. Special Conditions of the Contract:
 - a. ProjSec105 No open excavation
 - b. ProjSec107 Public Notification
 - c. ProjSec202 Temporary Pavement Marking
 - d. ProjSec409 Emulsified Seal Coat GSB88
8. Notice of Award;
9. Invitation to Bid;
10. Information and Instructions to Bidders;
11. Notice of Substantial Completion;
12. Notice of Construction Completion;
13. Proposal Forms, including Bid Schedules;
14. Performance, and Labor and Material Payment Bonds;

15. Performance Guarantee; and
16. Insurance Certificates.

CONTRACT PRICE. The Town shall pay the Contractor for performing the Work and the completion of the Project according to the Contract, subject to Change Orders as approved in writing by the Town, under the guidelines in the General Conditions. The Town will pay **\$664,600.00** ("Contract Price"), to the Contractor, subject to full and satisfactory performance of the terms and conditions of the Contract. The Contract Price is provisional based on the quantities contained in the Bid attached as ***Exhibit 1***. The final Contract Price shall be adjusted to reflect actual quantities incorporated into the Work at the specified unit prices. The Town has appropriated money equal or in excess of the Contract Price for this work.

TERM. The term shall commence upon execution of the Contract and terminate on December 31, 2023, unless an extension of the Contract is agreed to in writing by the Town and the Contractor.

COMPLETION OF WORK. The Contractor must begin work covered by the Contract within **3** working days from the date of the Notice to Proceed, and must complete work within **45** working days from and including the date of Notice to Proceed, according to the General Conditions, or by November 3, 2023, whichever date is earlier.

LIQUIDATED DAMAGES. If the Contractor fails to complete the Work by the date set for completion in the Contract, or if the completion date is extended by a Change Order, by the date set in the Change Order, the Town may permit the Contractor to proceed, and in such case, may deduct the sum of **\$1,000** for each day that the Work shall remain uncompleted from monies due or that may become due the Contractor. This sum is not a penalty but is a reasonable estimate of liquidated damages.

The parties agree that, under all of the circumstances, the daily basis and the amount set for liquidated damages is a reasonable and equitable estimate of all the Town's actual damages for delay. The Town expends additional personnel effort in administering the Contract or portions of the Work that are not completed on time, and has the cost of field and office engineering, inspecting, and interest on financing and such efforts and the costs thereof are impossible to accurately compute. In addition, some, if not all, citizens of Castle Rock incur personal inconvenience and lose confidence in their government as a result of public projects or parts of them not being completed on time, and the impact and damages, certainly serious in monetary as well as other terms are impossible to measure.

SERVICE OF NOTICES. Notices to the Town are given if sent by registered or certified mail, postage prepaid, to the following address:

TOWN OF CASTLE ROCK
Town Attorney
100 N. Wilcox Street
Castle Rock, CO 80104

With a copy to: Legal@crgov.com

INSURANCE PROVISIONS. The Contractor must not begin any work until the Contractor obtains, at the Contractor's own expense, all required insurance as specified in the General Conditions. Such insurance must have the approval of the Town of Castle Rock as to limits, form and amount. *Certificate of Insurance ("COI") must be submitted along with the executed contract as **Exhibit 2**.*

RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify, save harmless, and defend the Town, its officers and employees, from and in all suits, actions or claims of any character brought because of: any injuries or damage received or sustained by any person, persons or property because of operations for the Town under the Contract; including but not limited to claims or amounts recovered from any infringements of patent, trademark, or copyright; or pollution or environmental liability. The Town may retain so much of the money due the Contractor under the Contract, as the Town considers necessary for such purpose. If no money is due, the Contractor's Surety may be held until such suits, actions, claims for injuries or damages have been settled. Money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that the Contractor and the Town are adequately protected by public liability and property damage insurance.

The Contractor also agrees to pay the Town all expenses, including attorney's fees, incurred to enforce this Responsibility for Damage Claim clause.

Nothing in the **INSURANCE PROVISIONS of the General Conditions** shall limit the Contractor's responsibility for payment of claims, liabilities, damages, fines, penalties, and costs resulting from its performance or nonperformance under the Contract.

STATUS OF CONTRACTOR. Contractor has completed the Affidavit of Independent Contractor Status, attached as ***Exhibit 3***, and submitted same at the time of execution of this Agreement. The Contractor is performing all work under the Contract as an independent Contractor and not as an agent or employee of the Town. No employee or official of the Town will supervise the Contractor. The Contractor will not supervise any employee or official of the Town. The Contractor shall not represent that it is an employee or agent of the Town in any capacity. **The Contractor and its employees are not entitled to Town Workers' Compensation benefits and are solely responsible for federal and state income tax on money earned.** This is not an exclusive contract.

THIRD PARTY BENEFICIARIES. None of the terms or conditions in the Contract shall give or allow any claim, benefit, or right of action by any third person not a party to the Contract. Any person, except the Town or the Contractor, receiving services or benefits under the Contract is an incidental beneficiary only.

INTEGRATION. This contract integrates the entire understanding of the parties with respect to the matters set forth. No representations, agreements, covenants, warranties, or certifications, express or implied, shall exist as between the parties, except as specifically set forth in this Contract.



DEFINITIONS. The Definitions in the General Conditions apply to the entire Contract unless modified within a Contract Document.

Executed this _____ day of _____, 20__.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jason Gray, Mayor

APPROVED AS TO FORM:

Michael J. Hyman, Town Attorney

CONTRACTOR:

METRO PAVERS, INC.

By: _____

Title: _____

EXHIBIT 1

CONTRACTOR'S BID

Description of the Work

General Description - The work to be performed under this contract includes removal & replacement of asphalt mat, heating & scarifying, milling of asphalt pavement, asphalt pavement overlay, Full Depth Reclamation and the application of Seal Coat (GSB 88), crack seal, mastic. The removal & replacement of sidewalk, curb & gutter, and concrete pavement and silicone sealant. The Contractor shall supply all labor, equipment, and materials necessary to complete the work in accordance with these specifications. The contractor shall adhere to the Town's Temporary Erosion and Sediment Control (TESC) manual for all stages of the project. The contract shall be awarded based on bids received and the contract documents. A schedule of sequencing of all work shall be submitted at or before the project pre-construction meeting, and approved by the Town prior to issuance of Notice to Proceed.

"Founder's Fire Station #153" Concrete work and asphalt full depth reconstruction shall be completed in a manner to maximize access and parking and shall take place during normal weekdays from 7a.m. - 5p.m. Asphalt paving and concrete pavement removal & replacement shall be completed in two (2) phases, asphalt paving and concrete work shall not take place simultaneously. All work must be coordinated with Fire Department staff.

"Prairie Hawk Fire Station #154" Concrete work and asphalt milling shall be completed in a manner to maximize access and parking and shall take place during normal weekdays from 7a.m. - 5p.m. Asphalt paving and concrete pavement removal & replacement shall be completed in two (2) phases, asphalt paving and concrete work shall not take place simultaneously. All work must be coordinated with Fire Department staff.

"Ray Waterman Treatment Plant" work shall take place during normal weekdays from 7a.m. – 5p.m. Concrete repairs, mastic, crack seal, and asphalt patching work and seal coat, shall be completed in two (2) phases, one (1) phase per day or as approved by the Project Manager to maximize access and parking to Treatment Plant Staff. All work shall be coordinated with Castle Rock Water Department staff.

"Founder's Treatment Plant" " work shall take place during normal weekdays from 7a.m. - 5p.m. Concrete work, mastic, crack seal, and asphalt patching shall be completed in a manner to maximize access and parking. Seal coat shall be completed in one (1) phase per day or as approved by the Project Manager. All work shall be coordinated with Castle Rock Water Department staff.

"Weaver II Well Field" work shall take place during normal weekdays from 7a.m. - 5p.m. Concrete work, mastic, crack seal, and asphalt patching shall be completed in a manner to maximize access and parking. Seal coat shall be completed in two (2) phases, one (1) phase per day or as approved by the Project Manager. All work shall be coordinated with Castle Rock Water Department staff.

"Wrangler Parking Lot" Concrete work and asphalt patching shall be completed in a manner to maximize access and parking work and shall take place during normal weekdays from 7a.m. – 5p.m. Seal coat shall be completed in two (2) phases, one (1) phase per day or as approved by the Project Manager. All work shall be coordinated with Parks and Recreation Department staff.

“Bison Park Parking Lot” work shall take place during normal weekdays from 7a.m. – 5p.m. The work to be performed under this contract includes removal and replacement of existing concrete including concrete pavement, crossspan, sidewalk, curb and gutter, curb ramps, asphalt patching, various depths and types of milling of existing asphalt pavement, and various thicknesses of asphalt paving within the parking lot listed in the Appendices or as directed by the Project Manager. All work shall be coordinated with Parks and Recreation Department staff.

“Gemstone Park Parking Lot” work shall take place during normal weekdays from 7a.m. – 5p.m. Concrete work and asphalt shall be completed in a manner to maximize access and parking. Perform full depth reclamation, and various thicknesses of asphalt paving within the parking lot listed. All work shall be coordinated with Parks and Recreation Department staff.

“Butterfield Park (Concrete off Meadows Blvd)” work shall take place during normal weekdays from 7a.m. – 5p.m. Concrete curb, gutter, and pavement work shall be completed in a manner to maximize access and parking. All work shall be coordinated with Parks and Recreation Department staff.

The contractor shall commence work no later than three (3) calendar days from, and including, the date of the Notice to Proceed, and be construction complete (punchlist items, cleanup, and demobilize) within thirty-five (45) working days from the date on the Notice to Proceed. All work shall take place during the timeframe of September 5, 2023 – November 3, 2023.

2023 Facilities Parking Lot Improvement Project

BID SCHEDULE A - Founders Fire Station					5463 E.
Sovereign Street					
ITEM NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB AND GUTTER TYPE 2	LF	152	\$8.05	\$1,223.60
202B	REMOVAL OF CONCRETE PAVEMENT	SY	500	\$33.35	\$16,675.00
202C	REMOVAL OF CURB RAMP	SY	10	\$35.95	\$359.50
202D	REMOVAL OF SIDEWALK	SY	33	\$35.95	\$1,188.35
203A	UNCLASSIFIED EXCAVATION (CPI)(CONTINGENCY)	CY	50	\$41.42	\$2,071.00
208	VEHICLE TRACKING PAD	EA	1	\$2,075.00	\$2,075.00
304	AGGREGATE BASE COURSE (CLASS 6) (8") (CONTINGENCY)	CY	50	\$99.92	\$4,996.00
310	FULL DEPTH RECLAMATION (13")	SY	800	\$11.54	\$9,232.00
403A	HBP (2.0") (GR SX) (PG 58-28)	SY	800	\$17.82	\$14,256.00
403B	HBP (3.0") (GR SG) (PG 58-28)(75)	SY	800	\$26.73	\$21,384.00
410	CONCRETE SIDEWALK (8")	SY	33	\$77.60	\$2,560.80
411	MOUNTABLE CURB MID-BLOCK RAMP (ADA)(CRH)(CAST IRON)	SY	10	\$425.00	\$4,250.00
412	CONCRETE PACEMENT (8") (HIGH EARLY)	SY	500	\$132.00	\$66,000.00
608A	CURB AND GUTTER TYPE 2 (SECTION 6-8)	LF	152	\$40.25	\$6,118.00
620	SANITARY FACILITY	EA	1	\$150.00	\$150.00
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$1,500.00	\$1,500.00
720	MATERIAL SAMPLING AND TESTING	LS	1	\$2,240.00	\$2,240.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$158,127.25

BID SCHEDULE B - Prairie Hawk Fire Station					3801
Prairie Hawk Drive					
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB AND GUTTER TYPE 2	LF	55	\$8.05	\$442.75
202B	ASPHALT PLANING (2")	SY	550	\$5.10	\$2,805.00
202C	REMOVAL OF CONCRETE PAVEMENT	SY	907	\$33.35	\$30,248.45
202D	REMOVAL OF ASPHALT MAT	SY	62	\$16.33	\$1,012.46
403A	HBP (2") (GR SX) (PG 58-28)	SY	62	\$59.47	\$3,687.14
403B	HBP (PATCHING) (GR S) (8") (PG 58-28)	SY	550	\$24.50	\$13,475.00
412A	CONCRETE PAVEMENT (8") (HIGH EARLY)	SY	907	\$132.00	\$119,724.00
608A	CURB AND GUTTER TYPE 2 (SECTION 1-8)	LF	55	\$40.25	\$2,213.75
620A	SANITARY FACILITY	EA	1	\$150.00	\$150.00
626A	MOBILIZATION	LS	1	\$850.00	\$850.00
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$1,500.00	\$1,500.00
720A	MATERIALS SAMPLING AND TESTING	LS	1	\$1,200.00	\$1,200.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$178,388.55

BID SCHEDULE C - Ray Waterman					1282 Castle Oaks Drive
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB AND GUTTER TYPE 2	LF	120	\$8.05	\$966.00
202B	REMOVAL OF ASPHALT MAT	SY	218	\$16.33	\$3,559.94
304	AGGREGATE BASE COURSE (CLASS 6) (8") (CONTINGENCY)	SY	20	\$75.27	\$1,505.40
403B	HBP (PATCHING) (GR S) (8") (PG 58-28)	SY	218	\$59.47	\$12,964.46
409	SEAL COAT (GSB 88)	SY	3113	\$3.20	\$9,961.60
609	CURB AND GUTTER TYPE 2 (SECTION 1-8)	LF	120	\$40.25	\$4,830.00
620	SANITARY FACILITY	LS	1	\$150.00	\$150.00
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$750.00	\$750.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$400.00	\$400.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$36,937.40

BID SCHEDULE D - Founders Treatment Plant					980
Lantern Trail					
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
409	SEAL COAT (GSB 88)	SY	1,100	\$3.20	\$3,520.00
408A	MASTIC	LB	100	\$6.90	\$690.00
408B	CRACK SEAL	LB	100	\$6.25	\$625.00
620	SANITARY FACILITY	EA	1	\$150.00	\$150.00
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$500.00	\$500.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$40.00	\$40.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$7,375.00

BID SCHEDULE E - Weaver II Well Field					5740
Wagonwheel Trail					
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF ASPHALT MAT	SY	20	\$16.35	\$327.00
202B	REMOVAL OF SIDEWALK	SY	3	\$34.50	\$103.50
202C	REMOVAL OF CONCRETE PAVEMENT	SY	20	\$33.35	\$667.00
403	HMA/WMA (PATCHING) (GR S) (8") (PG 58-28)	SY	20	\$59.47	\$1,189.40
408A	MASTIC	LB	100	\$6.90	\$690.00
408B	CRACK SEAL	LB	100	\$6.25	\$625.00
409	SEAL COAT (GSB 88)	SY	360	\$3.20	\$1,152.00
410	CONCRETE SIDEWALK (8")	SY	3	\$77.60	\$232.80
412B	CONCRETE PAVEMENT (8") (HIGH EARLY)	SY	20	\$132.00	\$2,640.00
620	SANITARY FACILITY	EA	1	\$150.00	\$150.00
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$500.00	\$500.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$1,200.00	\$1,200.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$11,326.70

BID SCHEDULE F - Wrangler Parking Lot					2418
Autumn Sage Street					
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF ASPHALT MAT	SY	13	\$16.35	\$212.55
202B	REMOVAL OF CURB AND GUTTER TYPE 2	LF	44	\$8.05	\$354.20
403	HMA/WMA (PATCHING) (GRS) (8") (PG 58-28)	SY	13	\$59.45	\$772.85
408A	MASTIC	LB	100	\$6.90	\$690.00
408B	CRACK SEAL	LB	100	\$6.25	\$625.00
409	SEAL COAT (GSB 88)	SY	1,050	\$3.20	\$3,360.00
608A	CURB AND GUTTER TYPE 2 (SECTION 1-8)	LF	44	\$40.25	\$1,771.00
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$500.00	\$500.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$500.00	\$500.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$10,635.60

BID SCHEDULE G - Bison Park Parking Lot					1390
Clear Sky Way					
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF ASPHALT MAT	SY	200	\$16.35	\$3,270.00
202B	REMOVAL OF CURB AND GUTTER TYPE 2	LF	8	\$8.05	\$64.40
202C	ASPHALT PLANING (2.0")	SY	1700	\$5.10	\$8,670.00
403A	HMA/WMA (PATCHING) (GRS) (8") (PG 58-28)	SY	200	\$24.50	\$4,900.00
403B	HBP (2.0")(GR SX)(PG 58-28)	SY	1700	\$12.14	\$20,638.00
408A	MASTIC	LB	250	\$6.90	\$1,725.00
408B	CRACK SEAL	LB	250	\$5.25	\$1,312.50
608A	CURB AND GUTTER TYPE 2 (SECTION 1-8)	LF	8	\$40.25	\$322.00
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$500.00	\$500.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$400.00	\$400.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$43,651.90

BID SCHEDULE H - Gemstone Park Parking Lot					6145
Sapphire Point Blvd.					
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB AND GUTTER TYPE 2	SY	194	\$8.05	\$1,561.70
202B	REMOVAL OF CONCRETE PAVEMENT	SY	7	\$33.35	\$233.45
203A	UNCLASSIFIED EXCAVATION (CPI)(CONTINGENCY)	CY	50	\$41.42	\$2,071.00
208	VEHICLE TRACK PAD	EA	1	\$2,075.00	\$2,075.00
304	AGGREGATE BASE COURSE (CLASS 6) (8") (CONTINGENCY)	SY	100	\$57.81	\$5,781.00
310	FULL DEPTH RECLAMATION (13")	SY	2,860	\$6.74	\$25,783.00
403A	HBP (2.0")(GR SX)(PG 58-28)	SY	2,860	\$14.98	\$44,191.00
403B	HBP (3.0")(GR SG)(PG 58-28)(75)	SY	2,860	\$22.47	\$66,286.50
412A	CONCRETE PAVEMENT (8") (HIGH EARLY)(CROSSSPAN)	SY	7	\$132.00	\$924.00
609	CURB AND GUTTER TYPE 2 (SECTION 1-8)	LF	194	\$40.25	\$7,808.50
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$750.00	\$750.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$3,200.00	\$3,200.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$162,515.15

BID SCHEDULE I - Butterfield Park					(Concrete off Meadows Blvd)
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
202	REMOVAL OF CONCRETE PAVEMENT	SY	246	\$33.35	\$8,204.10
202A	REMOVAL OF SIDEWALK	SY	11	\$36.00	\$396.00
202B	REMOVAL OF CURB AND GUTTER TYPE 2	LF	175	\$8.05	\$1,408.75
410	CONCRETE SIDEWALK (8")	SY	11	\$77.60	\$853.60
412A	CONCRETE PAVEMENT (8") (HIGH EARLY)	SY	246	\$132.00	\$32,472.00
609	CURB AND GUTTER TYPE 2 (SECTION 1-8)	LF	175	\$40.25	\$7,043.75
626	MOBILIZATION	LS	1	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$1,750.00	\$1,750.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$1,750.00	\$1,750.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00
TOTAL					\$55,728.20

TOTAL COST FOR BID SCHEDULE A:	\$158,127.25
TOTAL COST FOR BID SCHEDULE B:	\$178,388.55
TOTAL COST FOR BID SCHEDULE C:	\$36,937.40
TOTAL COST FOR BID SCHEDULE D:	\$7,375.00
TOTAL COST FOR BID SCHEDULE E:	\$11,326.70
TOTAL COST FOR BID SCHEDULE F:	\$10,635.60
TOTAL COST FOR BID SCHEDULE G:	\$43,651.90
TOTAL COST FOR BID SCHEDULE H:	\$162,515.15
TOTAL COST FOR BID SCHEDULE I:	\$55,728.20

GRAND TOTAL PROJECT COST	\$664,695.75
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EXHIBIT 2

CONTRACTOR'S CERTIFICATE OF INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/3/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER The Buckner Company of Colorado 6400 S. Fiddlers Green Circle, Suite 950 Greenwood Village CO 80111	CONTACT NAME: Certificate Processing Department PHONE (A/C, No, Ext): 303-756-9909 E-MAIL ADDRESS: denver@buckner.com FAX (A/C, No): 303-756-8818
INSURED Metro Pavers, Inc. SI Leasing LLC PO Box 601 Henderson CO 80640	INSURER(S) AFFORDING COVERAGE INSURER A: Pinnacol Assurance INSURER B: The Travelers Companies, Inc. INSURER C: Sentry Select Insurance Company INSURER D: INSURER E: INSURER F:

COVERAGES**CERTIFICATE NUMBER:** 794817942**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
C	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	Y	Y	A0195179004	5/15/2022	5/15/2023	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$500,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$3,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 \$
C	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	A0195179001	5/15/2022	5/15/2023	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000	Y	Y	A019579005	5/15/2022	5/15/2023	EACH OCCURRENCE \$1,000,000 AGGREGATE \$1,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	Y	4177329	10/1/2022	10/1/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
C B	Leased/Rented Equipment Excess Liability	Y	Y	A0195179003 EX6S82625522NF	5/15/2022 10/1/2022	5/15/2023 10/1/2023	Limit Ea Occurrence Aggregate \$300,000 \$5,000,000 \$5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate Holder is Additional Insured on Auto Liability per Supplement Declarations attached, and General Liability including Ongoing Operations per form CG2010 0413, and Completed Operations per form CG2037 0413. Primary and Non-contributory applies to the General Liability per form CG2001 0413; Automobile Liability per form CA7601 0614 and Sentry Umbrella per form EU7091 0515. Waiver of Subrogation applies to General Liability per form CG2404 0509; Auto per CA0444 1013, Work Comp per form WC000313B & Sentry Umbrella per form EU7101 1219. Sentry Umbrella Liability and Travelers Excess Liability policies are Follow Form.
Pollution Liability 9/1/2022-23 ECPENV03397 - Westchester Insurance Company - \$1,000,000 each Pollution Condition/\$1,000,000 Aggregate - Deductible - \$10,000

CERTIFICATE HOLDER**CANCELLATION**

Town of Castle Rock
100 N. Wilcox Street
Castle Rock CO 80104

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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EXHIBIT 3

TOWN OF CASTLE ROCK AFFIDAVIT OF INDEPENDENT CONTRACTOR STATUS

I, _____, an authorized representative of **Metro Pavers, Inc.**, holding legal authority to sign this Affidavit declare under oath that I am 18 years or older and have the capacity to sign this Affidavit.

In accordance with Section 8-70-115, C.R.S., I certify the following:

- With respect to the Agreement, **Metro Pavers, Inc.** represents and warrants that it is its express intention to be employed as an independent contractor of the Town of Castle Rock (the “Town”) for purposes of performing the work or services which are the subject of the Agreement. **Metro Pavers, Inc.** understands and confirms that the Town reasonably relied on this intention in entering into the Agreement.
- The Town does not require **Metro Pavers, Inc.** work exclusively for the Town, except that **Metro Pavers, Inc.** may choose to work exclusively for the Town for a finite period of time _____ specified _____ in _____ the _____ document.
- The Town does not establish a quality standard for the work or services performed pursuant to the Agreement, except that the Town may provide plans and specifications regarding the work but cannot oversee the actual work or provide instruction as to how the work is performed.
- The Town does not pay a salary or hourly rate but rather a fixed or contract rate, as noted in the terms and conditions of the Agreement, and any Exhibits made part of the Agreement.
- The Town cannot terminate the work or services performed during the contract period unless otherwise agreed to in the terms and conditions of the Agreement.
- **Metro Pavers, Inc.** is not provided with anything, if at all, more than minimal training from _____ the _____ Town.
- The Town does not provide **Metro Pavers, Inc.** with tools or benefits for the performance of the work or services which are the subject of the Agreement, except materials and equipment _____ may _____ be _____ supplied.

- The Town does not dictate the time of performance, except that a completion schedule and a range of mutually agreeable work hours may be established in the Agreement.
- The Town issues checks payable to **Metro Pavers, Inc.** a party to the Agreement; and the Town does not combine their business operations in any way with the **Metro Pavers, Inc.'s** business, but instead maintains such operations as separate and distinct.
- **Metro Pavers, Inc.** understands that if a professional license to practice a particular occupation under the laws of the State of Colorado requires the exercise of a supervisory function with regard to the work of services performed under this Agreement, such supervisory role shall not affect the independent contractor relationship with the Town.
- **METRO PAVERS, INC. UNDERSTANDS THAT NEITHER METRO PAVERS, INC. NOR ITS EMPLOYEES ARE ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS OF THE TOWN.**
- **METRO PAVERS, INC. UNDERSTANDS THAT IT IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THE AGREEMENT.**

CONTRACTOR:

METRO PAVERS, INC.

By: _____
Name

STATE OF COLORADO)
) ss.

COUNTY OF _____)

The foregoing instrument as acknowledged before me this ____ day of _____, 20__ by _____ as _____ of the above mentioned Contractor/Consultant/Vendor.

Witness my official hand and seal.

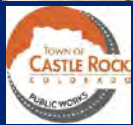
My commission expires:

Notary Public

**2in Mill and Overlay, and Curb & Gutter Repair
1,700 Sq Yd**

Clear Sky Way

Marblehead Pl



Castle Rock
Public Works
4175 N Castleton
Castle Rock, CO
80109


Project:
Bison Park

Date: 12/8/2022

Drawn By: JF

Address:
1390 Clear Sky Way
Castle Rock, CO

Legend:

 2023 Parking Lot Treatments

Scale:

1 inch = 38 feet

0 10 20 30 40
ft.

Concrete Pavement Repair, Curb & Gutter Repair
246 Sq Yd



Castle Rock
Public Works
4175 N Castleton
Castle Rock, CO
80109


Project:
Butterfield Park

Date: 12/8/2022

Drawn By: JF

Address:
NW Corner Meadows Blvd & Springmeadow Ln
Castle Rock, CO

Legend:

 2023 Parking Lot Treatments

Scale:

1 inch = 59 feet

0 10 20 30 40
 ft.

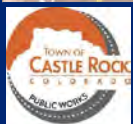


**Seal Coat and Crack/Mastic Seal Repair
1,100 Sq Yd**

Hampstead
Ave

Lantern Trl

E Hamilton Ave



Castle Rock
Public Works
4175 N Castleton
Castle Rock, CO
80109


Project:
Founder's Treatment Plant

Date: 12/8/2022

Drawn By: JF

Address:
980 Lantern Trail
Castle Rock, CO

Legend:

 2023 Parking Lot Treatments

Scale:

1 inch = 47 feet

0 10 20 30 40
ft.



Concrete Pavement Replace- 500 Sq Yd, FDR- 800 Sq Yd, Curb & Gutter Repair



Castle Rock
Public Works
4175 N Castleton
Castle Rock, CO
80109


Project:
Founder's Village Fire Station

Date: 12/8/2022

Drawn By: JF


Address:
5463 E Sovereign Street
Castle Rock, CO

Legend:

 2023 Parking Lot Treatments

Scale:

1 inch = 60 feet

0 10 20 30 40
 ft.



Full Depth Reclamation, and Curb & Gutter Repair
2,950 Sq Yd



Concrete Pavement Replace- 907 Sq Yd, 2in Mill and Overlay- 555 Sq Yd, Curb & Gutter Repair

New Hope Way

Prairie Hawk Dr



Castle Rock
Public Works
4175 N Castleton
Castle Rock, CO
80109

Project:
Prairie Hawk Fire Station

Date: 12/8/2022

Drawn By: JF


Address:
3801 Prairie Hawk Drive
Castle Rock, CO

Legend:

 2023 Parking Lot Treatments

Scale:

1 inch = 62 feet

0 10 20 30 40
 ft.



**Seal Coat and Curb & Gutter Repair
3,113 Sq Yd**



Concrete Pavement, Crack & Mastic Seal, and Seal Coat Repair
360 Sq Yd



Castle Rock
Public Works
4175 N Castleton
Castle Rock, CO
80109


Project:
Weaver II Well Field

Date: 12/8/2022

Drawn By: JF

Address:
5740 Wagonwheel Trail
Castle Rock, CO

Legend:

 2023 Parking Lot Treatments

Scale:

1 inch = 34 feet

0 10 20 30 40
ft.



Seal Coat and Curb & Gutter Repair
1,050 Sq Yd



2023 Facilities Parking Lot Improvement Project Bid Comparison

BID SCHEDULE A - Founders Fire Station E. Sovereign Street				5463	CONTRACTOR BID AVG		CONTRACTOR AVG. TOTAL COST		PUBLIC WORKS ESTIMATE		Metro Pavers Inc.		
	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
202A	REMOVAL OF CURB AND GUTTER TYPE 2	LF	152	\$8.05	\$1,223.60	\$8.05	\$1,223.60	\$23.50	\$3,572.00	\$8.05	\$1,223.60		
202B	REMOVAL OF CONCRETE PAVEMENT	SY	500	\$33.35	\$16,675.00	\$33.35	\$16,675.00	\$33.80	\$16,900.00	\$33.35	\$16,675.00		
202C	REMOVAL OF CURB RAMP	SY	10	\$35.95	\$359.50	\$35.95	\$359.50	\$45.00	\$450.00	\$35.95	\$359.50		
202D	REMOVAL OF SIDEWALK	SY	33	\$35.95	\$1,186.35	\$35.95	\$1,186.35	\$25.50	\$841.50	\$35.95	\$1,186.35		
203A	UNCLASSIFIED EXCAVATION (CPI)(CONTINGENCY)	CY	50	\$41.42	\$2,071.00	\$41.42	\$2,071.00	\$27.50	\$1,375.00	\$41.42	\$2,071.00		
208	VEHICLE TRACKING PAD	EA	1	\$2,075.00	\$2,075.00	\$2,075.00	\$2,075.00	\$700.00	\$700.00	\$2,075.00	\$2,075.00		
304	AGGREGATE BASE COURSE (CLASS 6) (F') (CONTINGENCY)	CY	50	\$99.92	\$4,996.00	\$99.92	\$4,996.00	\$80.00	\$4,000.00	\$99.92	\$4,996.00		
310	FULL DEPTH RECLAMATION (13')	SY	800	\$11.54	\$9,232.00	\$11.54	\$9,232.00	\$6.15	\$4,920.00	\$11.54	\$9,232.00		
403A	HBP (2.0') (GR SG) (PG 58-28)	SY	800	\$17.82	\$14,256.00	\$17.82	\$14,256.00	\$15.00	\$12,000.00	\$17.82	\$14,256.00		
408B	HBP (2.0') (GR SG) (PG 58-28/75)	SY	800	\$26.73	\$21,384.00	\$26.73	\$21,384.00	\$16.25	\$13,000.00	\$26.73	\$21,384.00		
410	CONCRETE SIDEWALK (F')	SY	33	\$77.60	\$2,560.80	\$77.60	\$2,560.80	\$80.00	\$2,640.00	\$77.60	\$2,560.80		
411	MOUNTABLE CURB MID-BLOCK RAMP (ADA)(CR-6)(CAST IRON)	SY	10	\$425.00	\$4,250.00	\$425.00	\$4,250.00	\$175.00	\$1,750.00	\$425.00	\$4,250.00		
412	CONCRETE PAVEMENT (F') (HIGH EARLY)	SY	500	\$132.00	\$66,000.00	\$132.00	\$66,000.00	\$108.50	\$54,250.00	\$132.00	\$66,000.00		
609A	CURB AND GUTTER TYPE 2 (SECTION I-B)	LF	152	\$40.25	\$6,118.00	\$40.25	\$6,118.00	\$42.50	\$6,460.00	\$40.25	\$6,118.00		
620	SANITARY FACILITY	EA	1	\$150.00	\$150.00	\$150.00	\$150.00	\$350.00	\$350.00	\$150.00	\$150.00		
626	MOBILIZATION	LS	1	\$850.00	\$850.00	\$850.00	\$850.00	\$3,000.00	\$3,000.00	\$850.00	\$850.00		
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$1,500.00	\$1,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$3,000.00	\$1,500.00	\$1,500.00		
720	MATERIAL SAMPLING AND TESTING	LS	1	\$2,240.00	\$2,240.00	\$2,240.00	\$2,240.00	\$2,000.00	\$2,000.00	\$2,240.00	\$2,240.00		
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00		
						\$158,127.25		\$158,127.25		\$132,208.50		\$158,127.25	

BID SCHEDULE B - Prairie Hawk Fire Station Prairie Hawk Drive				3801	CONTRACTOR BID AVG		CONTRACTOR AVG. TOTAL COST		PUBLIC WORKS ESTIMATE		Metro Pavers Inc.	
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	
202A	REMOVAL OF CURB AND GUTTER TYPE 2	LF	55	\$8.05	\$442.75	\$8.05	\$442.75	\$23.00	\$1,265.00	\$8.05	\$442.75	
202B	ASPHALT PLANING (2')	SY	550	\$5.10	\$2,805.00	\$5.10	\$2,805.00	\$3.75	\$2,062.50	\$5.10	\$2,805.00	
202C	REMOVAL OF CONCRETE PAVEMENT	SY	907	\$33.35	\$30,248.45	\$33.35	\$30,248.45	\$33.80	\$30,656.60	\$33.35	\$30,248.45	
202D	REMOVAL OF ASPHALT MAT	SY	62	\$16.33	\$1,012.46	\$16.33	\$1,012.46	\$18.00	\$1,116.00	\$16.33	\$1,012.46	
403A	HBP (2') (GR SX) (PG 58-28)	SY	62	\$59.47	\$3,687.14	\$59.47	\$3,687.14	\$45.00	\$2,790.00	\$59.47	\$3,687.14	
408B	HBP (PATCHING) (GR S) (F') (PG 58-28)	SY	550	\$24.50	\$13,475.00	\$24.50	\$13,475.00	\$14.00	\$7,700.00	\$24.50	\$13,475.00	
412A	CONCRETE PAVEMENT (F') (HIGH EARLY)	SY	907	\$132.00	\$119,724.00	\$132.00	\$119,724.00	\$108.50	\$98,409.50	\$132.00	\$119,724.00	
609A	CURB AND GUTTER TYPE 2 (SECTION I-B)	LF	55	\$40.25	\$2,213.75	\$40.25	\$2,213.75	\$40.00	\$2,200.00	\$40.25	\$2,213.75	
620A	SANITARY FACILITY	EA	1	\$150.00	\$150.00	\$150.00	\$150.00	\$350.00	\$350.00	\$150.00	\$150.00	
626A	MOBILIZATION	LS	1	\$850.00	\$850.00	\$850.00	\$850.00	\$3,000.00	\$3,000.00	\$850.00	\$850.00	
630A	TRAFFIC CONTROL MANAGEMENT	LS	1	\$1,500.00	\$1,500.00	\$1,500.00	\$1,500.00	\$3,000.00	\$3,000.00	\$1,500.00	\$1,500.00	
720A	MATERIALS SAMPLING AND TESTING	LS	1	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$2,000.00	\$2,000.00	\$1,200.00	\$1,200.00	
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	
					\$178,308.55		\$178,308.55		\$155,549.60		\$178,308.55	

BID SCHEDULE C - Ray Waterman Castle Oaks Drive				1282	CONTRACTOR BID AVG		CONTRACTOR AVG. TOTAL COST		PUBLIC WORKS ESTIMATE		Metro Pavers Inc.	
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	
202A	REMOVAL OF CURB AND GUTTER TYPE 2	LF	130	\$8.05	\$966.00	\$8.05	\$966.00	\$23.00	\$2,760.00	\$8.05	\$966.00	
202B	REMOVAL OF ASPHALT MAT	SY	218	\$16.33	\$3,559.94	\$16.33	\$3,559.94	\$18.00	\$3,924.00	\$16.33	\$3,559.94	
304	AGGREGATE BASE COURSE (CLASS 6) (F') (CONTINGENCY)	SY	20	\$75.27	\$1,505.40	\$75.27	\$1,505.40	\$33.00	\$660.00	\$75.27	\$1,505.40	
408B	HBP (PATCHING) (GR S) (F') (PG 58-28)	SY	218	\$59.47	\$12,964.46	\$59.47	\$12,964.46	\$62.00	\$13,516.00	\$59.47	\$12,964.46	
409	SEAL COAT (GSB #8)	SY	313	\$3.20	\$996.160	\$3.20	\$9,961.60	\$3.50	\$10,895.50	\$3.20	\$9,961.60	
609	CURB AND GUTTER TYPE 2 (SECTION 8-B)	LF	120	\$40.25	\$4,830.00	\$40.25	\$4,830.00	\$42.50	\$5,100.00	\$40.25	\$4,830.00	
620	SANITARY FACILITY	LS	1	\$150.00	\$150.00	\$150.00	\$150.00	\$350.00	\$350.00	\$150.00	\$150.00	
626	MOBILIZATION	LS	1	\$850.00	\$850.00	\$850.00	\$850.00	\$3,000.00	\$3,000.00	\$850.00	\$850.00	
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$750.00	\$750.00	\$750.00	\$750.00	\$3,000.00	\$3,000.00	\$750.00	\$750.00	
720	MATERIALS SAMPLING AND TESTING	LS	1	\$400.00	\$400.00	\$400.00	\$400.00	\$2,000.00	\$2,000.00	\$400.00	\$400.00	
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	
					\$36,937.40		\$36,937.40		\$46,205.50		\$36,937.40	

BID SCHEDULE D - Founders Treatment Plant 980 Lantern Trail				CONTRACTOR BID AVG		CONTRACTOR AVG. TOTAL COST		PUBLIC WORKS ESTIMATE		Metro Pavers Inc.	
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
409	SEAL COAT (GSB #8)	SY	1,100	\$3.20	\$3,520.00	\$3.20	\$3,520.00	\$3.50	\$3,850.00	\$3.20	\$3,520.00
408A	MASTIC	LB	100	\$6.90	\$690.00	\$6.90	\$690.00	\$7.00	\$700.00	\$6.90	\$690.00
408B	CRACK SEAL	LB	100	\$6.25	\$625.00	\$6.25	\$625.00	\$6.00	\$600.00	\$6.25	\$625.00
620	SANITARY FACILITY	EA	1	\$150.00	\$150.00	\$150.00	\$150.00	\$350.00	\$350.00	\$150.00	\$150.00
626	MOBILIZATION	LS	1	\$850.00	\$850.00	\$850.00	\$850.00	\$3,000.00	\$3,000.00	\$850.00	\$850.00
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$500.00	\$500.00	\$500.00	\$500.00	\$3,000.00	\$3,000.00	\$500.00	\$500.00
720	MATERIALS SAMPLING AND TESTING	LS	1	\$40.00	\$40.00	\$40.00	\$40.00	\$2,000.00	\$2,000.00	\$40.00	\$40.00
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00
					\$7,375.00		\$7,375.00		\$14,500.00		\$7,375.00

BID SCHEDULE E - Weaver II Well Field Wagonwheel Trail				5740	CONTRACTOR BID AVG		CONTRACTOR AVG. TOTAL COST		PUBLIC WORKS ESTIMATE		Metro Pavers Inc.	
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	
202A	REMOVAL OF ASPHALT MAT	SY	20	\$16.35	\$327.00	\$16.35	\$327.00	\$18.00	\$360.00	\$16.35	\$327.00	
202B	REMOVAL OF SIDEWALK	SY	3	\$34.50	\$103.50	\$34.50	\$103.50	\$25.50	\$76.50	\$34.50	\$103.50	
202C	REMOVAL OF CONCRETE PAVEMENT	SY	20	\$33.35	\$667.00	\$33.35	\$667.00	\$33.80	\$676.00	\$33.35	\$667.00	
403	HMA/MA (PATCHING) (GR S) (F') (PG 58-28)	SY	20	\$59.47	\$1,189.40	\$59.47	\$1,189.40	\$45.00	\$900.00	\$59.47	\$1,189.40	
408A	MASTIC	LB	100	\$6.90	\$690.00	\$6.90	\$690.00	\$7.00	\$700.00	\$6.90	\$690.00	
408B	CRACK SEAL	LB	100	\$6.25	\$625.00	\$6.25	\$625.00	\$6.00	\$600.00	\$6.25	\$625.00	
409	SEAL COAT (GSB #8)	SY	360	\$3.20	\$1,152.00	\$3.20	\$1,152.00	\$3.50	\$1,260.00	\$3.20	\$1,152.00	
410	CONCRETE SIDEWALK (F')	SY	3	\$77.60	\$232.80	\$77.60	\$232.80	\$80.00	\$240.00	\$77.60	\$232.80	
412B	CONCRETE PAVEMENT (F') (HIGH EARLY)	SY	20	\$132.00	\$2,640.00	\$132.00	\$2,640.00	\$108.50	\$2,170.00	\$132.00	\$2,640.00	
620	SANITARY FACILITY	EA	1	\$150.00	\$150.00	\$150.00	\$150.00	\$350.00	\$350.00	\$150.00	\$150.00	
626	MOBILIZATION	LS	1	\$850.00	\$850.00	\$850.00	\$850.00	\$3,000.00	\$3,000.00	\$850.00	\$850.00	
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$500.00	\$500.00	\$500.00	\$500.00	\$3,000.00	\$3,000.00	\$500.00	\$500.00	
720	MATERIALS SAMPLING AND TESTING	LS	1	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$2,000.00	\$2,000.00	\$1,200.00	\$1,200.00	
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	
					\$11,326.70		\$11,326.70		\$16,332.50		\$11,326.70	

BID SCHEDULE F - Wrangler Parking Lot Autumn Sage Street				2418	CONTRACTOR BID AVG		CONTRACTOR AVG. TOTAL COST		PUBLIC WORKS ESTIMATE		Metro Pavers Inc.	
ITEM NO	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	
202A	REMOVAL OF ASPHALT MAT	SY	13	\$16.35	\$212.55	\$16.35	\$212.55	\$18.00	\$234.00	\$16.35	\$212.55	
202B	REMOVAL OF CURB AND GUTTER TYPE 2	LF	44	\$8.05	\$354.20	\$8.05	\$354.20	\$23.50	\$1,034.00	\$8.05	\$354.20	
403	HMA/MA (PATCHING) (GRS) (F') (PG 58-28)	SY	13	\$59.45	\$772.85	\$59.45	\$772.85	\$45.00	\$585.00	\$59.45	\$772.85	
408A	MASTIC	LB	100	\$6.90	\$690.00	\$6.90	\$690.00	\$7.00	\$700.00	\$6.90	\$690.00	
408B	CRACK SEAL	LB	100	\$6.25	\$625.00	\$6.25	\$625.00	\$6.00	\$600.00	\$6.25	\$625.00	
409	SEAL COAT (GSB #8)	SY	1,050	\$3.20	\$3,360.00	\$3.20	\$3,360.00	\$3.50	\$3,675.00	\$3.20	\$3,360.00	
609A	CURB AND GUTTER TYPE 2 (SECTION I-B)	LF	44	\$40.25	\$1,771.00	\$40.25	\$1,771.00	\$40.00	\$1,760.00	\$40.25	\$1,771.00	
626	MOBILIZATION	LS	1	\$850.00	\$850.00	\$850.00	\$850.00	\$3,000.00	\$3,000.00	\$850.00	\$850.00	
630	TRAFFIC CONTROL MANAGEMENT	LS	1	\$500.00	\$500.00	\$500.00	\$500.00	\$3,000.00	\$3,000.00	\$500.00	\$500.00	
720	MATERIALS SAMPLING AND TESTING	LS	1	\$500.00	\$500.00	\$500.00	\$500.00	\$2,000.00	\$2,000.00	\$500.00	\$500.00	
F/A	MINOR CONTRACT REVISIONS	F/A	1	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	
					\$10,635.60		\$10,635.60		\$17,588.00		\$10,635.60	



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: File #: PWC 2023-017

To: Members of the Public Works Commission

From: Daniel Sailer P.E., Public Works Director
Trish Muller, Finance Director
Frank Castillo, Project Manager
Resolution Authorizing the Town Manager and Finance Director to Reallocate Approved Funds for the Pavement Maintenance Program, and the Street Reconstruction Program

Executive Summary

This item is requesting the Public Works Commission's formal recommendation to Town Council for the approval of a Resolution authorizing the Town Manager and Finance Director to reallocate contract funds among independent Pavement Maintenance Program (PMP) contracts, and Street Reconstruction contracts that have been approved by Town Council. This approval provides for the efficient adjustment of work scopes among contracts that result from changes that are identified during the course of the year without any increase to the approved PMP, and Street Reconstruction budgets. In past years staff has noticed that it is common to realize savings in some contract areas and increases in others as a result of changing conditions and newly identified maintenance needs.

The 2023 PMP is projected to be completed under the total appropriated program budget amount. The 2023 Council approved budget for all PMP contracts combined is \$18,500,000 within account 120-3140-431-40-35, with \$10,900,000 going toward PMP maintenance projects. A total of four independent maintenance contracts have been approved for completion of different maintenance treatments. It is anticipated all four contracts will be completed under this PMP budget.

The 2023 Street Reconstruction program is projected to be completed under the total appropriated program budget amount. The Streets Reconstruction program will use \$7,600,000 from the 2023 Council approved budget within account 120-3175-431-40-35. A total of two independent contracts has been approved for completion. It is anticipated that both contracts will be completed under this Street Reconstruction budget.

In order to expedite completion of projects within the PMP, and the Street Reconstruction Program, staff is requesting that Council authorize the Town Manager and Finance Director to reallocate savings as necessary in certain approved contract to other approved contracts as necessary to accommodate any identified changes to work scopes. These reallocations of funds will not increase the total appropriated budget for the programs.

Discussion

During the course of the contract period, it is anticipated some additional work will be identified in some contracts while savings are realized in others. In order to improve administrative efficiencies, the ability to reallocate funds between each contract would be beneficial. This allowance minimizes unnecessary cost increases and disruption to the travelling public by streamlining the contracting processes associated with extra work, keeping the contractors moving efficiently. This overall Council approved PMP budget, and Street Reconstruction budget would not be exceeded. Table 1 (**Attachment A**) shows the encumbrances from the PMP account for each of the four maintenance contracts, and the encumbrance from the Street Reconstruction account for the two approved contracts and the proposed encumbrance.

Budget Impact

This Resolution will not exceed the total appropriated budget of \$18,500,000 account 120-3140-431-40-35.

Staff Recommendation

Public Works and Finance department staff recommends approval of the Resolution authorizing the Town Manager and Finance Director to reallocate funds for the PMP or the Street Reconstruction Program.

Proposed Motion

"I move that the Public Works Commission recommend that Town Council approve the Resolution as introduced by title."

Attachments

Attachment A: Table 1

Table 1

2023 Projects with portions funded from PMP Account 120-3140-431-40-35	Requested Council Approval Date	Requested Authorized Expenditures (Portions within the Resolution Amount)
Asphalt Overlay	3/21/2023	\$7,980,883
Slurry Seal	3/21/2023	\$1,420,522
Curb, Gutter and Sidewalk	3/21/2023	\$1,258,219
Total		\$10,659,624

2023 PMP Account	2023 PMP Budget	Total Contracts Encumbrance	Net Budget Savings
120-3140-431-40-35	\$10,900,000	\$10,659,624	\$240,376

2023 Projects with portions funded from Street Reconstruction Account 120-3175-431-40-35	Requested Council Approval Date	Requested Authorized Expenditures (Portions within the Resolution Amount)
Full Depth Reclamation	3/21/2023	\$7,582,917
Total		\$7,582,917

2023 Street Reconstruction Account	2023 Street Reconstruction Budget	Total Contracts Encumbrance	Net Budget Savings
120-3175-431-40-35	\$7,600,000	\$7,582,917	\$17,083



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: File #: PWC 2023-018

To: Members of the Public Works Commission

From: Frank Castillo, Project Manager

Resolution Approving a Variance Pursuant to Chapter 9.16.070.E of the Castle Rock Municipal Code for Night Time Construction Activities Related to the 2023 Pavement Maintenance Program, 2023 Town Facility Parking Lot Improvement Program, and 2023 Capital Improvement Program Projects

Executive Summary

The Public Works Department is requesting a variance to the Town's noise ordinance to allow for various planned street maintenance and construction activities to occur at night within Town limits outside of the time periods currently permitted by the Municipal Code. The variance would be from April, 2023 to April, 2024.

The current Pavement Maintenance Program (PMP), Town Facility Parking Lot Improvement Program, and Capital Improvement Program (CIP) contracts, pending Public Works Commission and Town Council approval, allow for nighttime work to occur. However, the projects do not address the Town's noise ordinance.

The present noise ordinance prohibits construction activities that create noise disturbances between 7:00 p.m. and 7:00 a.m. Monday through Friday, and between 6:00 p.m. and 8:00 a.m. Saturday through Sunday, including holidays.

By authorizing night work, impacts to the traveling public and businesses will be minimized. Construction activities suitable for night work will, in general, have the activity duration reduced by half. This is due to the ability to have larger areas of one-way traffic or close portions of a street, which allows contractors to have a larger area to work in to increase productivity. The night work, in general, will start at approximately 7:00 p.m. and be completed by 5:00 a.m., prior to peak morning traffic.

The PMP's night work includes, Second Street between UPRR, and North Perry Street, and Fourth Street between UPRR and Elbert Street for asphalt mill and overlay. The nighttime activities of pavement removal, asphalt patching, asphalt milling, and the asphalt overlay is tentatively scheduled between May and August, 2023. Once the night work on Second Street between UPRR and North Perry Street and Four Street between UPRR and Elbert Street has started, citizens should experience approximately two weeks of consistent night work.

The Town Facility Parking Lot Improvement Program night work includes the Police Department parking lot. The asphalt mill and overlay work is tentatively scheduled between August and September, 2023. Once the night work at the Police Department has started, citizens should experience a week or less of consistent night work.

CIP night work includes the Crystal Valley Parkway Roundabout Project, the Four Corners Intersection Improvements Project, and the Plum Creek Parkway Widening Phase 2 Project. The Crystal Valley Parkway Roundabout is expected to be under construction from April to November of this year. The Four Corners Intersection Improvements project is anticipated to be under construction for May this year to Spring 2024. The Plum Creek Parkway Widening Phase 2 project is currently underway and is anticipated to be complete by the end of July this year. The majority of these projects will be constructed during daytime hours; however, the option to work periodically at night may minimize overall impact to the public.

Once contractors are selected for the projects, the schedules will be finalized and communicated to the public. All schedules are weather dependent.

The street maintenance and construction activities performed under this variance will include:

- Removal of existing pavement
- Pavement Marking
- Pavement Maintenance
- Pavement repairs
- Street Sweeping
- Asphalt Mill and Overlay
- Concrete repairs

Most of this work will be performed by contractors employed to perform work under the previously mentioned contracts; however, some pavement marking and street sweeping may be performed by Public Works staff. The variance to the ordinance would allow maintenance activities to occur during the summer months while minimizing disruption to the traveling public, as well as normal business activities in the Downtown area. The resolution, if approved, gives discretion to the Public Works Director to extend the variance time period by one month in order to complete any remaining work.

Staff and the Town's contractors understand the importance of minimizing noise disturbances adjacent to residential areas during night time activities. All night work scheduled will be approved by the Town to minimize resident disruption. The project team will conduct public outreach to provide residents with advance notice of scheduled night time work. Staff is recommending approval of the variance to the Town's noise ordinance in order to minimize disruption to the traveling public and normal business activities.

Notification and Outreach Efforts

Staff will communicate these work activities to the public as appropriate. Public outreach will occur in numerous forms such as; 1) Public Outreach Open House, 2) Town newsletters, 3) Town social media, 4) Door notification, 5) Press releases, 6) Town's Web site and others. Residents and

businesses will be notified of actual dates that work is to be completed adjacent to their properties, and traffic control plans will be developed and managed to ensure worker and public safety.

Discussion

The Town Municipal Code 9.16.030.B.5 prohibits construction noise that will create a noise disturbance from occurring between 7:00 p.m. and 7:00 a.m., Monday through Friday and, between 6:00 p.m. and 8:00 a.m. Saturday through Sunday, including holidays. A noise disturbance is defined in the Code as a 50 decibel level or higher at the residential real property boundary.

The attached location maps illustrate the location of residential zoned properties in relation to the construction limits of each project. The maps indicate there are residential zoned properties within a block of Second Street and Fourth Street projects. It is anticipated that construction work may create a noise disturbance. In this circumstance, residents will be offered hotel accommodations on the few select nights when work is in close proximity of their residences. This is a continued practice of the Town to offer residents hotel accommodations during the nighttime construction activities.

Night work construction activities will be limited to Sunday evening through Friday morning for the PMP, and the Town Facility Parking Lot Improvement Program projects. The CIP projects are anticipated to perform nighttime construction activities Sunday through Saturday, to help the contractors expedite the construction schedule.

Due to increasing traffic volumes and the desire to limit disruption to the traveling public and normal business activities adjacent to these projects, staff is seeking a variance to the existing noise ordinance to allow certain work activities outside of the restricted hours.

Financial Impact

The financial impact of this action will be limited to the cost of providing residents hotel accommodations on a few of the select nights when work is in close proximity to their residences. A budget of \$3,000.00 has been allocated and will be expensed to account 120-3140-431.40-35. No additional project cost from the contractor will be incurred with these nighttime activities because the projects were bid with night work anticipated. No additional cost from consulting engineers will be incurred as their contracts will be set up to accommodate night work. No additional overtime will be incurred by the Town with these activities as staff will shift their work schedules to night hours for the necessary time periods.

Staff Recommendation

Staff recommends that the Public Works Commission recommend to Town Council to approve the Resolution as introduced by title.

Proposed Motion

"I move that the Public Works Commission recommend to Town Council to approve the Resolution as introduced by title."

Item #: **File #:** PWC 2023-018

Attachments

Attachment A: Location Maps



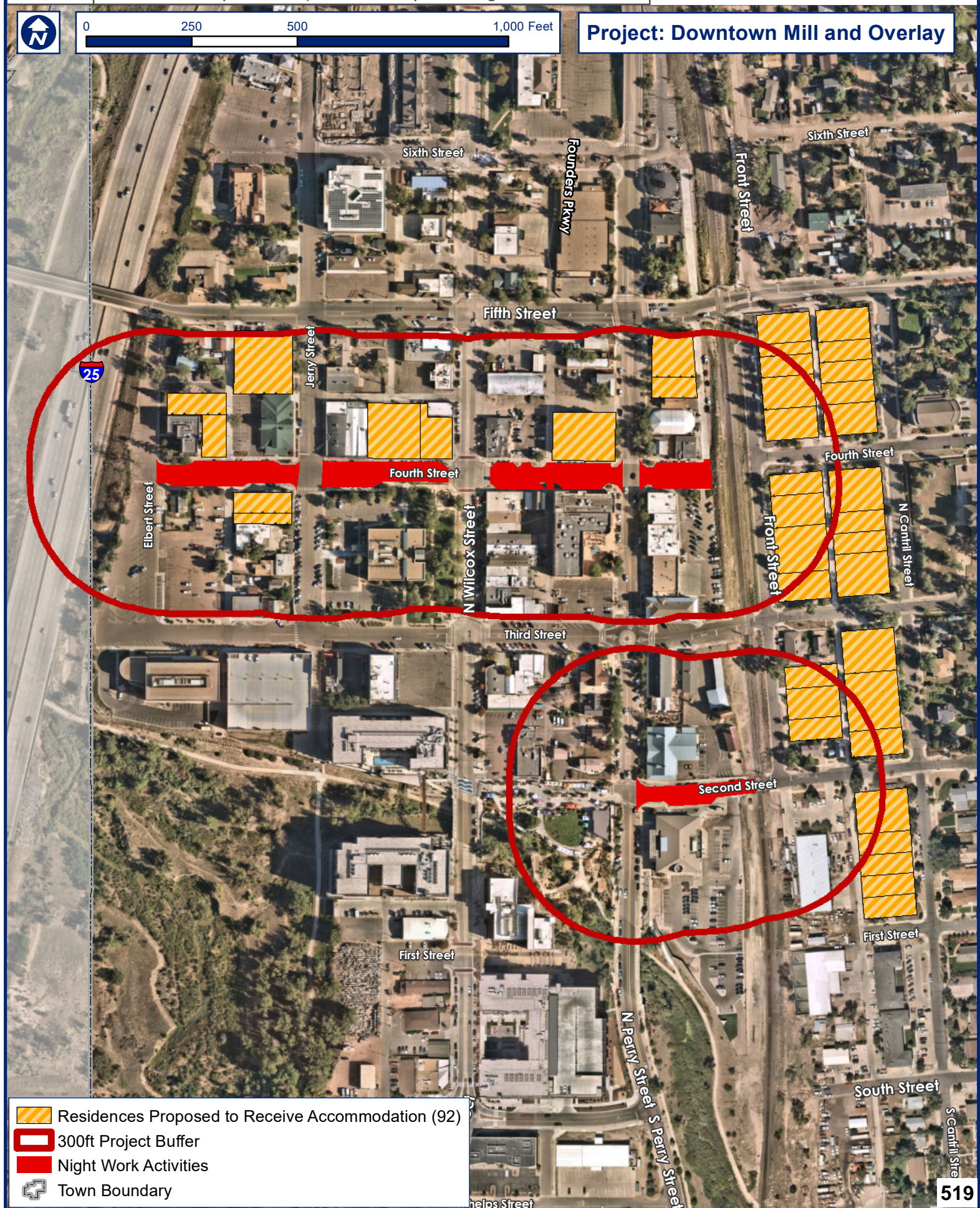
NIGHT WORK ACTIVITIES MAP

Residential Properties Adjacent to Proposed Night Work

ATTACHMENT B



Project: Downtown Mill and Overlay





NIGHT WORK ACTIVITIES MAP

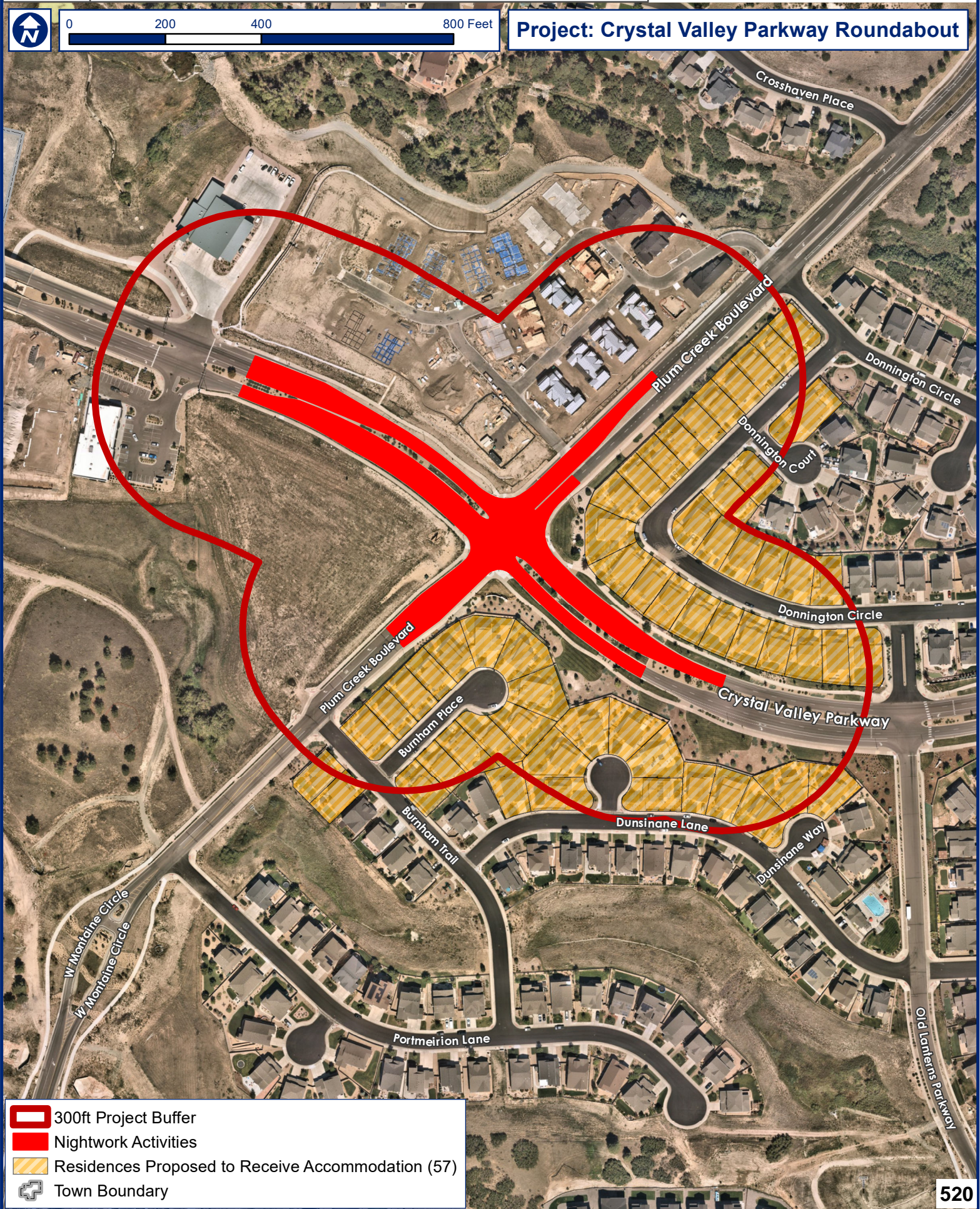
Residential Properties Adjacent to Proposed Night Work

ATTACHMENT B



0 200 400 800 Feet

Project: Crystal Valley Parkway Roundabout





NIGHT WORK ACTIVITIES MAP

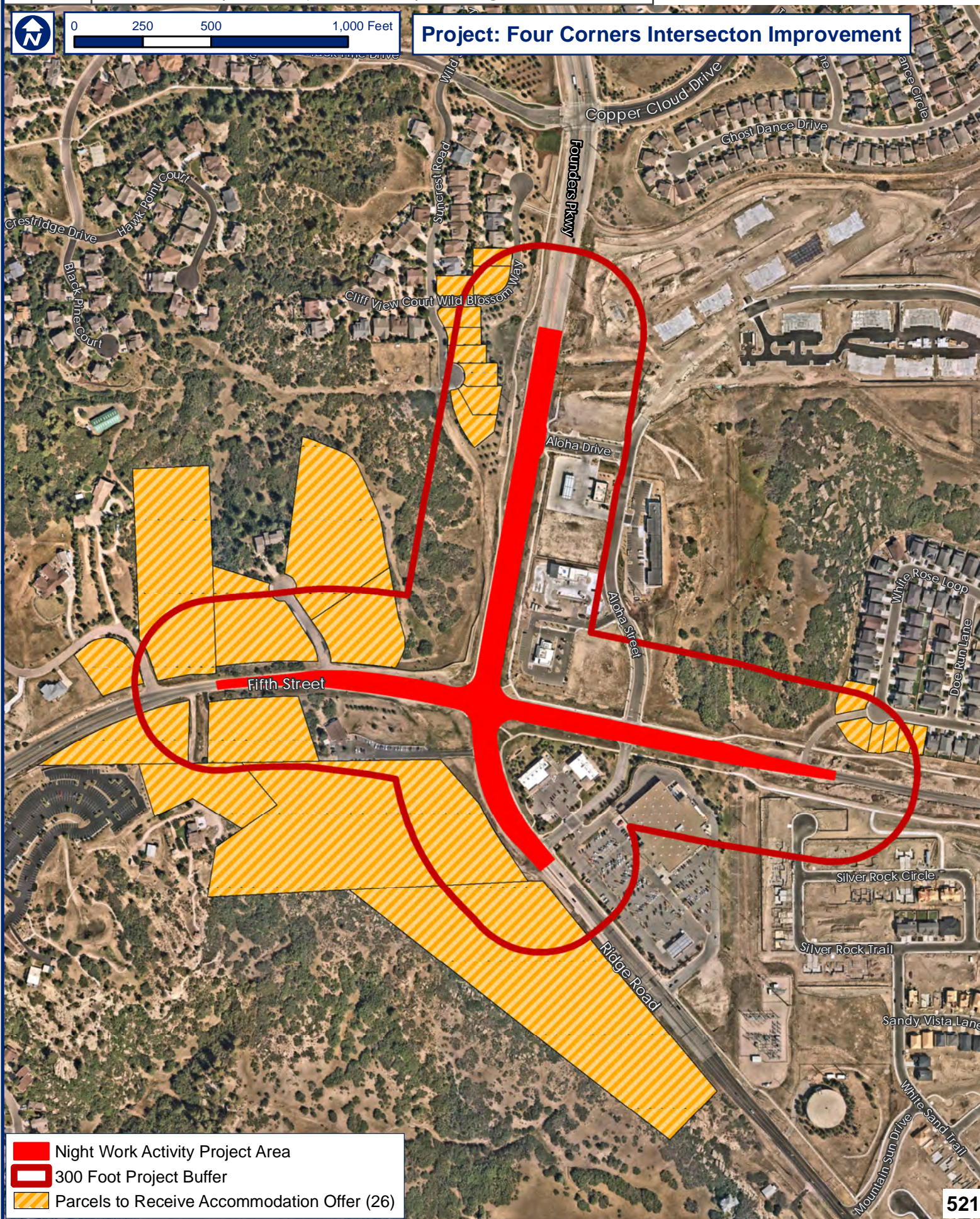
Residential Properties Adjacent to Proposed Night Work

ATTACHMENT B



0 250 500 1,000 Feet

Project: Four Corners Intersection Improvement



- Night Work Activity Project Area
- 300 Foot Project Buffer
- Parcels to Receive Accommodation Offer (26)



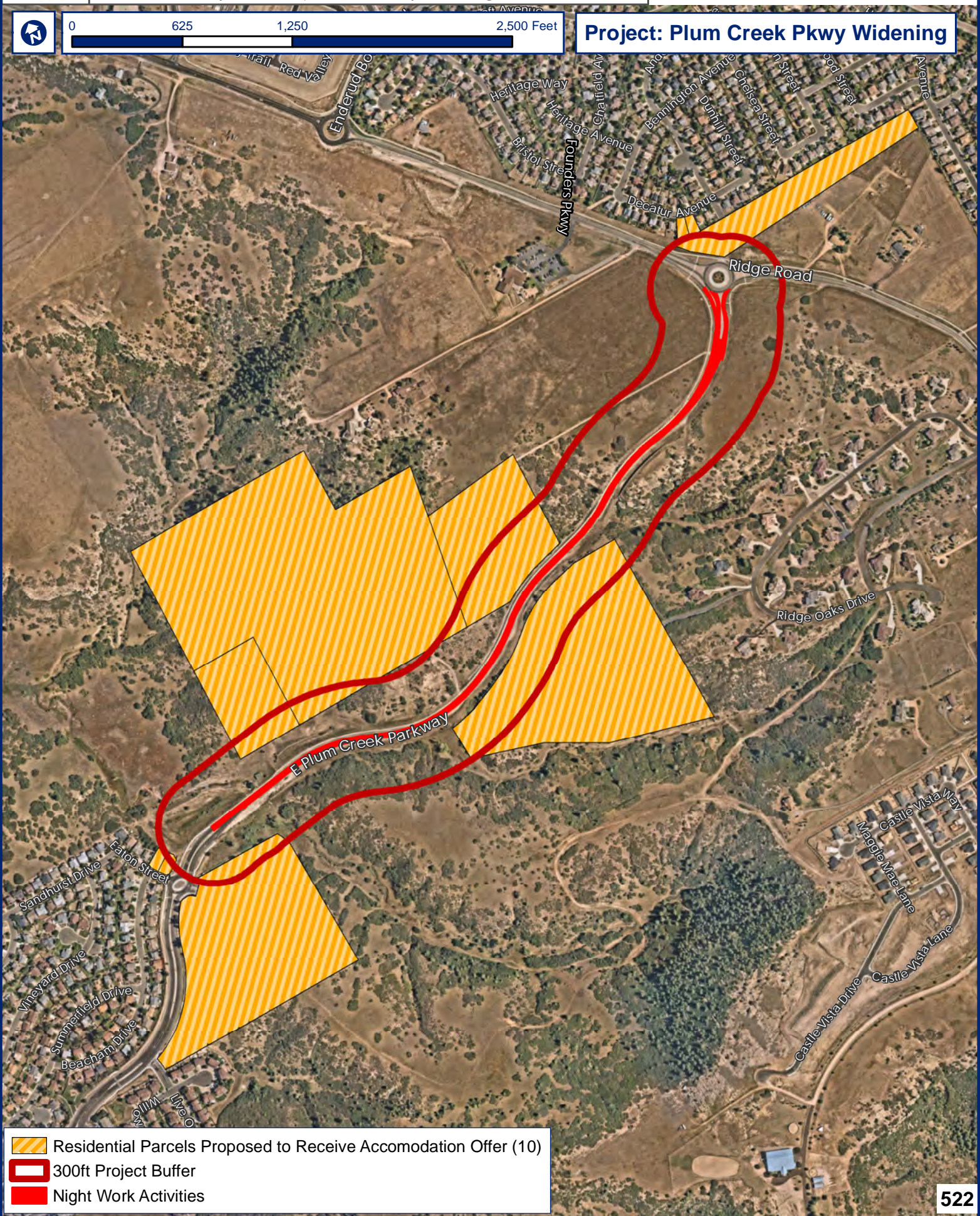
NIGHT WORK ACTIVITIES MAP

Residential Properties Adjacent to Proposed Night Work

ATTACHMENT B



Project: Plum Creek Pkwy Widening



- Residential Parcels Proposed to Receive Accomodation Offer (10)
- 300ft Project Buffer
- Night Work Activities



Town of Castle Rock

Agenda Memorandum

Agenda Date: 3/6/2023

Item #: **File #:** PWC 2023-019

To: Members of the Public Works Commission

From: Daniel Sailer, PE, Public Works Director

Project Updates

Executive Summary

An overview of the current Public Works project/programs.

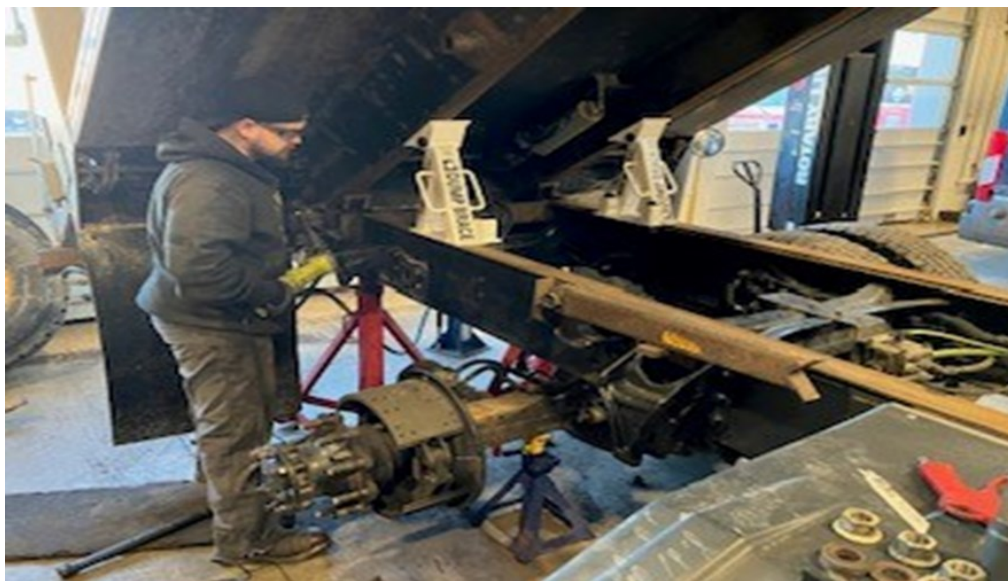


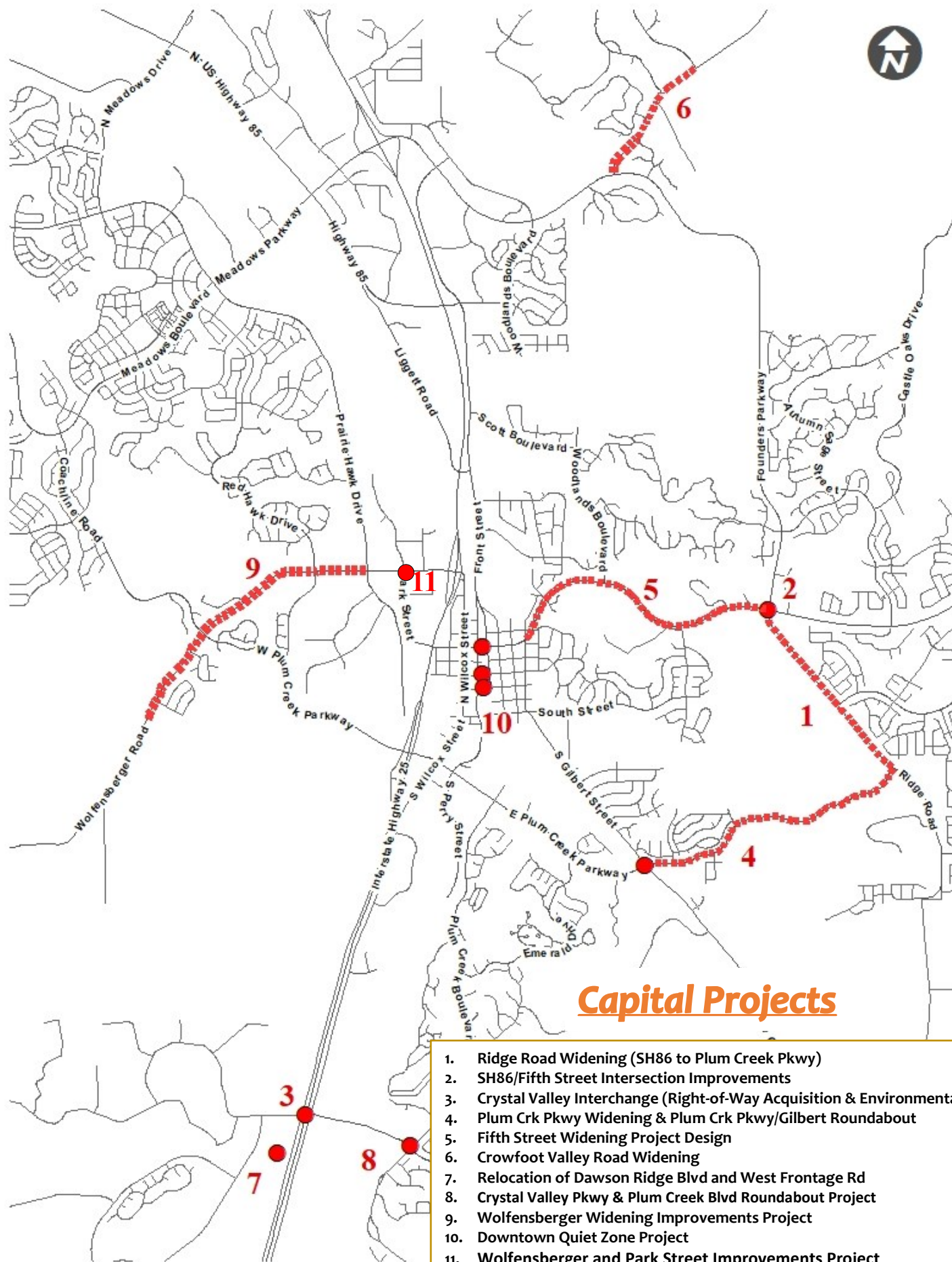
Monthly Report

January 2023

The Public Works Department operates under the **CAN DO** philosophy – We are committed to doing the job right with a positive attitude while staying dedicated to meeting the needs of our Town values and continually searching for opportunities to improve.

PW Mission: To provide outstanding service, safety and support for transportation infrastructure and maintenance.





1. **Ridge Road Widening** – Ridge Road will be widened from two to four lanes between the Founders Parkway (SH86)/Fifth Street/Ridge Road intersection and Plum Creek Parkway. The goal is to reduce traffic congestion on the Ridge Road corridor.

Phase: Construction

- Continue to maintain TESC BMPs
- Winter *Shutdown*

Budget: \$5,225,000

ROW Acquisition: A valuation hearing for the Bertelsen property is scheduled for March 2023

Targeted Construction Completion: Spring 2023

2. **Founders Parkway (SH86)/Fifth Street Intersection “Four Corners” Improvements** – With new traffic studies submitted, the consultant will investigate multiple alternatives to address safety concerns and capacity issues at the intersection. Improvements under evaluation include:

- Intersection will remain a full movement four-way intersection. Additional turn lanes and acceleration lanes will be added.
- Traffic signal improvements will be made to incorporate the larger intersection.
- Pedestrian and bicycle improvements will be constructed on all four sides of the project.
- Stormwater detention and water quality improvements will be constructed to capture the additional surface volume from the new intersection.

Phase: Design— David Evans & Associates (DEA) is the design consultant for this project. The following is a summary of the activities performed this month:

- DEA delivered bid package to CDOT for review
- Once revisions are received from CDOT, set will be sent to FHWA
- Awaiting lien release on Haddad property to complete ROW acquisitions
- All utility relocations have been completed, protect in place is all that remains for dry utilities
- Consultant for Construction Management Services was approved by Town Council, RockSol consulting will provide services
- Working on long lead item submittal for signal poles due to 9-month lead time

Budget: \$1,275,676, with DRCOG Grant Reimbursement

Targeted Construction Completion: Winter 2023-2024

3. **Crystal Valley Interchange – Pre-construction Activities** – The purpose of this project is to achieve acquisition of remaining right-of-way, complete design, and set aside future project funding allowing potential funding partnerships to assist with advancing construction.

Phase: Right-of Way Acquisition

- West Side of I-25 – The Town will begin the Notice of Intent (NOI) process and make offer to the new owners of all remaining parcels to be acquired; Westside Investments has purchased all remaining parcels to be acquired from Douglas County Development Company and the MSP Corporation

- East Side of I-25 – NOI has been sent to the Hyperion Property owner; the Town has completed the full take appraisal of the Hyperion property; Hyperion property owner is electing to have an appraisal done; ownership of the Dawson Ridge Metro District parcel has been transferred to the Douglas County Development Company; Town is in the process of preparing a NOI and offer

Phase: Design— Interchange Access Request and Environmental Assessment Reevaluation, and Design

- Transportation demand managements letter to be sent to CDOT Director for signature/approval
- Design firm continues working on design for package 1 and for package 2
- Environmental/NEPA – CDOT staff plan to approach CDOT Executives first part of February
- Construction management services contract to be entered into in February
- Maintenance agreement with CDOT draft submitted for Town review – still pending drainage/water quality items. Town is developing comments.

Budget: \$6,500,000, and Development Escrow

Design Completion: Summer 2023

Targeted Construction Completion: Summer 2025

4. **Plum Creek Parkway Widening and Plum Creek Parkway/Gilbert Street Roundabout Project** – This project will implement the Transportation Master Plan’s identified improvements for this corridor. The addition of the remaining two lanes of the master planned four-lane roadway on Plum Creek Parkway between Eaton Street and Ridge Road. Not only will it include the addition of two lanes, but also bicycle and pedestrian multi use lanes. It will also include roundabout modifications at Ridge Road. The improvement has been broken out into three phases in order to meet the department’s objectives. Phase 1A included portions of storm sewer improvements between Gilbert and Eaton. Phase 1B includes all roadway/utility/pedestrian access improvements between Gilbert and Eaton, including the implementation of roundabouts at the intersections of Gilbert and Eaton. Phase 2 includes all roadway/utility/pedestrian access improvements between Eaton and Ridge Road.

Phase 1B: Plum Creek Pkwy Widening and Roundabouts Gilbert to Eaton):

Construction Budget: \$7,507,723

Completion: Complete

Plum Creek Parkway Widening Phase 2 – This project will implement the Transportation Master Plan’s identified improvements for this corridor. The addition of the remaining two lanes of the master planned four-lane roadway on Plum Creek Parkway between Eaton Street and Ridge Road. Not only will it include the addition of 2 lanes, but also bicycle and pedestrian multi use lanes. It will also include roundabout modifications at Ridge Road.

Phase 2: Plum Creek Pkwy Widening (Eaton to Ridge): Construction – The following is a summary of design activities performed this month:

- Continued installation of the block retaining wall
- Continue the maintenance of erosion control
- Continued the installation of headwall for storm drain
- Completed the relocation of utilities
- Continued installation of conduit for street lighting

Budget: \$7,530,000

Targeted Construction Completion: Fall 2023

5. **Fifth Street Widening Project Design** – Fifth Street is a major arterial connecting local and regional travel between the easterly portions of Town and I-25. Roadway and pedestrian improvements for Fifth Street have been identified within the 2017 Transportation Master Plan (TMP) that will maintain adequate capacity and ensure efficient road network connections for future development.

The Fifth Street Widening project will complete all design elements for implementation of the full build-out transportation network from South Gilbert Street to Ridge Road as identified in the TMP. The improvements include:

- Widen to 4-lanes from Woodlands Boulevard to Ridge Road
- Add on-street bike lanes between Gilbert Street and Ridge Road
- Add sidewalks from Sixth Street to Ridge Road
- Roundabout and signal light construction at Woodlands Boulevard and Valley Drive respectively.

Phase: Design

- Completed 90%/FOR design

Budget: \$1,500,000

Design Completion: February 2023

Right-of-way acquisition: Fall 2023

Targeted Construction Completion: 2024-2025

6. **Crowfoot Valley Road Widening** – Crowfoot Valley Road will be widened between the Knobcone Drive and Macanta Blvd. Currently, this section of Crowfoot Valley Road is a two lane transition section of asphalt roadway with portions in the Town of Castle Rock and in Douglas County. Recent improvements have been completed at both ends of this project along Crowfoot Valley Road, and the intent of this project is to complete improvements to the “gap” between these improvements. The proposed roadway will be a four-lane section, including painted median/turn lanes, with bike lanes in both directions.

Phase: Design—

- Town Council gave direction for project to move forward with completing design of project with left acceleration lanes at non-signalized intersections and wide medians with a vertical element where feasible along with a new traffic signal at Sapphire Pointe Boulevard
- The Town and Douglas County continue to refine the IGA defining County funding contributions for the project
- Town continued refinement of a design “scope of work” to move forward with procurement activities to obtain consultant designer

Budget: \$2,500,000 (Town contribution to construction

funding; IGA to be executed with County)

ROW Acquisition: Late 2023

Design Completion: Fall 2023

Targeted Construction Completion: Fall 2024

7. **Relocation of Dawson Ridge Blvd and West Frontage Rd** – The purpose of this project is to relocate the I-25 West Frontage Rd to the west of the BNSF Railroad tracks to provide access to the surrounding neighborhoods and residents after the Crystal Valley Interchange is complete.

Phase: Design – CORE Consultants is the design consultant for this project. The following is a summary of the activities performed this month:

100% plans are in review process with Town; Bid documents are in review with Town

Budget: \$299,000

Design Completion: Fall 2022

Targeted Construction Completion: Summer of 2025 in conjunction with Crystal Valley Interchange

8. **Crystal Valley Pkwy & Plum Creek Blvd Roundabout Project**

This intersection is a major arterial currently controlled by stop signs in two directions. As the traffic volumes increase and with ongoing residential development and future construction of the new Crystal Valley Interchange, this existing traffic control will not be the most efficient and could contribute toward increased accidents. This project will accomplish the design of a roundabout intersection in order to improve the traffic capacity of the intersection, help to manage speeds along Crystal Valley Parkway, and to accommodate the growth in traffic that is expected to increase once the Crystal Valley Interchange has been constructed. This project is scheduled to be designed by September mid-October 2022, bid in October 2022, and constructed by Summer 2023.

Phase: Design

- 100% Complete

Phase – Construction

- KNA started the submittal on material documents for long lead items
- Started meeting with dry utilities for utility relocations
- Submitted construction phasing plans
- KNA procured property for material stockpile
- Started initial permitting process for the project

Budget: \$3,500,000

Targeted Construction Completion: Summer 2023

9. **Wolfensberger Widening Improvements Project-** Wolfensberger Road is a major arterial connection for local and regional travel between the westerly portions of Town and I-25. Roadway and pedestrian improvements for Wolfensberger have been identified within the 2017 Transportation Master Plan (TMP) that will maintain adequate capacity and ensure efficient road network connections for future development.

The Wolfensberger Widening Improvements Project will complete all design elements for the implementation of the

full build out transportation network from the western Town limits to Prairie Hawk Drive.

- Widening roadway to a full 4-lane arterial section
- Addition of sidewalk along both sides of Wolfensberger
- Roundabout construction at Red Hawk/Auburn and Wolfensberger Intersection
- Removal of existing traffic signal
- Storm water drainage improvements
- Implementation of on street bike lanes West/East bound

Phase: Planning/Design

- Design survey complete and being compiled
- Ongoing design work with adjacent developers to accommodate and incorporate their ingress/egress into project design
- Design efforts/coordination is under way to possibly utilize developer stormwater infrastructure to avoid ROW acquisition
- Design efforts to utilize existing Town property for stormwater improvements underway
- Utility coordination meetings with CORE and CRW ongoing
- Wall design under way for pedestrian bridge crossing
- SUE investigation 99% complete, compiling into matrix and plan sheets
- 30% Design submittal scheduled for end of April 2023

Budget: \$2,500,000

Design Completion: October 2023

Right of Way Acquisition: 2023

Targeted Construction Completion: 2024

- 10. Downtown Quiet Zone Project** - This project is to implement a quiet zone through the downtown Castle Rock area. In order to implement the quiet zone, improvements must be constructed at three railway crossings: Second Street, Third Street and Fifth Street. The scope of the improvements to be constructed with this project include: additional crossing gates, pedestrian crossing improvements, ADA improvements, sign and marking improvements, curb and gutter additions and general railroad (Union Pacific or UP) coordination. The benefits of this project will be improved safety for vehicles and pedestrians and improved quality of life for downtown businesses, residents and patrons.

Phase: Construction - The following is a summary of activities performed this month:

- Coordinate construction impacts (closures) with project stakeholders/community
- Performed Union Pacific scope of work to replace track at Second and Third Street
- Provided roadway closures for Union Pacific to perform track improvements
- Widened crossing widths (concrete landings) at Second and Third Street
- Obtained approval for Town's Right-of-Entry permit

Budget: \$1,800,000

Targeted Construction Completion: Spring 2023

- 11. Wolfensberger and Park Street Improvements Project-** Wolfensberger Road is a major arterial connection for local and regional travel between the westerly portions of Town and I-25. Roadway and pedestrian improvements for Wolfensberger and Park Street have been identified to increase intersection operations and provide better pedestrian access to the Downtown area.

The Wolfensberger and Park Street Improvements Project will complete all design elements for the implementation of pedestrian and transportation improvements.

- Relocate Traffic Signal Pole
- Increase sidewalk width
- Replace existing ADA ramps
- Construct Additional Turn lane on Park Street

Phase- Planning/Design

- Design survey complete and being compiled
- ROW plans are being drafted
- Utility coordination meetings with CORE and Comcast ongoing
- SUE investigation to start February 6th
- 90% Design submittal scheduled for end of April 2023

Budget: \$600,000

Design Completion: April 2023

Right of Way Acquisition: April-May 2023

Construction: June 2023

Traffic Signal System Upgrades – This project is a multi-year signal system upgrade project that began in 2015 and is ongoing as funds are available. The project has included proven technology advances at signalized intersections, for our daily operations, and for communications between the center and each intersection.

- Staff is a part of the CDOT managed, adaptive signal system project that will implement adaptive signal timing on Founders Parkway, and Meadows Parkway, and Factory Shops Boulevard. Eight abutting Town signals will be included in the system. In January, Kimley-Horn resolved CDOT's detection issues, and the system was turned on for brief periods to verify functionality. More regular system operation will be implemented on a more frequent basis when detection is functioning reliably on a regular basis.
- Phase II of the Town's ATSPM project includes software development and signal timing. Traffic signal timing changes on regionally significant roadways were checked in January. A few coordination issues have been determined and timing adjusted. Kimley-Horn is currently checking the new software for bugs and will be updating the Town's software once the bugs are fixed. ATSPM Dashboard will be implemented in February 2023.
- Town Staff have received three new traffic signal cabinets and four new detection systems as part of inventory and replacement maintenance. The last two intersection's new detection orders will be made in 2023 as a part of a five year replacement project. Two sets of inventory detection will be ordered for emergency

maintenance purposes.

Budget: \$868,700

Construction Completion: End of year 2023

2023 Safety Projects – This project includes concrete safety devices in conjunction with the Pavement Maintenance Program, installation of pedestrian crossing beacons at four locations, Intelligent Transportation System on Meadows Blvd to warn drivers of signal changes, intersection safety improvements, and missing sidewalk connections.

- Bidding of the projects occurred in January and the project received four competitive bids
- Public feedback, as well as bid award will occur in February and March.

Budget: \$410,000

Construction Completion: Winter 2023

Illuminated Street Name Signs – 2023 illuminated street name signs have begun the planning and purchase order process for four locations throughout the Town budget depending, including: Founders Pkwy and Copper Cloud, Founders Pkwy and Ridge Road (Four Corners), Wolfensberger and Park St, and Wolfensberger and Caprice.

- CDOT will be re-wiring the entire signal intersection at Meadows Pkwy and Hwy 85. This project will create a power feed for two remaining unlit signs. This project will also bring the street lights currently owned by CDOT into Town operation and maintenance along Meadows Parkway and US-85 north of Meadows Parkway.
- 2022 illuminated street name signs have been purchased and staff are awaiting delivery for five locations across Town, including: Plum Creek Pkwy and Plum Creek Blvd, Plum Creek Pkwy and Perry St, Founders Pkwy and Front St, Wilcox St and I25 northbound, and Wolfensberger and I25 southbound.

2022 Budget: \$39,105

Construction Completion: Spring 2023

2023 Budget: \$60,000

Construction Completion: Winter 2023

Rectangular Rapid Flashing Beacons (RRFB) – Town staff are currently in the process of selecting four locations budget depending to install RRFBs in 2023. The RRFBs will be installed in locations in which they are the most effective and beneficial to the traveling public. Equipment order will be made by the first week of March.

2023 Total Safety Budget: \$90,000

Construction Completion: Summer 2023

Engineering Division

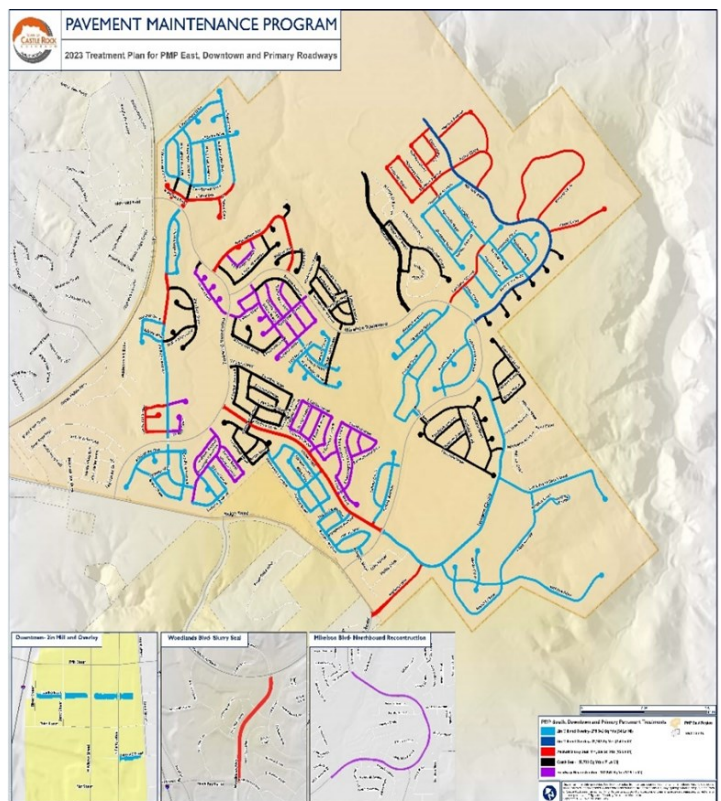
2023 Pavement Maintenance Program (PMP)

Five (5) project bid packages were opened January 19. The staff is in the process of evaluating the bids submitted, checking and verifying all bid proposals as well as doing follow up on contractor references. The staff will also begin the process of contract award recommendations.

2023 PMP Contracts under consideration are:

- Asphalt Overlay
- Full Depth Reclamation
- Curb, Gutter and Sidewalk Replacement
- Slurry Seal
- Town Facilities Parking Lot Improvements

The PMP map (shown below) indicates the proposed scheduled treatments for street within the East PMP area and Primary Streets. This map may change based on maintenance treatments and resources available



2023 Facilities Parking Lot Improvements Program

The project bid openings were completed on January 19. The staff is in the process of evaluating bid submitted, prior to contract award recommendations. This process includes checking and verifying all bid proposals and contractor references.

Facilities under recommendation for 2023 are:

Founder's Fire Station #153	Gemstone Park Parking Lot
Prairie Hawk Fire Station #154	Ray Waterman Treatment Plant
Wrangler Park Parking Lot	Founder's Treatment Plant
Weaver II Well Field	Bison Park Parking Lot
Butterfield Park (Concrete off Meadows Blvd)	

2023 Bridge Maintenance Program (BMP)

The staff is working with a bridge consultant for 2023 Bridge Maintenance and will be supporting the Engineering Department. The consultant has delivered a Bridge Program maintenance schedule for planning, design and maintenance activity recommendations for the Plum Creek Parkway over Sellars Gulch Bridge (CAS PLMCKPW-.1). The staff is working to secure a new service agreement with the contractor. This project is expected to go out for competitive bids in the Spring, with construction beginning late Summer/early Fall.

Development Division

Review and Permitting

Development Review - All 33 reviews were completed. No late reviews this month.

Permitting & Inspection – 18 right-of-way permits were issued.

Transportation Planning & Traffic Engineering Division

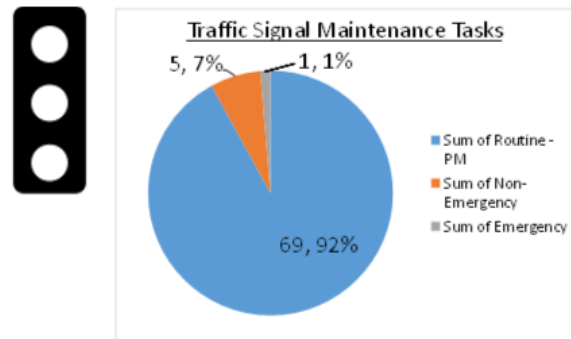
Taxi Voucher Program

For the month of January, the Taxi Voucher Program funded 142 rides; which is nearly the same at last year's January total of 141 and a 25% increase from last month's total rides. Transportation services are provided for Castle Rock citizens who cannot drive, have a disability that prevents them from driving, or do not have access to a vehicle. In January, 22 individuals used the Taxi service. Of those individuals, 67% of the rides were for work, 20% for shopping trips, and 13% for medical appointments. Fifty-five rides were provided for people without access to a vehicle, 41 rides to seniors, and 46 rides to disabled riders.

The Castle Rock Senior Center provided 841 rides in January.

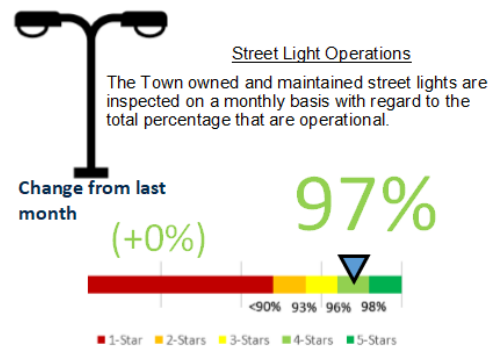
Traffic Engineering and Operations

Traffic Signal Operations and Maintenance

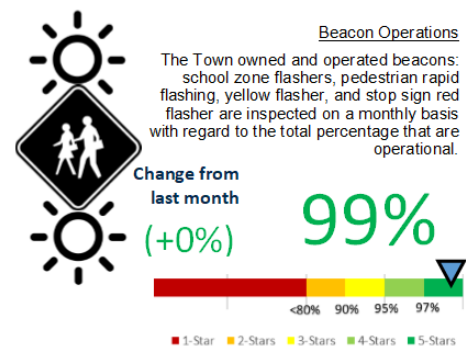


- Most frequently visited signals: Fifth St and Wilcox St

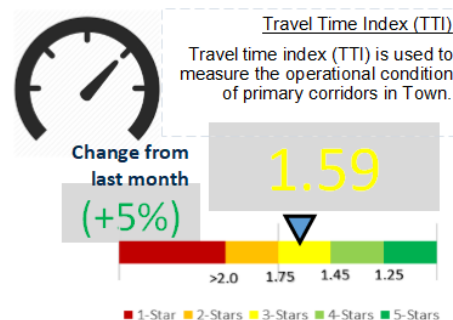
Street Light Operations



Beacon



Operations



Street Signs and Pavement Marking Maintenance

For the month of January, the team completed 873 tasks. Of these tasks, 563 of them were sign work activities related to fabrication, install, repairs, replacements, inspections and investigations. We had 233 beacon related tasks, including windshield inspections, and repairs. Other tasks included 34 small projects, three delineator projects, one liquor license posting, and 39 admin tasks.

Pavement Maintenance Program East and Downtown Development Authority sign inspections are completed. Repairs and the change out to blue street name signs has begun. The team also supported a couple snow plow events this month.

Transportation Planning

Castle Rock Downtown Wayfinding Sign Plan:

The initial public survey closed in early January. There were 126 total respondents that provided feedback on the survey. A summary of the survey responses was provided and is currently under review by the project team. In addition, the consultant AECOM created a recommendations report which will be distributed to the project team for review.

Neighborhood Traffic Calming Program (NTCP):

The NTCP exists to verify and address quality of life items associated with vehicular traffic on local neighborhood streets and certain residential collector roadways. No new inquiries were received in January. Public Works has not been able to collect speed and volume data for Valley Drive, Black Pine Trail, and N. Meadows due to poor road conditions and snowy weather.

DRCOG Transportation Improvement Program (TIP):

Town staff completed the Crystal Valley Interchange grant application for the Sub-regional Call #4 in January. Projects will be scored and ranked in February. The Town is still awaiting news on what projects were selected by the Federal Rail Administration for the elimination of at grade crossings grant. Staff is currently working on the 2023 RAISE grant application for Crystal Valley Interchange. Applications are due February 28, 2023.

Fleet Services

Keeping Castle Rock on the Move



As you drive around Castle Rock and see many different departments providing first-class service, you will notice how they rely on their Town-issued vehicles. The Fleet Division takes great pride in knowing that those vehicles are reliable and safe to operate.

Fleet Services Division continues to make sure that Town vehicles and equipment are ready for operation. This includes public safety vehicles like Police & Fire but also other department vehicles that need to be in use to provide great service for our residents.

The Fleet Division continued to keep Castle Rock on the move in January. We opened 147 work orders and completed 133 work orders with 266 repairs. Our total cost for January was \$81,725. The Fleet consumed more than 11,000 gallons again in January at a cost of \$2.50 per gallon of unleaded and \$4.16 a gallon for diesel.

Our technicians continued to perform great work throughout the month. They completed 86 Preventative Maintenance (PM) repairs and made an additional 57 repairs found during those PM's. Our PM schedule is very important in catching repairs needed before the vehicles break down. It is critical to our asset availability for the using departments to be able to provide service to our community. Our parts department supported our operations by providing more than 2000 parts at a cost of \$21,700. Supply chain delays and labor shortages continue to delay some orders. Thank you to our team and the commitment they make to keep the Town moving.



The Vehicle Replacement Program continues to work with vendors to source vehicles due for replacement. We are finding that the cost of up fitting equipment for these vehicles are exceeding the cost of the vehicle chassis purchase. We are making adjustments to reduce these cost were we can without affecting the using departments. An example of this is the total capitalization cost for police vehicles in 2022 was \$73,000. That same patrol car in 2023 has exceeded \$90,000 for each vehicle. Fleet is exploring in house up fitting options to help reduce these cost.

Objective/Benchmark: Complete at least 75% of our work orders within 48-hours of coming to shop.

Outcome: Fleet team completed 80% of the work orders within 48-hours of opening repair requests or service requests. This benchmark number shows how quickly vehicles and equipment get serviced and repaired and back on the job.

Objective/Benchmark: Town vehicles and equipment available for use 95% of time.

Outcome: Town vehicles and equipment were available 98% of the time. This high fleet availability rate means that Town vehicles and equipment are ready when they are called upon to perform.

Objective/Benchmark: Technician productivity percentage of 70% (APWA standard)

Outcome: Technician productivity was 73%. Productivity is the measure of available billable hours by our technicians. We met our objective for the month despite some challenging repairs and weather conditions.

Street Operations & Maintenance Division

During the month of January, the Street Operations & Maintenance Division (SO&MD) performed work in the following maintenance operations:

*Snow and Ice Control
*Equipment Maintenance

*Ice Breaking Operations

Snow and Ice Control

January brought five snow events requiring a response from the Town. The crews committed a total of 930 hours to plowing Town roadways, covering a total of 9,397 miles. The sustained cold created a persistent ice problem and crews deposited 452 tons of Ice Slicer as well as 5000 gallons of magnesium chloride to try to enhance the melting on roadways. The extreme cold temperatures contributed to the inability of the roadways to recover from successive storms.

Roadway Icebreaking

Between snowstorms, the crews have been devoting nearly all their time to ice breaking. The crews dedicated 837.63 hours to clearing ice off Town roadways. The persistent cold temperatures greatly contributed to the widespread and problematic icing problems experienced throughout Town.

Equipment Maintenance

The crews spent 162 hours working to keep the equipment needed for snow and ice control operations running and in good working order. These operations are very hard on equipment and routine maintenance and regular changes of wear parts is vital to the ability to respond to Snow when needed.

Looking Ahead

In February, the Streets Division crew will maintain vigilance for and our ability to respond to snow storms, as well as the ice and road damage that subsequently follows. Post storm street sweeping will also be a priority for the Division especially as the persistently cold temps have prohibited these operations. Equipment maintenance will also be at the forefront of Crew efforts.