4.0 Introduction

The requirements presented in this section shall be used to aid the design engineer or applicant in the preparation of drainage reports, drainage studies, and construction drawings for stormwater management facilities. The requirements presented are the minimum necessary and will be used to evaluate the adequacy of all submittals to the Town.

4.1 Review Process

4.1.1 Drainage Report Requirements. Drainage Report submittal requirements related to the type of development or land use proposals are generally outlined in Table 4-1. Three copies of the Drainage Report shall be submitted for all proposals. In any case, additional copies of the Drainage Report may be requested by the Town. The report shall include a cover letter stating the type of report submitted (e.g., Master, Phase I, Phase II, or Phase III) and for what purpose the report has been prepared. Templates for the Phase I, Phase II and Phase III Drainage Reports can be found on the Town’s website at www.crgov.com. Checklists are required with every Drainage Report submittal; see Section 4.4.5 of these Criteria for additional information regarding checklists.

4.1.2 Stand-Alone Document. The Drainage Report shall be a stand-alone document. When references are made or assumptions are based on previously submitted studies or reports, the Drainage Report must include the appropriate excerpts, pages, tables, and maps containing the referenced information. Assumptions made in previous reports must be verified and substantiated in all new reports. All submitted reports shall be legible. If reports are unreadable, resubmittal of readable copies shall be required.

4.1.3 Submittal Adequacy. Submittals with incomplete or absent information shall result in the report being returned to the author without review. The Town reserves the right to require additional information with any submittal.

4.1.4 Pre-application Consultation. A pre-application consultation with Engineering Staff is required for all applicants undertaking any land development processing steps presented either herein or in the Regulations. The applicant shall consult with the Town for general information regarding the Regulations, required procedures, possible drainage problems, and specific submittal requirements.

4.1.5 Review by Referral Agencies. The review and approval by other agencies such as State or Federal agencies, affected jurisdictions, and other referral agencies may be required for some submittals. The applicant shall be required to address referral agency comments and obtain approvals when necessary.
Chapter 4. Drainage Report and Construction Drawing Submittal Requirements

### TABLE 4-1
DRAINAGE REPORT SUBMITTAL REQUIREMENTS

<table>
<thead>
<tr>
<th>SUBMITTAL TYPE</th>
<th>DRAINAGE SUBMITTAL REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ZONING</strong></td>
<td></td>
</tr>
<tr>
<td>Preliminary PD</td>
<td>Phase I Drainage Report</td>
</tr>
<tr>
<td>Final PD Site Plan/BP Site Plan</td>
<td>Phase III Drainage Report including floodplain analysis, if applicable.</td>
</tr>
<tr>
<td><strong>SUBDIVISION</strong></td>
<td></td>
</tr>
<tr>
<td>Preliminary Plat</td>
<td>Phase I Drainage Report or approved Master Plan of Drainage</td>
</tr>
<tr>
<td>Final Plat</td>
<td>Phase II Drainage Report</td>
</tr>
</tbody>
</table>

**NOTE:** The Drainage Report submittal requirements as outlined in this Table are general guidelines and do not represent all circumstances under which specific drainage submittals may be required. Prior to submittal, the applicant shall consult with Development Services and the Utilities Department for submittal requirements regarding applications or processes not addressed in this Table.

### 4.2 Acceptance

#### 4.2.1 Phase III Drainage Report Acceptance Required for Construction

The acceptance of a Phase III Drainage Report and construction drawings must be obtained prior to construction of any drainage improvements within the Town. Phase I and Phase II drainage studies are conceptual and are reviewed by the Town, but cannot be used for construction.

#### 4.2.2 Permanent Best Management Practices Plan Required Prior to Land Disturbance

The Phase III Drainage Report and Plan must be reviewed and accepted by the Town prior to the issuance of a GESC Permit for land disturbance activities. This requirement will not apply to proposed land disturbance activities or projects where post construction, permanent, water quality enhancement Best Management Practices are not required, as described in Chapter 14 Stormwater Quality, or as determined by the Town.

#### 4.2.3 One Year Acceptance for Phase III Drainage Reports

Phase III Drainage Reports will be valid for one year from the date of Town acceptance. If the improvements on the construction drawings have not been constructed and accepted by the Town, or extended in conformance with the Town of Castle Rock Public Works Regulations, within one year of the Drainage Report acceptance, the Phase III Drainage Report must be submitted for re-acceptance. In order to be re-accepted, it must be demonstrated that the concepts, designs, and calculations presented in the report are consistent with current Town criteria and standards. If new concepts, criteria, or standards have been adopted since the Drainage Report was accepted and then expired, submittal of an updated Phase III Drainage Report will be required. The updated Phase III Drainage Report must be accepted by the Town and that report will provide the foundation for development of the construction drawings. Phase I, Phase II, and Master Plan of
Drainage studies are not formally accepted, and therefore not affected by the one year acceptance period.

4.3 Phase I Drainage Report and Plan

4.3.1 Requirement for Phase I Drainage Report and Plan Submittal. Submittal of a Phase I Drainage Report and Plan is required with specific development or land use proposals, as generally outlined in Table 4-1. The Phase I report will describe, at a conceptual level, the feasibility and design characteristics of stormwater management facilities within the proposed development. The Phase I report shall be prepared on 8½” x 11” paper and bound. The drawings, figures, and tables shall be bound with the report or included in a pocket attached to the report. The report shall include a cover letter presenting the preliminary design for review and shall be certified by a Professional Engineer licensed in Colorado and shall be in accordance with the information presented in the following section.

4.3.2 Report Contents. The following is an outline of the minimum Phase I Drainage Report requirements:

I. COVER SHEET
   A. Name of Project
   B. Address
   C. Owner
   D. Developer
   E. Engineer
   F. Submittal date and revision dates as applicable

II. GENERAL LOCATION AND DESCRIPTION
   A. Site Location
      1. Site Vicinity Map
      2. Township, Range, Section, and ¼ Section
      3. Streets, Roadways, and Highways adjacent to the proposed development, or within the area served by the proposed drainage improvements
      4. Names of surrounding or adjacent developments
   B. Description of Property
      1. Area in Acres
      2. Ground cover, vegetation, site topography and slopes
      3. Natural Resources Conservation Service (NRCS) Soils Classification Map and discussion
      4. Major and minor drainageways
      5. Floodplains delineated by Town FHAD Studies or on FEMA FIRM Maps
      6. Existing irrigation canals or ditches
Chapter 4. Drainage Report and Construction Drawing Submittal Requirements

7. Significant geologic features
8. Proposed land use

III. DRAINAGE BASINS AND SUB-BASINS

A. Major Drainage Basins
   1. On-site and off-site major drainage basin characteristics and flow patterns and paths
   2. Existing and proposed land uses within the basin if known
   3. Reference all drainageway planning or floodplain delineation studies that affect the major drainageways, such as FHAD Studies and Master Planning Studies
   4. Discussion of the impacts of the off-site flow patterns and paths, under fully developed conditions

B. Minor Drainage Basins
   1. On-site and off-site minor drainage basin characteristics and flow patterns and paths
   2. Existing and proposed land uses within the basins
   3. Discussion of the impacts of the off-site flow patterns and paths, under fully developed conditions

IV. EXISTING STORMWATER CONVEYANCE OR STORAGE FACILITIES

A. Existing Stormwater Conveyance Facilities
   1. Existing conveyance facilities that will be incorporated into the design
   2. Existing conveyance facilities that will be incorporated into the design with modifications
   3. Existing conveyance facilities that will be rebuilt or abandoned

B. Existing Stormwater Storage Facilities
   1. Existing storage facilities that will be incorporated into the design
   2. Existing storage facilities that will be incorporated into the design with modification
   3. Existing storage facilities that will be rebuilt or abandoned

V. PROPOSED STORMWATER CONVEYANCE OR STORAGE FACILITIES

A. Proposed Stormwater Conveyance Facilities
   1. Conceptual discussion of proposed drainage patterns and difference(s) from historic patterns
   2. Conveyance of off-site runoff
   3. Discuss the content of any pertinent tables, charts, figures, graphs, drawings, etc. that are presented in the report
   4. Discussion of anticipated conveyance problems and potential solutions
Chapter 4. Drainage Report and Construction Drawing Submittal Requirements

5. Discuss the maintenance and access aspects of the design

B. Proposed Stormwater Storage Facilities
   1. Detention storage locations and conceptual outlet structure design
   2. Discuss anticipated storage problems and potential solutions
   3. Discuss the maintenance and access aspects of the design

VI. WATER QUALITY ENHANCEMENT BEST MANAGEMENT PRACTICES

A. Non-structural Best Management Practices
   1. Discussion of non-structural Best Management Practices that will be part of the stormwater management plan

B. Structural Best Management Practices
   1. Discuss structural Best Management Practices that will be part of the stormwater management design
   2. Discuss the operation, maintenance, and access aspects of the design

VII. FLOODPLAIN MODIFICATIONS – (for additional information on floodplain modification see Chapter 5)

A. Major Drainageway – Undesignated Floodplain
   1. Discuss potential modifications of existing major drainageway floodplains
   2. Discuss why the floodplain modifications are proposed

B. Major Drainageway – Designated Floodplain
   1. Discuss potential modifications of existing major drainageway floodplains that have a designated floodplain
   2. Discuss the source of the floodplain information and level of detail (Flood Hazard Area Delineation or FEMA Flood Insurance Rate Maps)
   3. Discuss why the floodplain modifications are proposed
   4. Discuss Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) requirements
   5. Discuss Town floodplain development regulations

VIII. POTENTIAL PERMITTING REQUIREMENTS

Identify other potential local, State and Federal permitting requirements

VIII. REFERENCES

Reference all criteria, master plans, reports, or other technical information used in development of the concepts discussed in the Drainage Report
4.3.3 Phase I Drainage Plan Requirements. The following is an outline of the minimum Phase I drainage plan requirements. All plans must be bound.

I. OVERALL DRAINAGE PLAN

A. 24”x36” or 22”x34” are acceptable plan sizes
B. Title block and legend
C. Existing or proposed streets, roadways, or highways
D. Show the limits of all major basins, including off-site basins where feasible
E. General drainage patterns and flow paths, including those entering and leaving the site
F. Topographic information with a 5-foot maximum contour interval
G. Identify existing stormwater management facilities, upstream, downstream, or within the site, which will provide a stormwater management function for the site
H. Overlay or figure showing layout of detailed drainage plan sheets if more than one detail drainage plan sheet is required

II. DETAILED DRAINAGE PLANS

A. 24”x36” or “22”x34” are acceptable plan sizes
B. Title block and legend
C. Scale 1”=20’ to 1”=100’, as required to show sufficient detail
D. Existing topographic contours with a 5-foot maximum contour interval
E. Existing stormwater conveyance or storage facilities
F. Floodplain limits, based on available information
G. Major drainage basin boundaries
H. Conceptual locations of stormwater conveyance or storage facilities, including detention ponds, water quality enhancement features, storm sewers, culverts, swales, etc., consistent with the proposed development plan
I. Proposed flow directions
J. Proposed contours, if they are available

4.4 Phase II Drainage Report and Plan

4.4.1 Requirement for Phase II Drainage Report and Plan Submittal. Submittal of a Phase II Drainage Report and Plan is required with specific development or land use proposals, as generally outlined in Table 4-1. The purpose of the Phase II Drainage Report is to identify and refine conceptual stormwater management solutions to the challenges that may be present or occur on-site and off-site. All reports shall be prepared on 8-1/2”x11” paper and shall be bound. The drawings, figures, and tables shall be bound with the report or
Chapter 4. Drainage Report and Construction Drawing Submittal Requirements

included in a pocket attached to the report. The report shall include a cover letter presenting the preliminary design for review and shall be certified by a Professional Engineer licensed in Colorado.

Report Contents. The Phase II Drainage Report generally consists of a narrative portion and appendices with supporting calculations and other pertinent information. The narrative shall lead the reader logically through the entire analysis and design process and provide a clear picture of all stormwater management issues. The narrative portion shall provide detailed discussion regarding the general location and description of the site, off-site and on-site drainage basins and sub-basins, drainage design criteria, stormwater management facility design, and conclusions, as provided in Sections III through VI of the outline presented in this section. Discussion of methodology, assumptions, input, and a summary of results shall be provided in the narrative for all hydrologic or hydraulic modeling efforts. Peak flow rates, storage volumes, critical water surface elevations, and stormwater management facility sizes shall also be summarized or discussed in the report narrative. The appendices must provide the appropriate backup information and calculations, but the reader should not have to review information contained in the appendices to have a clear and thorough understanding of the project and the stormwater management analysis and facility designs.

The following is an outline of the minimum Phase II Drainage Report requirements:

I. COVER SHEET
   A. Name of Project
   B. Address
   C. Owner
   D. Developer
   E. Engineer
   F. Submittal date and revision dates as applicable

II. GENERAL LOCATION AND DESCRIPTION
   A. Site Location
      1. Site Vicinity Map
      2. Township, Range, Section, and ¼ Section
      3. Existing and proposed streets, roadways, and highways adjacent to and within the proposed development, or within the area served by the proposed drainage improvements
      4. Names of surrounding or adjacent developments, including land use or zoning information
   
   B. Description of Property
      1. Area in Acres
      2. Ground cover, vegetation, site topography and slopes
Chapter 4. Drainage Report and Construction Drawing Submittal Requirements

3. NRCS Soils Classification Map and discussion
4. Major and minor drainageways
5. Floodplains delineated by FHAD studies or on FEMA FIRM Maps
6. Existing irrigation canals or ditches
7. Significant geologic features
8. Proposed land use

III. DRAINAGE BASINS AND SUB-BASINS

A. Major Drainage Basins
1. On-site and off-site major drainage basin characteristics and flow patterns and paths
2. Existing and proposed land uses within the basins if known
3. Discussion of all drainageway planning or floodplain delineation studies that affect the major drainageways, such as FHAD Studies and Master Planning studies
4. Discussion of the condition of any channel within or adjacent to the development, including existing conditions, need for improvements, and impact on the proposed development
5. Discussion of the impacts of the off-site flow patterns and paths, under fully developed conditions

B. Minor Drainage Basins
1. On-site and off-site minor drainage basin characteristics and flow patterns and paths under historic and developed conditions
2. Existing and proposed land uses within the basins
3. Discussion of irrigation facilities that will influence or be impacted by the site drainage
4. Discussion of the impacts of the off-site flow patterns and paths, under fully developed conditions

IV. DRAINAGE DESIGN CRITERIA

A. Regulations
1. Town criteria and optional provisions selected, when applicable
2. UDFCD Manual criteria and optional provisions selected, when applicable

B. Drainage Studies, Master Plans, Site Constraints
1. Discuss previous drainage studies or master plans for the site or project that influence the stormwater facility design
2. Discuss drainage studies for adjacent developments and how those developments affect the stormwater facility design
3. Discuss Town Master Plans and how recommendations in those studies affect the design
4. Discuss impacts to stormwater management facility design caused by site constraints, such as streets, utilities, rapid transit, existing structures, etc
Chapter 4. Drainage Report and Construction Drawing Submittal Requirements

C. Hydrology
1. Runoff calculation method(s)
2. Design storm recurrence intervals
3. Design rainfall
4. Detention storage calculation method(s)
5. Detention storage release rate calculation method

D. Hydraulics
1. Methods used to determine conveyance facility capacities
2. Hydraulic grade line calculation method and discussion of loss coefficients
3. Methods used to calculate water surface profiles
4. Detention pond routing

E. Water Quality Enhancement
1. Discuss proposed Best Management Practices
2. Identify design procedures

V. STORMWATER MANAGEMENT FACILITY DESIGN

A. Stormwater Conveyance Facilities
1. Discuss general conveyance concepts
2. Discuss proposed drainage paths and patterns
3. Discuss storm sewer design, including inlet and pipe locations and sizes, tributary basins and areas, peak flow rates at design points, hydraulic grade lines, etc.
4. Discuss storm sewer outfall locations and design, including method of energy dissipation
5. Discuss how runoff is conveyed from all outfalls to the nearest major drainageway, including a discussion of the flow path and capacity downstream of the outfall to the nearest major drainageway
6. Discuss open channel and swale designs, including dimensions, alignments, tributary basins and areas, peak flow rates at design points, stabilization and grade control improvements, low flow or trickle channel capacities, water surface elevations, etc.
7. Discuss allowable street capacities
8. Discuss maintenance aspects of the design and easements and tracts that are required for stormwater conveyance purposes
9. Discussion of the facilities needed off-site for the conveyance of minor and major flows to the major drainageway
10. Discuss lot-to-lot drainage assumptions and plan in detail as it relates to the overall grading of the site; include maximum flow conveyed between houses

B. Stormwater Storage Facilities
1. Discuss detention pond designs; including release rates, storage volumes and water surface elevations for the 2-year, 100-year and
emergency overflow conditions, outlet structure design, emergency spillway design, etc.

2. Discuss pond outfall locations and design, including method of energy dissipation

3. Discuss how runoff is conveyed from all pond outfalls and emergency spillways to the nearest major drainageway, including a discussion of the flow path and capacity downstream of the outfall to the nearest major drainageway

4. Discuss maintenance aspects of the design and easements and tracts that are required for stormwater storage purposes

C. Water Quality Enhancement Best Management Practices

1. Discuss the design of all structural water quality Best Management Practices, including tributary areas, sizing, treatment volumes, design features, etc.

2. Discuss how runoff is conveyed from all pond outfalls to the nearest major drainageway, including a discussion of the flow path and capacity downstream of the outfall to the nearest major drainageway

3. Discuss the operation and maintenance aspects of the design and easements and tracts that are required for stormwater quality enhancement purposes

D. Floodplain Modification

1. Discuss why the floodplain modifications are proposed

2. Discuss the source of the floodplain information and level of detail (Flood Hazard Area Delineation or FEMA Flood Insurance Rate Maps)

3. Discuss details of floodplain modifications, including level of encroachment, velocities, depths, stabilization measures, water surface elevations, etc.

4. Discuss Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) requirements

5. Discuss Town floodplain development regulations

E. Additional Permitting Requirements

1. Section 404 of the Clean Water Act

2. The Endangered Species Act

3. Other local, state, or federal requirements

F. General

1. Discuss all tables, figures, charts, drawings, etc. that were used in design of stormwater management facilities and describe materials that are included in the appendix of the report

VI. CONCLUSIONS

A. Compliance with Standards
1. Town of Castle Rock Criteria
2. Master Plans
3. Cherry Creek Reservoir Control Regulation No. 72
4. Chatfield Reservoir Control Regulation No. 73

B. Variances
1. Identify provisions by section number for which a variance will be requested, or has been approved by the Town (final version of Drainage Report). Additional information on variances is available in Chapter 1 General Provisions
2. Provide justification for each variance request

C. Drainage Concept
1. Discuss overall effectiveness of stormwater management design to properly convey, store and treat stormwater

VII. REFERENCES
Reference all criteria, master plans, reports or other technical information used in development of the concepts discussed in the Drainage Report

VIII. APPENDICES

A. Hydrologic Computations
1. Determination of runoff coefficients and times of concentration
2. Land use assumptions for off-site areas
3. Colorado Urban Hydrograph Procedure input parameter determination
4. SWMM input parameter determination
5. Peak flow rate calculations for the minor and major storms
6. Rainfall information
7. CUHP/SWMM input and output
8. Hydrograph data (if applicable)
9. Connectivity diagram showing relationship/connectivity of basins, conveyance facilities, detention ponds, and design points

B. Hydraulic Computations
1. Culvert capacities
2. Storm sewer capacities and hydraulic grade lines, including the loss coefficients
3. Street capacities
4. Inlet capacities
5. Open channel or swale capacities
6. Low flow and trickle channels
7. Stabilization and grade control improvements
8. Water surface profiles
9. Stage-storage-discharge determination for detention ponds
10. Detention pond routing calculations
11. Emergency spillway sizing calculations
12. Downstream/outfall capacity to the nearest major drainageway
13. Energy dissipation at pipe outfalls

C. Water Quality Enhancement Best Management Practices
   1. Design and sizing

D. Referenced Information
   1. Copies of pertinent portions of all referenced materials or drainage reports

Note: Hydraulic computations will be required with the Phase II Drainage Report if the information necessary to perform the calculations is available. Availability of information will be determined by the Utilities Department staff, based on the level of detail contained in the application submitted to Development Services. Regardless of present availability, all hydraulic computations will be required in the Phase III Drainage Report.

4.4.3 Certification Statement. The report shall contain a certification page with the following statement:

“I affirm that this report and plan for the Phase II drainage design of (Name of Development) was prepared by me (or under my direct supervision) in accordance with the provisions of the Town of Castle Rock Drainage Design and Technical Criteria for the owners thereof. I understand that the Town of Castle Rock does not and will not assume liability for drainage facilities designed by others.”

SIGNATURE: ___________________________________________
Registered Professional Engineer State Of Colorado No. ________________________
(Affix Seal)

4.4.4 Standard Forms. Use appropriate copies of the Town’s Standard Forms and UDFCD Design Spreadsheets applicable to the design. When using Town and UDFCD standard forms, charts, nomographs, etc., the form must be annotated as necessary to depict the specific information pertinent to the site. The engineer is required to show the appropriate information relative to the design and provide the lines, notes, etc. to depict how the design information was arrived at. For example, when using street gutter capacity charts, a separate chart for each street section shall be submitted, with the specific street criteria highlighted and the final result circled. Forms that are copied out of the book without the appropriate annotations are not adequate.

4.4.5 Checklists. Design or report checklists as referenced in the individual sections of this manual, and as available on the Town of Castle Rock website (www.crgov.com), must be completed and submitted with the Drainage Report. Appropriate notations shall be provided with the checklist to assist the reviewer in
determining whether the design is complete (i.e., if a specific item is not addressed, an explanation should be provided). All design or report checklists that have been developed will be available on the Town of Castle Rock website. New and/or revised checklists will be added as they are developed.

### 4.4.6 Phase II Drainage Plan Requirements

The following is an outline of the minimum Phase II drainage plan requirements. All plans must be bound:

#### I. OVERALL DRAINAGE PLAN

A. 24” x 36” or 22” x 34” are acceptable size
B. Title block and legend
C. Show boundaries of entire development or project
D. Existing or proposed streets, roadways, or highways
E. Show limits of all major basins, including off-site basins where feasible
F. General drainage patterns and flow paths, including those entering and leaving the site
G. Topographic information with a 5-foot maximum contour interval
H. Identify existing and proposed stormwater management facilities, upstream, downstream, or within the site, which will provide a stormwater management function for the site
I. Overlay or figure showing layout of Detailed Drainage Plan sheets

#### II. DETAILED DRAINAGE PLANS

A. 24” x 36” or 22” x 34” are acceptable sizes
B. Title block and legend
C. Basin designations, design points, flow rates, volumes and release rates
D. Scale 1”=20’ to 1”=100’, as required to show sufficient detail
E. Existing (dashed or screened) and proposed (solid) contours with a 2-foot maximum contour interval. In terrain where the slope exceeds 15%, the maximum interval is 5-feet. Contours must extend a minimum of 100 feet beyond property lines and contour elevation labels must be included
F. Existing utilities and structures
G. All property lines and easements with type of easements noted
H. Adjacent developments or ownerships
I. Streets and roadways with Right-of-Way and flow line widths, type of curb and gutter or roadside swale, slopes, flow directions, and crosspans
J. Drainage basin and sub-basin limits
K. Existing and proposed stormwater management facilities, including irrigation ditches, roadside swales, open channels and drainageways, storm sewer, culverts, detention ponds, water quality enhancement structures or features, etc. Information must be included regarding materials, sizes, shapes, and slopes; also include detailed lot-to-lot drainage patterns with flow direction arrows
Chapter 4. Drainage Report and Construction Drawing Submittal Requirements

L. Proposed outfall points and existing or proposed facilities to convey runoff to the nearest major drainageway, without damage to downstream properties

M. Location and elevation of all existing and proposed 100-year floodplain boundaries, including the source of designation. All floodplain designations that exist for the site should be included (i.e. FEMA Flood Insurance Rate Maps, Flood Hazard Area Delineation, and others)

N. Summary runoff table

NOTE: The items listed above will be required with the Phase II Drainage Report or a written explanation as to why information cannot be provided.

4.4.7 Master Plan of Drainage. The Town of Castle Rock Subdivision Resolution makes reference to a Master Plan of Drainage in the Sketch Plat and Preliminary Plat discussion regarding procedures and submittal requirements, and that is reflected in Table 4-1. The Master Plan of Drainage shall be considered equivalent to a Phase I Drainage Report for the Sketch Plat and Preliminary Plat submittals, respectively, and must meet those minimum requirements.

4.5 Phase III Drainage Report and Plan

4.5.1 Requirement for Phase III Drainage Report and Plan Submittal. The purpose of the Phase III Drainage Report is to update the concepts, and to present the design details on construction plans for the drainage facilities discussed in the Phase II Drainage Report. Also, any change to the Phase II concept must be presented. All reports shall be typed on 8½” x 11” paper and bound. The drawings, figures, charts and/or tables shall be bound with the report or included in a folder/pocket attached at the back of the report.

4.5.2 Report Contents. The Phase III Drainage Report shall be prepared in accordance with the outline shown in Section 4.4.2, above.

4.5.3 Certification Statement. The report shall be prepared by or under the direction of an engineer licensed in Colorado, certified as shown below. The report shall also contain a developer certification sheet as follows:

“I affirm that this report and plan for the Phase III drainage design of (Name of Development) was prepared by me (or under my direct supervision) in accordance with the provisions of the Town of Castle Rock Drainage Design and Technical Criteria for the owners thereof. I understand that the Town of Castle Rock does not and will not assume liability for drainage facilities designed by others.”

SIGNATURE: __________________________________________
Registered Professional Engineer State Of Colorado No. ________________
(Affix Seal)
“(Name of Developer) hereby certifies that the drainage facilities for (Name of Development) shall be constructed according to the design presented in this report. I understand that the Town of Castle Rock does not and will not assume liability for the drainage facilities designed and/or certified by my engineer and that the Town of Castle Rock reviews drainage plans pursuant to the Municipal Code; but cannot, on behalf of (Name of Development), guarantee that final drainage design review will absolve (Name of Developer) and/or their successors and/or assigns of future liability for improper design.”

Name of Developer

Authorized Signature

4.5.4 Phase III Drainage Plan Requirements. The report drawings shall follow the requirements presented in Section 4.4.6, above.

4.6 Stormwater Management Facility Operation and Maintenance Manual

4.6.1 Stormwater Management Facility Operation and Maintenance Manual (O&M Manual) Requirement. Detention ponds, open channels, post-construction water quality Best Management Practices, and other stormwater management facilities require proper maintenance in order to ensure that they function as designed. An O&M Manual must be developed in conjunction with the final design to provide operation and maintenance guidance for all detention ponds, open channels, post-construction Best Management Practices, and other stormwater management facilities as determined by the Town, to be submitted for Town acceptance prior to Town acceptance of the construction drawings. The O&M Manual shall be prepared by the design engineer and certified by the owner and design engineer in accordance with O&M Manual template provided on the Town of Castle Rock website and as described in Section 4.6.2.

The purpose of the O&M Manual is to educate and provide guidance and standard forms for those entities that will be responsible for the maintenance of stormwater management facilities.

4.6.2 Development of the O&M Manual. The O&M Manual template developed by the Town shall be used as the foundation for all stormwater management facility O&M Manuals. There are locations identified on the template cover page and in the table of contents and narrative sections where project specific information must be inserted. In general, the project specific information that must be inserted includes, but is not limited to, project name and location, developer name and contact information, design engineer and contact information, a general project description, and a description of the stormwater management facilities and Best Management Practices constructed with the project and that are covered by the O&M Manual.
The template also identifies standard appendices that must be included in the O&M Manual. Standard Operating Procedures, Inspection Forms, and Maintenance Forms have been developed by the Town for some of the commonly constructed stormwater management facilities. If Standard Operating Procedures, Inspection Forms, or Maintenance Forms are available for a specific stormwater management facility, they shall be used and inserted in the appropriate appendix. If Standard Operating Procedures, Inspection Forms, or Maintenance Forms have not been developed by the Town for a specific stormwater management facility, they must be developed by the design engineer in a format that is consistent with those developed by the Town. The Stormwater Facility Maintenance Notification Form is a standard form that has been developed by the Town. The remaining appendices consist of an overall site plan and the project construction drawings, which are developed by the design engineer. The Town accepted construction drawings and/or the approved Site Improvement Plan shall be included in these appendices.

The O&M Manual Development Instructions, the O&M Manual template, and facility-specific Standard Operating Procedures, Inspection Forms, Maintenance Forms, and the Stormwater Facility Maintenance Notification Form are available on the Town of Castle Rock website.

4.7 Construction Drawings

4.7.1 Stormwater Management Improvements. Stormwater management improvements within the public Right-of-Way or easements are required to be designed, constructed, and accepted in accordance with Town standards and criteria. Construction drawings must be developed for all stormwater management improvements and submitted to the Town for review. Town acceptance of final construction drawings is a condition for issuance of construction permits.

4.7.2 Construction Plan Submittal. Detailed information regarding construction drawing submittal procedures is provided in the Town of Castle Rock Public Works Regulations.

4.7.3 Construction Plan Requirements. In general, the information required for stormwater management facility construction drawings shall be in accordance with sound engineering principles, Town of Castle Rock Criteria and the Town requirements for subdivision design and stormwater quality Best Management Practices sample drawings. Construction drawings shall include geometric, dimensional, structural, foundation, bedding, hydraulic, landscaping, and other details as needed to construct the stormwater management facilities. Detailed information regarding construction drawing requirements and certification is provided in the Town of Castle Rock Public Works Regulations.
4.8 Record Drawings

All stormwater improvements that have been constructed within the Town Right-of-Way and stormwater easements must be accepted by the Town. The Town’s acceptance process verifies that the improvements have been constructed in accordance with the requirements.

4.8.1 Record Drawing Requirements. Record drawings, including the required “Statements of Substantial Completion” by the Project Engineer and Surveyor shall be submitted in accordance with the Town of Castle Rock Public Works Regulations. Additional details regarding the submittal of record drawings are provided in the Town of Castle Rock Public Works Regulations.