

Chapter 13 - Public Infrastructure Acceptance Procedures and Warranty Requirements

13.1 Applicability

Before the City assumes ownership and maintenance responsibility for newly constructed public improvements, the public improvements shall be formally accepted by the City Public Works Department. The Developer (Development Projects) or the Contractor (Capital Improvement Projects) is responsible for the proper installation of all improvements. Please refer to the City's website to obtain the Acknowledgement of Public Improvement Procedures document and checklist.

Failure by the City's representatives to detect improper installations or defects during the construction of improvements or during subsequent inspections does not relieve the Developer or Contractor of the responsibility to correct such defects at a later date. There shall be no partial acceptances of public improvements within new developments. All phasing of the public infrastructure shall be approved and determined prior to the start of construction. The security shall match to each approved Phase. The Developer or Contractor is fully responsible for maintenance and operation of any constructed public facilities until such time as the City formally accepts the public improvements or as outlined in the Subdivision Improvements Agreement (SIA) or other pertinent document or contract. The Developer or Contractor is responsible for a 2-year warranty of the public improvements constructed. The 2-year warranty starts with the signed and written Initial Acceptance.

The requirements contained herein shall apply to all new development and redevelopment and all other work affecting rights-of-way that are planned for public use within the jurisdiction of the City of Castle Pines.

These requirements may be enforced by stop work orders, and then if there are continued violations, work stoppage injunctions issued by the District Court pursuant to law or suit may be filed by the City Attorney for damages resulting to rights-of-way that are planned for public use as a result of noncompliance with these requirements.

13.2 General Policies

For City roads, sidewalk, and drainage public improvements required for a subdivision, the initial capital cost shall be paid by the Developer as well as operation and maintenance (O&M) through the warranty period until Final Acceptance. After Final Acceptance of the roads, the City will then provide a normal level of maintenance as available funds, staffing, and equipment permit. A normal level of maintenance consists of street sweeping, snow plowing, repair and cleaning of City-owned drainage structures, and general maintenance of the roadway in a condition deemed safe by the City Public Works Department.

The City will maintain only those roads, drainage improvements, and other public improvements specifically accepted for maintenance by the City Public Works Director and included in the SIA or relevant development or construction agreement.

Roadways shall not be opened to the general public until necessary permanent traffic control devices have been installed. Before a new roadway is accepted by the City, it shall be properly signed and striped according to the approved plans.

Prior to Initial Acceptance, all public improvements shall be completed as specified in the Improvement Agreement and on City-approved construction plans.

13.3 General Acceptance Process for Public Improvements

The Developer or Contractor shall be required to meet the following processes prior to the City's initial and Final Acceptance of the public improvements and any operations or maintenance.

13.3.1 Completion of Work

Completion of all Public Improvements required in the Public Improvements Construction Plans, specifications, and agreements in accordance with these Roadway Standards. The City shall approve plans prior to any construction work.

13.3.2 Written Request – Initial Acceptance

The Developer or Contractor shall notify the City Public Works Department, in writing, of the completion of the public infrastructure for the specific project. An Acceptance form, including all relevant checklist items is available by request to the City Public Works Department. The Developer or Contractor shall only make this request after all work is completed on the project. If the work is not completed when request is submitted, the City shall reject the request for acceptance until all work is completed.

13.3.3 Inspection and Creation of Deficiencies List

Storm drainage utilities shall be inspected throughout installation and upon completion of installation, and before paving operations, a deficiencies list shall be generated stating all discrepancies that relate to storm drainage utilities. After the completion of the utilities punch list, the remaining improvements can be completed. Water and sanitary sewer improvements shall be processed and approved by the applicable Water and Sanitation District prior to City approval for roadway work. Testing data in wet utility trenches is still required for acceptance if the utilities are located in the right-of-way.

Once the City has received a written request for acceptance, the certification of storm drainage detention and Record Drawings, the City Public Works Department will instruct a City Inspector to schedule an inspection of all required improvements. The Developer and/or Contractor will be invited to accompany the City's representative on all such inspections. The construction of public improvements will be inspected for conformance with the approved Public Improvement Construction Plans, the Official Development Plan (if applicable), the Public Improvements Agreement (if applicable), project specifications, these Roadway Standards, and Municipal Code. If the inspection cannot be performed as a result of excessive dirt or snow on streets, poor weather conditions, inaccessibility, or other reasons, the Developer or Contractor will be notified of the need to postpone these activities until the cause of the delay can be rectified. Deficiencies noted during the inspection will be compiled in a corrections list to be emailed or mailed to the Developer or Contractor for repair, replacement, or correction.

13.3.4 Correction of Deficiencies

Deficiencies list items shall be corrected within 60 days of the date this list is sent to the Developer or Contractor. If all noted deficiencies are not corrected within this time, the public improvements may be reinspected, and any new defects may be added to the deficiencies list. Public improvements will not be accepted until all noted deficiencies are corrected within the proper time frame. The City Inspector shall be notified before any corrective work commences and immediately upon the completion of the repairs. The City may require the Developer to pay for the additional consulting costs for walkthroughs and punch lists.

13.3.5 Record Drawings

A complete set of "as-constructed" drawings of the public improvements shall accompany the request for acceptance. The as-builts shall be surveyed and stamped by the surveyor and Engineer of Record and submitted prior to Initial Acceptance. Upon acceptance by the City, the Developer or Designer will be required to submit a certified set of electronic "as-constructed" drawings. The submittal shall include a PDF set and AutoCAD .dwg files. These drawings shall be prepared on 24-inch-by-36-inch sheets, and lettering should be no smaller than one-eighth inch. The City may request printed drawings at 11 inches by 17 inches. The text must be readable. At a minimum, Record Drawings shall indicate the horizontal or vertical layout of all underground water, sanitary sewer, and storm drainage facilities (including distances between valves, fittings, and manholes), profiles of streets, sanitary sewer mains and storm drainage mains, details of special or unusual installations, and detention pond volumes. The Designer shall GPS all points, including manholes, valves, inlets, and other pertinent infrastructure and provide the GPS data on Record Drawings. If significant corrections to the improvements are noted during the acceptance inspection, the Record Drawings may be returned to the Developer or Designer for revisions. The final submittal shall have each sheet of the Record Drawings signed and sealed by the Professional Engineer (PE) registered in the State of Colorado who is responsible for preparing the Record Drawings.

13.3.6 Certification of Storm Drainage Detention, Including Roadways

A land surveyor registered in the State of Colorado shall affirm the as-built detention pond volumes and surface areas at the design depths, outlet structure sizes and elevations, storm drainage sizes and invert elevations at inlets, manholes, discharge location, representative open-channel cross-sections, and dimensions of all drainage structures.

13.3.6.1 Certification

Roadway grades shall be considered part of the storm drainage system. Storm detention and permanent storm water quality Control Measures (best management practices [BMPs]) facilities must be certified after final landscaping is implemented. This certification is required before a certificate of occupancy will be issued for any private development or redevelopment, or before final payment on any public improvement project. A PE licensed in the State of Colorado shall certify the following:

- The detention pond and all permanent storm water quality Control Measures (BMPs) are built according to the approved plans and specifications.
- The required detention volume is met by the completed facilities.
- The surveyed elevations of critical design components, including inverts, of outlet structures geometry, overflow spillways or weirs, and freeboard reflect the final constructed values; the finished pond depths, storage volumes, and release rates are in substantial conformance with the approved design; and actual release rates conform to applicable regulatory agency rules and regulations Colorado Revised Statutes. The certification shall include a copy of the City's plan acceptance letter to assist City staff in their review of the certificate. Detention ponds used as sedimentation basins through a phased construction development shall also be required to have the detention facilities recertified prior to each phase of the development's final certificate of occupancy.

13.3.6.2 Standard Note

The following note shall appear next to each detention pond plan and permanent storm water quality BMP on the construction drawings:

"The developer shall have a Colorado licensed Professional Engineer certify each stormwater detention pond and/or water quality Control Measure is built according to the approved plans and specifications and the required detention volume, including the WQCV when used, is met. The certification shall also verify all pertinent dimensions, elevations, required outlet orifice plates for detention and WQCV and other permanent Control Measure requirements are installed per the approved plans and specifications, and shall show the as-built volumes for the 100-year and 10-year storm events, and for the WQCV and other pertinent dimensions, elevations and capacity requirements associated with the water quality Control Measure used. The certification shall be provided to the City of Castle Pines before a certificate of occupancy will be issued, or before final payment on public improvement projects."

13.3.6.3 Maintenance

The maintenance of permanent storm water facilities shall be performed by the property owner, or as otherwise designated by legal agreement. Maintenance operations shall be in accordance with the approved O&M manual for the project. Routine maintenance of permanent stormwater facilities shall include sediment and debris removal. Nonroutine maintenance may include the repair or replacement (or both) of outlet structures, trickle channel, outlet pipes, channel slopes, and other related facilities. When appropriate maintenance is not provided, the City may provide the necessary maintenance and shall assess the associated cost to the property owner. All permanent stormwater facilities, with or without retaining walls, shall be designed in accordance with the maintenance requirements as specified in the Mile High Flood District's Urban Storm Drainage Criteria Manual.

13.3.6.4 Storm System Improvements

The storm system improvements are evaluated after the submittal of the storm drainage plan and the drainage report.

- Maintenance: Permanent stormwater facilities must be properly maintained if they are to function as intended over a long period of time. The following types of maintenance tasks should be performed periodically so that permanent storm water facilities function properly:
 - Inspections: Permanent storm water facilities must continue to be inspected under the GESC Permit until final stabilization is achieved, the GESC Permit is closed, and the City has accepted the permanent storm water facilities as a Final Acceptance. After this occurs, the facility must be inspected on an annual basis. In addition, the City recommends that these facilities be inspected during and after major storm events to confirm that the inlet and outlet structures are still functioning as designed, and that no damage or clogging has occurred.
 - Mowing: Impoundments should be mowed at least twice a year to discourage woody growth and to control weeds.
 - Sediment, Debris and Litter Control: Accumulated sediment, debris, and litter should be removed from permanent storm water facilities at least twice a year. Particular attention should be given to removal of sediment, debris, and trash around outlet structures to prevent clogging of the control device.

- Nuisance Control: Standing water or soggy conditions within the lower stage of permanent storm water facilities can create nuisance conditions such as odors, insects, and weeds. Allowance for positive drainage during design will minimize these problems. Additional control can be provided by periodic inspection and debris removal, and by verifying that outlet structures are kept free of debris and trash.
- Structural Repairs and Replacement: Inlet and outlet devices, and standpipe or riser structures have been known to deteriorate with time and may have to be replaced. The actual life of a structural component will depend on individual site-specific criteria, such as soil conditions.
- Maintenance should be done as described in the Operations and Maintenance (O&M) Plan. O&M Plans are required to be submitted to the City.

13.3.6.5 Colorado Registered Professional Engineer

The responsible Designer shall state the following: "I have inspected the drainage facilities and to the best of my knowledge, belief, and opinion, the drainage facilities were constructed in accordance with the design intent of the approved drainage report and construction drawings."

13.3.7 Written Notice of Initial Acceptance

Upon completion of all items on the deficiencies list and payment of all outstanding fees, reimbursements, and other items owed to the City, the City Public Works Department will issue a written Initial Acceptance of the Public Improvements and start the warranty period. No Initial Acceptance will be issued unless all public improvements required on plans and in the SIA or relevant agreement are complete and accepted, including detached walk.

The City shall hold the specific surety percentage as defined in the site agreement after Initial Acceptance and prior to the 2-year warranty period.

13.3.8 Warranty Period

The City requires a minimum 2-year warranty.

13.3.9 Inspection Prior to End of Warranty Period

After the Developer or Contractor has submitted a written request for Final Acceptance, a new deficiency list shall be developed by, and provided to, the Developer or Contractor for appropriate replacement or repair.

13.3.10 Written Notification of Release and Final Acceptance

When the warranty period is concluded, and all defects in workmanship or material are completed, the City will issue a Final Acceptance Letter to the Developer or Contractor.

13.3.11 Release of Surety and Contractor Responsibilities

With the completion of all deficiency lists, appropriate notifications, and inspections, the surety will be released signifying all responsibility of the Developer or Contractor for repairs and maintenance is completed.

13.4 Initial Acceptance

13.4.1 Request a Preliminary Walk-through Acceptance

Once improvements (streets or drainage) that are covered by a valid City permit, designed in the accepted construction plans, and detailed in the SIA, development agreement, or approved plans are constructed to City standards, the Owner or Developer shall request in writing a Preliminary Walk-through Acceptance inspection for an entire phase or multiple phases.

13.4.2 Request for Warranty Acceptance

After the Preliminary Walk-through Acceptance has been completed and any deficiencies repaired, the Owner or Developer shall submit a completed and signed "Request for Warranty Acceptance" form to the City Public Works Director requesting Initial Acceptance. The request shall acknowledge that the Owner or Developer has fulfilled the subdivision improvement agreement requirements on the extent of public improvements. The request shall be accompanied by a Vicinity Map, which should show access to the filing or phase from the nearest arterial roadway. The roads included in the request must be highlighted on the map, and street names must be legible. The Applicant's Developer or Engineer shall provide a map of the phasing to be reviewed.

13.4.3 Phasing

It is the City's practice to accept all the improvements for a subdivision at one time or by completed phases (phases shall be shown on all construction drawings to confirm complete loops in each phase). If the Owner or Developer desires partial acceptance of subdivision public improvements, a request for such partial acceptance should precede the request. The partial acceptance request should define and justify the partial acceptance schedule and explain the circumstances of the partial acceptance request. Such requests shall be considered by the City Public Works Department on a case-by-case basis. The developer shall submit a partial acceptance letter. The City will require the security to be changed and divided by each partial phase.

13.4.4 Independent Test Verification

Included with the acceptance request shall be independent test verification by a registered PE. Such verification shall consist of acceptable destructive or nondestructive tests. The frequency and results need to conform to City requirements. An evaluation report based on those tests is required to substantiate compliance with the accepted plans and that the expected life of the roadway structure is at least 20 years, based on normal surface maintenance being provided by the City.

13.4.5 Consideration of Exceptions

If the Applicant's engineer cannot verify substantial compliance with the accepted construction plans, a list of changes or exceptions to the plans shall be provided for consideration of acceptance by the City Public Works Director. These must be documented by submitting record drawings with the list of changes or exceptions.

13.4.6 Profilograph

Included with the acceptance request shall be a profilograph of all Arterial and Collector roadways constructed with the project. Profilograph tests shall be made for each driving lane.

13.4.7 Developer Responsibilities

Until Final Acceptance by the City of the subdivision improvements, the Developer shall, at the Developer's expense, make all needed repairs or replacements to the subdivision improvements required on account of defects in materials or workmanship and shall be responsible for ordinary repairs and maintenance thereof, including street sanding, snow removal, and cleaning. Subsequent to Initial Acceptance and subject to accessibility, the City may elect to relieve the Developer of traffic signage and snow removal responsibility.

- 1) Traffic control devices, either temporary or permanent, as accepted on the construction plans, must be installed before the City will accept the improvements.
- 2) The City will not be responsible for installation or maintenance of any barricades or warning signs required to protect the public as a result of construction phasing.
- 3) During the warranty period, the Developer shall be responsible for all corrective or preventative maintenance as requested by the City in writing, so that all improvements are in-place for as much of the preliminary warranty period as possible. Such maintenance shall commence within 30 calendar days after receipt of said written request (weather permitting).

13.4.8 Acceptance Inspection

Upon completion of each phase of improvements, the Owner or Developer shall request Preliminary Walk-through Acceptance of the completed public improvements. The City will inspect the improvements within 10 working days after request, and if the improvements are in substantial compliance with the accepted plans, accept such improvements. The Owner or Developer shall be responsible for assuring that all the improvements are in good repair and are generally in an acceptable condition for a thorough visual inspection. If improvements are deemed by the City not to be in acceptable condition for a visual inspection, the Owner or Developer shall request an additional inspection within 10 working days. After 10 days, the City will require additional payment for the added inspection requirements.

Any changes to the inspection date requested by the Owner or Developer shall be received no less than 3 working days prior to a scheduled inspection. Notice may be written or verbal.

13.4.9 Notification of Deficiencies

At the time of or within 10 working days following an acceptance inspection, the Owner or Developer shall provide the City with a written list of deficiencies (punch list) for the improvements. The City will review the punch list and confirm accuracy. These punch list items must be rectified by the Owner or Developer as a condition of the City's granting Initial Acceptance. The Owner or Developer shall obtain the necessary Permits prior to commencing the remedial work. The first Permit for punch list items will be issued at no cost and be valid for 60 calendar days. In the event the punch list items are not complete within 60 calendar days, an additional Permit(s) will be required to be purchased at the current minimum fee or the normal cost of remaining items to be constructed (whichever is greater) according to the current City Fee Schedule. If the Owner or Developer wishes to request weather days during this 60-calendar-day period, they will provide the City Public Works Department with a written request, including justifications as to why weather days are required. The City Public Works Director has the sole authority to allow or disallow weather days during this period.

13.4.10 Reinspections

When the Owner or Developer completes the repairs according to the deficiency list previously provided, a reinspection shall be scheduled through the City Public Works Department. If inadequate repairs are observed or site conditions do not allow a visual inspection, the City may terminate the reinspection, at which point the Owner or Developer shall take corrective measures to address the City's comments and reschedule a new reinspection.

13.4.11 Recommendation for Initial Acceptance

The City Inspector shall recommend granting or denying Initial Acceptance based on reinspection for compliance to the written deficiency list, previously provided to the Developer or Contractor.

13.4.12 Initial Acceptance Letter

The City Public Works Department shall issue a letter to the Developer or Contractor within 10 days of acceptance reinspection. The Initial Acceptance letter shall specify the date on which the Contractor is eligible to request Final Acceptance. Because of potential non-conformance issues, such as as-built elevation discrepancies, the release of building Permits will be on the "at-risk" basis of the Builder until the Developer or Contractor has achieved Initial Acceptance.

13.4.13 Adjustment of Collateral

Upon written notification of Initial Acceptance, the collateral for Public Improvements in Development projects may be reduced to the percentage required by the City during the warranty period of the total required collateral for the project.

13.4.14 Acceptance Denied

If acceptance is denied, deficiencies shall be explicitly delineated for the Owner or Developer to remedy and schedule a reinspection.

13.4.15 Denial of Initial Acceptance

A request for Initial Acceptance of subdivision improvements for which such acceptance has been previously denied by the City shall be treated as a new request for acceptance.

13.4.16 Adjustment of Retainage for Contractor

Upon written notification of substantial completion, the retainage for the project may be reduced to the percentage acceptable to the City and in accordance with the specific contract.

13.5 Warranty Period

13.5.1 Duration

All public improvements shall be subject to a warranty period of at least 2 years after the date of the letter of Initial Acceptance from the City Public Works Department. It starts at Initial Acceptance and ends with the Final Acceptance of the Public Improvements. If the Developer or Contractor requests and is granted an extension to repair deficiencies, the surety and deficiencies list will remain in place for that additional period of time.

13.5.2 Maintenance Responsibility

The Developer or Contractor shall be responsible for the maintenance of all public improvements, in accordance with the contract, during the warranty period. The City Public Works Department will notify the Developer or Contractor of any maintenance that may be necessary during this time. Routine maintenance normally performed by the Developer or Contractor includes, but shall not be limited to, cleaning streets, snow removal, patching potholes, and removing blockages from water, storm, and sanitary sewer facilities. The cost of any routine maintenance not performed by the Developer that must be performed by the City will be billed to the Developer at cost plus 15% and, if applicable, the requirements of the SIA or relevant agreement. If the Developer does not pay for these costs within 60 days, the City may pull the surety to recover costs.

13.5.3 Emergency Repairs

In the event of a water main break, sanitary sewer main blockage, street or bridge failure, or other emergency that may occur during the warranty period, it may become necessary for the City to undertake immediate repairs to the facilities and make the area safe to residents, pedestrians, or motorists. The City will attempt to contact the Developer or Contractor in the event of such emergency. However, if the Developer or their representative cannot be contacted quickly, or if the Developer or Contractor is unable to take immediate action to relieve the urgent situation, the City may proceed with such action as deemed necessary by the City Public Works Department, and the Developer or Contractor will be billed for all costs of these actions at cost plus 15%.

13.6 Final Acceptance of Public Improvements

13.6.1 Request for Preliminary Inspection

No sooner than 60 days prior to the completion of the 2-year or other warranty period within a phase or phases of the project, the Owner or Developer shall make a written request with the City Public Works Department for a site inspection. The Owner or Developer is responsible for having the public improvements clean and free of debris at the time of the inspection. Failure to do so shall require rescheduling the inspection. Rescheduling will be treated as a new inspection, not a reinspection.

13.6.2 Punch List

During the field inspection, a punch list of items requiring remedial action will be prepared. The punch list shall be issued to the City by the Owner or Developer within 10 working days of completing the inspection.

13.6.3 Permits

The Owner or Developer shall obtain the necessary Permits prior to commencing the remedial work. The first Permit for punch list items will be issued at no cost and will be valid for 60 days. In the event the punch list items are not complete within 60 days, an additional Permit(s) will be required.

13.6.4 Final Inspection Request

Upon completion of all remedial work, the Owner or Developer shall request a Final Inspection with the City Public Works Department.

13.6.5 Request for Full-Term Maintenance

Upon satisfactory completion of the Final Inspection and the 2-year warranty period, as outlined in the Initial Acceptance Process, the Owner or Developer shall submit a completed and signed "Request for Final Acceptance" form to the City Public Works Department requesting Final Acceptance. A City Public Works Department representative shall accept the request for Full-Term Maintenance within 10 working days.

13.6.6 Release Warranty Security

Once Final Acceptance has been obtained by the Owner or Developer of any phase or phases of the project, any warranty security held by the City for said phase or phases will be released to the Owner or Developer.

13.6.7 Winter Work

In the event of a winter Final Acceptance date, it would be acceptable to the City to make a request to the City Public Works Department for inspection of any phase or phases of a project earlier than 90 days prior to the expiration date of the 2-year warranty period. Each request will be considered by the City Public Works Department on a case-by-case basis.

13.6.8 Acceptance of Roadways by a Special District or Other Quasigovernmental Agency to be Accepted by the City of Castle Pines

When a District or Agency constructs a roadway, the City will require both the Preliminary and Final Acceptance walk-throughs, the execution of the punch lists, and the completion of all repairs before the end of the 2-year warranty period. This will allow repairs and corrections to the construction (as specified in these Roadway Standards) to take place before the performance bond is released to the contractor by the District or Agency.

13.6.9 Preparation of Corrections List

The City Public Works Department will be contacted to schedule and perform an inspection of the public improvements within the project limits. The Developer, or their representative, or Contractor will be invited to accompany the City's representative on all such inspections. The Owner or Developer shall provide the punch list of repairs and deficiencies and deliver the list to the City to confirm accuracy. The City will provide an opportunity for an optional meeting to discuss issues. The condition of the public improvements will be inspected for conformance with the accepted plans, the Official Development Plan (if applicable), the Public Improvements Agreement (if applicable), these Roadway Standards, and Municipal Code. If the inspection cannot be performed as a result of excessive dirt or snow on streets, poor weather conditions, inaccessibility, or other reasons, the Developer or Contractor will be notified of the need to postpone these activities until the cause of the delay can be rectified.

13.6.10 Correction of Deficiencies

Warranty correction list items should be corrected within 2 months of the date of the warranty correction list, unless authorized by the City Public Works Department. If all noted deficiencies are not corrected within this time, the public improvements may be reinspected, a revised correction list may be issued, and the end of the warranty period may be adjusted at the discretion of the City Public Works Department to allow ample time for the corrections to be completed. The end of the warranty period will not be acknowledged until all noted deficiencies are corrected within the proper time frame. The appropriate

Engineering Construction Inspector shall be notified before any corrective work commences and immediately upon the completion of the repairs.

13.6.11 Written Acknowledgment of End of Warranty

Upon completion of the correction of all deficiencies noted in the warranty correction list, the City Public Works Department will issue a written acknowledgment of the end of the warranty period for the public improvements. Surety or warranty bond for public improvements may be released in its entirety at this time.

13.7 Acceptance/Warranty Inspection Criteria

13.7.1 General

All public and private improvements shall be installed in conformance with the approved Public Improvements Construction plans, the Official Development Plan (if applicable), the Public Improvements Agreement (if applicable), construction agreement (if applicable), and these Roadway Standards. The City Public Works Department shall be the final authority in the determination of defects and required corrections to public and private improvements. The following lists of items is not necessarily the entire list of items to be checked in the inspection process.

13.7.2 Grading and Seeding

Finished grades shall conform with the approved plans and the official Development Plan. Detention pond grading shall provide, at a minimum, the required volume as defined in the approved final drainage study. Unless otherwise approved, no slopes shall exceed a grade of 4 (horizontal) to 1 (vertical) (4:1). Approved seed mix shall be applied (unless other landscape improvement materials are approved), and grass shall be established in conformance with *Earthwork and Erosion Control* and *Revegetation and Seeding* in the GESC Standards.

13.7.3 Water Systems

The required inspection and testing of sanitary sewer mains and appurtenances (including backfill) shall be performed and accepted prior to the installation of the roadway, curb, sidewalk, trails, traffic infrastructure, and storm drainage. Refer to the requirements of the appropriate Water or Sanitary Sewer District. Separately, the City shall require the Developer or Contractor to submit the plan and profile sheets (electronically) with the mapping of all compaction test locations and results for the City review to confirm compliance with the frequency of testing requirements and the sufficiency of those tests. The City is not responsible for reviewing test frequency or conformance to Standards prior to Initial or Final Acceptance.

13.7.4 Sanitary Sewer Systems

The required inspection and testing of sanitary sewer mains and appurtenances shall be performed before the installation of surface public improvements (including roadway, curb, sidewalk, trails, traffic infrastructure, and storm drainage). Refer to the requirements of the appropriate Water or Sanitary Sewer District. Separately, the City shall require the Developer or Contractor to submit the plan and profile sheets (electronically) with the mapping of all compaction test locations and results for the City review to confirm compliance with the frequency of testing requirements and the sufficiency of those tests. The City is not responsible for reviewing test frequency or conformance to Standards prior to Initial or Final Acceptance.

13.7.5 Storm Drainage System

The required inspection and testing of storm drainage mains and appurtenances that shall be performed are outlined in the *Storm Drainage & Other Concrete Facilities* section of the City's Drainage Standards. The City shall require the Developer or Contractor to submit the plan and profile sheets (electronically) with the mapping of all compaction test locations and results for the City review to confirm compliance with the frequency of testing requirements and the sufficiency of those tests. The City is not responsible for reviewing test frequency or conformance to Standards prior to Initial or Final Acceptance.

At the time of acceptance and warranty inspections of all public improvements, additional aspects of storm drainage system construction that shall be inspected include, but shall not be limited to, the following:

- All pipes and manholes shall be free of construction debris, dirt, trash, and other foreign material.
- The Contractor's video inspection of all storm drainage mains shall be completed prior to the acceptance of public and private improvements.
- Manholes rims and covers shall be adjusted to within one-fourth inch below grade in paved areas, or 1 inch above grade in landscaped areas.
- Manhole steps shall be properly spaced and aligned.
- Inlets shall be properly aligned to within one-eighth inch below grade next to sidewalk or curb and gutter.

13.7.6 Concrete

The required inspection and testing of concrete that shall be performed is outlined in Chapter 12, Inspection and Testing Procedures, of these Roadway Standards. At the time of acceptance and warranty inspection of all public improvements, the aspects of concrete construction that shall be inspected include, but shall not be limited to, the following:

- Breakage or cracking greater than 1/32 of an inch at locations other than construction joints
- Ponding of any size
- Settlement affecting drainage, pedestrian, or traffic safety
- Surface spalling or deterioration
- Longitudinal cracking
- Subsurface settlement

13.7.7 Roadway Inspection Criteria

The required inspection and testing of roadways that shall be performed is outlined in Chapter 12, Inspection and Testing Procedures, of these Roadway Standards. At the time of acceptance and warranty inspection of all public improvements, the aspects of roadway construction that shall be inspected include, but shall not be limited to, the following:

- Breakage or cracking greater than one-eighth inch
- Ponding of any size
- Settlement affecting drainage, pedestrian, or traffic safety
- Surface segregation of fines or aggregate
- Hazardous conditions
- Alligator cracking
- Improper grade or inverted crown
- Subsurface settlement

13.8 Record Drawing Criteria

Record Drawings shall be submitted to the City Public Works Department for all improvements constructed under the terms of the SIA, SIPIA, SIA-Private, or under the conditions specified by the Planning Commission or City Council in accepting any other land use changes, or under the terms of a Service Plan and accepted construction plan for a Metropolitan Improvement District.

13.8.1 Other Requirements

Record Drawings must accompany the request for Initial Acceptance of the constructed public or private improvements.

13.8.2 City Records

Record Drawings shall consist of full-size, electronic marked-up City of Castle Pines accepted plans with the Registered Colorado PE's signed and stamped certification note and the Registered Colorado Professional Land Surveyor certification.

13.8.3 Engineer and Surveyor Statement Requirements

Engineer's and Surveyor's Statements of Substantial Compliance of the Record drawings is required on the cover sheet only and as follows:

- 1) Registered Colorado Professional Engineer: The responsible PE for the project shall state the following: "Based upon review of, and reliance on, the field survey data and other pertinent data provided by (Name of Firm(s) or Surveyor), on (Date), and a final site investigation conducted on (Date), I hereby state that to the best of my knowledge, information, and belief, it is my professional opinion that the facilities shown in these drawings were constructed in substantial compliance with the accepted Drainage Report and/or Construction Drawings and the Engineer's intent. This statement is based only on a review of the field survey data and a final site investigation."
- 2) Registered Colorado Professional Land Surveyor: A registered land surveyor in the State of Colorado shall certify the record of permanent stormwater facilities volumes at the design depths, outlet structure sizes and elevations, storm sewer sizes and invert elevations at inlets, manholes and discharge locations, representative open-channel cross-sections, and dimensions of all the drainage structures. The surveyor shall also state the following: "A Record Drawing field survey was conducted by (Surveyor), on (Dates). All items noted on these drawings with an "RD" indicate Record Drawing information based on said survey. Unless explicitly marked with an "RD," constructed condition should not be assumed. I, (Surveyor), hereby state that in my professional opinion, the Record Drawing information shown on these plans accurately represents the improvements constructed."

13.8.4 City Review

The City Public Works Department staff will compare the certified Record Drawing information with the accepted construction drawings. Acceptance for the public improvements will be issued only if the following occurs:

- 1) The Record Drawing information demonstrates that the construction complies with the design intent.
- 2) The Record Drawings are certified by both a Registered Colorado PE and a Registered Colorado Professional Land Surveyor.

13.8.5 Record Drawing Data Requirements

Record Drawings shall show the following Information:

- 1) Record Drawings for roadways shall verify centerline and flowline location and elevation at high points, low points, vertical grade breaks and curves, all points of horizontal curvature, curb returns, surface utilities and structures, right-of-way monuments and curb ramp locations.
- 2) Record Drawings for storm sewers shall verify the size and elevation of all pipes (including pipe class), inlets, riprap, headwalls, and all other storm drainage infrastructure shown on the accepted plans, including those improvements located in areas outside of public rights-of-way.
- 3) Record Drawings for open channels shall verify all drainageway grades and channel shape, horizontal and vertical information for grade control structures and stabilization measures, storm sewer outfalls if not shown on the storm sewer Record Drawings, and maintenance access.
- 4) Record Drawings for permanent storm water facilities shall verify horizontal and vertical information of all facilities, including locations of low-flow or trickle channels, outlet structure, emergency overflow spillway, pipe or channel inlets, water surface limits, and maintenance access.
- 5) Record Drawings for permanent storm water facilities shall verify horizontal and vertical information of the facility, water surface limits, and maintenance access.
- 6) Record Drawings for signage and striping plan sheets shall verify the type, size, and location of all signage and striping shown on the accepted plans.
- 7) Record Drawings for Traffic Signal Plan sheets shall verify the type, size, and location of all traffic signal devices shown on the accepted plans.
- 8) Record Drawings for Landscape Plan sheets shall verify locations of trees, monuments, planters, drainage improvements, and trench drains shown on the accepted plans.
- 9) Record Drawings shall verify other information as specifically requested by the City Public Works Department, and as identified on the accepted plans.

13.8.6 Electronic Record information

- 1) The Engineer shall submit electronic record information of all pipes, manholes, inlets, riprap pads, headwalls, and all other storm drainage infrastructure, including inverts shown on the accepted plans, including those improvements located in areas outside of public rights-of-way, to the City in "DWG" or "DXF" format prior to receiving Initial Acceptance.
- 2) The City reserves the right to request additional electronic record information in DWG and GIS formats. The City will provide the Owner or Developer a written request for additional electronic Record information, including preferred formats, prior to initial acceptance.
- 3) All electronic record information shall be provided with the corresponding survey control data.