# **Construction Control Plan**

#### Introduction

A Construction Control Plan ("CCP") will be required for larger development projects as determined by City staff. Notification of this requirement will generally be provided during the development Pre-Application Meeting, but depending on the complexity and design of the project the need for a CCP may also arise during the development plan review process. The purpose of the CCP is to act as a quality control measure to ensure items proposed for construction will be properly located and completed per approved civil construction and building permit plan sets.

Generally speaking the CCP is a set of plan sheets ("Sheets") assembled by the architect in collaboration with the civil engineer. The CCP is comprised of an overall plan (see Figures 1 and 2) for the entire site that provides design elevations and a "placeholder" for As-Built information to be later collected in the field. The CCP will include enlarged details as necessary to show areas difficult to see in the overall Sheets, such as proposed buildings, their designed finished floor elevations, and setbacks to property boundaries (see Figure 3). The CCP shall be provided with the *Site Work Permit* required prior to commencement of any on-site infrastructure improvements, or provided with the *Right-of-Way Construction Permit* for those instances where the work resides entirely within the public Right-of-Way ("ROW"). The *Site Work Permit* application may be obtained from the City of Wheat Ridge Building Division ("Building Division"), and the *Right-of-Way Construction Permit* may be obtained at the Public Works Department ("Public Works"), both found within Wheat Ridge City Hall located at 7500 W. 29<sup>th</sup> Avenue, Wheat Ridge, CO 80033 (303.235.2876).

The initial CCP Sheets shall contain:

- The designed finished floor elevations and setback distances for each of the buildings provided by the architect. (This does not apply when improvements lie solely within the public ROW).
- The grading/contour lines and elevations for the horizontal infrastructure as designed on the civil construction plans shall be provided by the civil engineer.
- An acknowledgement statement from both the architect (for the buildings) and the engineer (for the horizontal improvements) stating the design information shown on the CCP is consistent with their respective designs. The combined design information will later be used as a reference and for direct comparison with field information to be collected as construction proceeds.
- Specific target locations where elevations and distances shall be field measured following the construction of certain items, such as the flowline of curb & gutter, top and bottom of retaining walls, grades for ramps and sidewalks to ensure compliance with the Americans with Disabilities Act ("ADA") standards, building setback distances, and building finished floor elevations. The field collected information shall be added directly to the Sheets and certified by a Colorado licensed Professional Land Surveyor or his/her designee. The field measured information will be used by City staff for direct comparison with the design elevations and setback distances from the architect and engineer.

#### **Construction Phasing**

Unless otherwise noted herein, all requested field-collected coordinates, elevations, and distances, hereafter referred to as "As-Built" information, shall be provided directly on the CCP. As various items are completed the construction supervisor for the project or other designated project/developer representative will direct a Colorado licensed Professional Land Surveyor to obtain the required As-

Built information (identified as "AB" on the CCP) at the locations specified on the CCP. One copy of the CCP for each area where the horizontal infrastructure has been constructed (construction "Phase"), shall be submitted to the Building Division for review and approval. The benefit of completing the horizontal infrastructure in phases is that it generally allows for commencement of vertical construction within the Phase area as those are completed. When the next Phase area infrastructure has been completed, the As-Built information is added to the CCP and again submitted to the Building Division. This process will continue until all Phases of the horizontal infrastructure have been completed and a final CCP has been submitted to the either the Building Division or Public Works depending on the type of permit issued. The final, fully completed CCP must be approved prior to issuance of a Certificate of Completion from the Building Division for the *Site Work Permit*, or prior to issuance of the Final Acceptance letter by Public Works for work performed under the *ROW Construction Permit*.

<u>FIRE CODE Requirements</u>: Please be advised that the fire code requires that the approved water supply be in place prior to the delivery of combustible materials on site. Phasing of emergency access and fire hydrant installation is not permitted. In compliance with the fire code and as required by the fire protection districts all streets and drive aisles serving as emergency access as shown on the approved site plan must be installed prior to vertical construction with at least a bottom lift of paving. All required fire hydrants must be installed and serviceable prior to vertical construction or the delivery of combustible materials on site. The required access and water supply must be in place prior to and during construction, so please check with the Fire District serving the development area regarding other specific Phasing requirements.

## **CCP Requirements**:

- <u>Current City Datum Coordinate System</u>: Three dimensional coordinate information shall be established on all points. The horizontal positioning shall be coordinates based upon the City of Wheat Ridge coordinate system, being a ground-based modified form of the NAD83 HARN State Plane coordinate system. The vertical datum to be employed shall be the NAVD88 vertical datum. The combined horizontal and vertical coordinate information mentioned above will hereafter be referred to as the *Current City Datum*. All surveyed data shall be consistent with the *Current City Datum*. Contact the City of Wheat Ridge Department of Public Works at 303.235.2861 for further information.
- 2. <u>Horizontal Infrastructure:</u> The following requirements pertain to horizontal infrastructure only. Design elevations shall be provided by the civil engineer and field collected (As-Built) elevations shall be provided by the surveyor on the CCP for horizontal infrastructure including, but not limited to, the following:
  - a. Curb & Gutter: Elevations shall be furnished at the flowline at all Points of Curvature ("PC") and Points of Tangency ("PT") of curves, at all angle points, at approximately 100' intervals on tangent sections, and at any other points as identified by City staff.
  - b. Sidewalks (attached or detached): Elevations shall be furnished on both sides of the sidewalk to determine the cross-slope does not exceed the 2% maximum as required under the Americans with Disabilities Act ("ADA"). Shots shall be taken at all PC's and PT's of curves, at all angle points, at approximately 100' intervals on tangent sections, and at any other points as identified by City staff.
  - c. ADA Ramps: Elevations shall be furnished at the top and bottom of all ADA ramps to verify all grades are within ADA requirements.

- d. Drainage-related items:
  - i. Drainage pans shall be shot in the flowline at approximately 100' intervals, angle points, or at any location as City staff deems necessary.
  - ii. Drop inlets shall be shot at the flowline, centerline of grate and an invert of the box obtained.
  - iii. Outlet structures shall have as many shots/measurements as deemed necessary by the certifying engineer-of-record.
  - iv. Pipes and pipe outfall inverts shall be provided for both ends of the pipe whenever possible.
  - v. Manholes shall be shot at the center of the rim, and include an invert elevation.
  - vi. Area inlets may also be required. Area inlets are to be shot at the centerline of the grate and include an invert elevation.
  - vii. Wing wall elevations shall be provided at the top and bottom at the locations specified by the City.
- e. Retaining Walls: Elevations shall be provided at the top and bottom of retaining walls at logical positions, such as at the wall end, angle points, major step-ups (or downs), etc.
- f. Ground Elevations: Spot elevations on the ground may be required at certain target locations as determined by City staff, such as where it appears the slopes may be near the maximum of 4:1.
- 3. <u>Building Foundations:</u> The following requirements pertain to Building Foundations only.
  - a. Design finished floor elevations and setback distances shall be provided by the architect and be clearly shown on the CCP.
  - b. A completed *Foundation Setback and Elevation Certification* form, signed and sealed by a Colorado licensed Professional Land Surveyor, shall accompany the CCP and include the following field collected information for the building foundation at all external corners:
    - i. Setback distances
    - ii. Elevations



Figure 1 (Example Overall Sheet – refer to page 7 for enlarged view):

Figure 2 (Enlarged Detail Showing Elevations- refer to page 8 for enlarged view):





Figure 3 (Building Setback Distances- refer to page 9 for enlarged view):

### Submittals and Process:

The form of the submittals for the CCP shall include:

- 1. The initial CCP shall be submitted to the Land Use Case Manager in the Community Development Department for staff review. The CCP shall be delivered in PDF electronic format and submitted with the Civil Construction Plans ("CDs"). The CCP PDF will be reviewed by staff and redlined comments will be returned for corrections with the redlined CDs.
- 2. When the initial CCP is found to be approvable, a PDF file signed by both the architect and the civil engineer shall be submitted for City approval.
- 3. Two approved wet-sealed and signed full-size (24" x 36") hardcopies of both the CCP and CDs shall be included with the Site Work Permit Application.
- 4. A copy of the approved signed CCP shall be included with the first Building Permit Application plan set for the project.

As the horizontal improvements are completed the following shall occur:

- 1. As each Phase of the project is constructed a CCP shall be completed for that Phase per the instructions of the construction supervisor or other designated project/developer representative.
- 2. A copy of the completed CCP containing the As-Built elevations for each Phase shall be signed by the Colorado licensed Professional Land Surveyor, and the date(s) of the field work added. The CCP for each Phase is then submitted to the Building Division for review and approval.
- 3. As each Phase of horizontal improvements progresses and those improvements are sufficiently completed it will generally allow for commencement of vertical construction within the area of the Phase, meaning issuance of BPA's may commence within that particular Phase area.
- 4. At such time as all improvements have been satisfactorily completed for the entire project in conformance with the approved civil construction plans and as reflected by the As-Built information on the CCP, and the final CCP has been reviewed and approved by City staff:
  - a. A Certificate of Completion for the Site Work Permit will be issued by the Building Division to close out the work performed under the *Site Work Permit*, and/or
  - b. A Letter of Final Acceptance will be issued by Public Works to close out the work performed under the *ROW Construction Permit*.

At the time of vertical construction the following shall occur:

- 1. When forms have been set for any building foundation, a completed *Foundation Setback and Elevation Certification* form accompanied by the CCP showing the setback distances and finished floor elevations for that building shall be submitted to the Building Division for review and approval. No further construction on the building shall occur until such time as the Building Division has approved the CCP and associated *Foundation Setback and Elevation Certification* form.
- 2. As each new building is formed, the additional setback and finished floor elevations are added to the CCP and the updated CCP shall be resubmitted to the Building Division.





