

## **1.5. CONSTRUCTION DRAWINGS**

### **1.5.1. CITY APPROVAL OF DRAWINGS REQUIRED FOR**

- A. Subdivisions
- B. Site Developments that include any of the following:
  - 1. Grading more than one acre.
  - 2. Installation of improvements required by City.
  - 3. Installation of any improvements intended to become public.
  - 4. When determined to be necessary by the City Engineer.

### **1.5.2. GENERAL STANDARDS**

- A. Final approval of the project shall not be granted until the plans have been reviewed and recommended for approval by the city engineer.
- B. Standards are set for the purpose of standardizing the drawings and to obtain uniformity in appearance, clarity, size and reproduction.
- C. All drawings and prints shall be clear and legible and conform to good engineering and drafting practices.
- D. Size of drawings shall be 24 inches x 36 inches.
- E. Title block is located on the right side of the sheet and includes:
  - 1. Project Title
  - 2. Sheet Title
  - 3. Sheet Number
  - 4. Name, address, and phone number of engineer
- F. Engineer's stamp and signature with date is required on all sheets.
- G. Include north arrow and graphical scale on all plan sheets.
- H. Minimum text size is 0.08 inches.

### **1.5.3. CONSTRUCTION DRAWING STANDARDS**

- A. Title sheet
  - 1. Showing:
    - Sheet index

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- Project title
- Vicinity map
- Engineer's certification
- Project benchmark information
- Basis of bearings
- General project boundary and layout map

2. Include Utility and City signature block:

- Required City Signatures: City Engineer, Public Works Director, Building and Zoning Administrator, Public Safety Officer, Parks and Recreation Director.
- Required Utility Signatures: Gas, Power, Phone, Postmaster, Cable, Others if applicable (i.e. Ivins Irrigation Co., Interlynx Fiber Optics, St. George City, Santa Clara City, WCWCD).

B. Construction Notes Sheet

C. Erosion Control Plan and Details

1. Showing:

- Management practices to be employed
- Temporary and permanent facilities to be installed to control soil erosion and prevent sedimentation impacts to adjacent properties and public facilities during and after construction.

D. Grading Plan and Cross Sections

1. Minimum scale is 1"=50'

2. Showing:

- Relationship of street to curb, gutter, and sidewalk
- Top of curb elevations at lot lines and curb returns
- Curve data for curb returns
- Existing and proposed contour topography (maximum 2' contour interval)
- Slopes
- Building pad elevations
- Cross sections
- Top of wall and bottom of wall elevations on retaining walls
- Drainage flow arrows

E. Utility Plans

1. Shows the size, type, and location of the following:

- Culinary water laterals, mains, meters, valves, and fire hydrants

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- Secondary and irrigation water laterals, mains, valves, etc.
  - Sanitary sewer pipes, manholes, cleanouts, and laterals
  - Storm drain pipes, inlets, catch basins, manholes, headwalls, subdrains, and outfalls
  - Power, natural gas, and cable television
  - Street lights including conduit, pullboxes, and appurtenances.
  - Any other utility the City may require.
2. Sewers and storm drains must have a profile drawing showing depths of pipes, slopes, lengths, and clearances at all pipe crossings. This may be combined with the street profile.
  3. Shows all existing utilities

F. Street and Project Entrance Lighting Plan

G. Street Plan and Profiles

1. Minimum scale is 1"=50'
2. Shows all of the following:
  - Existing profile of centerline and at both right-of-ways and labeled accordingly
  - All existing elevations
  - All existing conditions and structures
  - Stationing
  - Top back of curb elevations
  - Centerline elevations
  - Curve data
  - Typical cross section for all street sizes and variations
  - Pavement and Base thickness design per Geotechnical Evaluation (include in typical cross section).
  - Benchmark location and elevation
  - Street names
  - Tapers
  - Traffic control devices such as signage and striping. (May use separate sheet for traffic plans)

H. Landscaping Plan

1. Includes a Planting Plan (plant list).
2. Includes an Irrigation System Plan
  - Show location, size, and material for all valves, controllers, and trunklines.

I. Detail Sheets (as needed)

1. Do not include standard details in the detail sheets that can be referenced directly on plan sheets.

#### 1.5.4. APPROVAL PROCESS

##### A. First Submittal of Construction Plans:

1. Submit Construction Drawing Checklist (IC Form 7033), as included in Appendix K of these documents.
2. Submit construction cost estimate.
3. Submit 3 sets of construction drawings, copies or original
4. Must be stamped by a professional engineer.
5. The approximate review period for the first submittal is 14 to 21 calendar days.
6. Upon review, one set of marked up construction drawings will be returned identifying the required changes for approval.

##### B. Subsequent Submittals of Construction Plans:

1. Submit markup copy of construction drawings from previous submittal.
2. Submit one original set of revised construction drawings with all utility signatures and stamped and signed by professional engineer.
3. City intends to keep the original set in its files. If the owner/developer or engineer wants to have a set of originals, additional originals may be provided.
4. Submit updated construction cost estimate, if necessary.
5. The approximate review period for the subsequent submittals is 7 to 14 calendar days.
6. Upon review, if all marked changes were corrected in the submittal, the original set of construction drawings will be returned with all necessary city signatures.

##### C. Final Submittal of Approved Construction Plans:

1. Submit original signed and stamped set of construction drawings.
2. Submit 2 additional copies of construction drawings.
3. Submit electronic copies of construction drawings and any final approved plats in AutoCAD format and in a scanned PDF format.

#### 1.5.5. DESIGN REVISIONS

- A. The approved drawings may be amended on or after the effective date to provide for additions, deletions and revisions in the work thereof.
- B. All amendments, supplements, changes and directives require approval of the City Engineer or its Authorized Representative.
- C. Process for Drawing Revisions
  1. Submit revised drawings using clouds to highlight revised areas and referenced to a revision block that provides brief descriptions.
  2. Drawing revisions must be stamped and signed by professional engineer.
    - If not the same professional engineer in the original sheet, provide a written consent from the original engineer for the revision, or a reasonable justification for not being able to provide the consent.
  3. Include location in the revision block for City Engineer and Public Works Director to initial for approval.
  4. Submit 4 review copies with at least one original for City files.
  5. If approved, City will return one copy and keep 3 copies including the one original, or if not approved, a markup copy will be returned.
  6. If deemed necessary, it may be required to receive consent from any affected utilities prior to approval of a revision.
  7. No work on revision shall be allowed until approval of drawing.
- D. Process for Field Revisions
  1. No field revisions shall be allowed without the consent of the City Engineer or its authorized representative.
  2. No field revision shall be allowed without the consent of the professional engineer that stamped the plans.
  3. Any field revision that has the potential to impact more than three segments of a utility or more than an acre of area shall be required to submit a revised drawing unless otherwise approved by the City Engineer.
  4. Field revisions shall be noted on the plans held by the City Engineer, the City Inspector and the Contractor.

#### 1.5.6. EXPIRATION OF CONSTRUCTION DRAWING APPROVAL

- A. Approval of construction drawings shall expire one year after approval by the city if no construction work has begun on the development.
- B. Construction drawings shall also expire if construction of improvements is stopped during the construction for one year, unless an extension is granted by the city council prior to the expiration date or is included in the development agreement.

#### 1.5.7. DRAWING OF RECORD REQUIREMENTS

- A. Drawing of Record required to be submitted prior to request for final inspection.
- B. Developer shall submit record drawing for all utilities and other improvements required.
- C. Developer shall provide 3 sets of the drawing of record for review by city staff.
- D. Upon approval of submitted record drawing, developer shall provide:
  - 1. One corrected set of record drawings
  - 2. Electronic version as a scanned pdf or tif version.
  - 3. Electronic version as an AutoCAD file.
  - 4. Text file of survey points collected for production of record drawing using State Plane NAD83 (Utah South) coordinate system.
- E. Drawing of Record shall be prepared by a licensed surveyor or professional engineer and shall be stamped and signed.
- F. Shall include the following:
  - 1. Actual surveyed locations of the sewer mains and manholes (tied to acceptable positions) with their depths, grades, sizes and types. Also, the distance from the closest property line of each lot or parcel to the sewer lateral service shall be shown.
  - 2. Actual surveyed locations with ties to all valves for the culinary water, secondary water and irrigation company water shall be shown. An approximation of the water mains, with their sizes and the type of water main, shall also be shown.
  - 3. Actual surveyed location of the storm drain and sub-drain manholes, catch basins, inlet boxes and pipes with their depths, grades, sizes and types.
  - 4. Actual surveyed location of above ground dry utility appurtenances and approximation of buried dry utility lines.
  - 5. Benchmarks (at least 2) established and shown on the drawing of record that shall be located on or near the development.

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6. The drawing of record shall reflect all field changes or any aspect of the original construction plans.
  7. An elevation shall be established at the ends of all new curb and gutter, waterways and sidewalks, which are stubbed at the ends of the development.
  8. Actual surveyed building pad elevations shall be shown and shall not vary from the construction plans by more than 0.5 feet
  9. Detailed landscaping plans for landscape areas to be maintained by the City
  10. Actual surveyed top and bottom elevations of walls adjacent to city streets at least every 100 feet with elevation of nearest curb.
- G. Drawing of record must be approved prior to final acceptance and start of warranty period.

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