

CHAPTER 6: CONSTRUCTION PLANS AND SPECIFICATIONS

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6.00 CONSTRUCTION PLANS AND SPECIFICATIONS – PROCEDURE AND REQUIREMENTS

- A. Subdivider's Obligation:** The subdivider shall cause engineering plans and specifications to be prepared for all improvements required. Said improvements shall be designed to meet or exceed the minimum standards set forth in this chapter and these regulations. Improvements shall also conform to the minimum standards and requirements of other local, state and federal authorities, which have jurisdiction over the subdivision. Construction plans and specifications shall be prepared under the supervision of a licensed engineer pursuant to the laws of the State of Illinois and shall bear the engineer's seal, license number and signature.
- B. Required Submittal:** The subdivider's engineer shall submit construction plans and specifications to the City Engineer for review and written approval, prior to the commencement of construction of any improvements required or regulated by these regulations. Said submittal shall include, but not be limited to:
1. Two sets of plan documents – any combination of full (24 in. x 36 in.) and / or half size (11 in. x 17 in.) for review.
 2. Written requests for waiver of minimum materials and construction standards, describing the degree of deviation, the necessity or advantage of it and the alternate plan.
 3. The signed statement of the subdivider authorizing the subdivider's engineer to provide sufficient inspection to certify that the improvements required, and / or regulated, by this manual are constructed and inspected in accordance with these regulations and other applicable ordinances of the City, and a written understanding by the subdivider's engineer that the engineer shall provide such inspection service.
- C. Flood Prone Areas:** When a subdivision, or part thereof, is located in a flood-prone area, as designated by the Federal Emergency Management Administration (FEMA), at his own expense, the subdivider shall provide such hydrologic design data and calculations and utility and drainage plans as may be required by the City Engineer to assure that the subdivision is consistent with the need to minimize or eliminate flood damage. (See Manual Chapter 19: Hydrologic Design Standards and the City of Champaign Stormwater Regulations – Chapter 29.5 of the City of Champaign Municipal Code.)
- D. Subsidiary Drainage Plat:** The subdivider's engineer shall prepare a drainage study and certificate hereafter called "subsidiary drainage plat" in accordance with 765 ILCS 205/1, as amended and as may hereafter be amended, and shall submit the subsidiary drainage plat as part of the construction plans to the City Engineer for approval.
- E. City Engineer's Responsibility:** The City Engineer shall review engineering plans and specifications for conformance to this chapter and generally accepted good engineering practice.
- F. Approval:**
1. The City Engineer shall notify the subdivider and the Planning Director of approval or disapproval of the construction plans and specifications and the subsidiary drainage plat.

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2. Such notification, specifying reasons for approval or disapproval, shall be made within approximately 10 working days, excluding holidays, of the date of submission of plans, specifications and plats required by this section. Plans will be reviewed in the order of submission. Written approval may be executed by signing the plans as approved.
 3. Construction of improvements, required or regulated by this chapter, shall not commence until the City Engineer has approved, in writing, engineering plans and specifications for the improvements, hydrologic design data as may be required by these regulations, and the subsidiary drainage plat.
- G. Field Modifications:** As also indicated in Section 7.01B, if in the course of construction the subdivider wishes to modify the size, type, quality, quantity or location of improvements required or regulated by these regulations as shown on the approved construction plans, the subdivider's engineer shall contact the City Engineer for approval prior to proceeding with installation of the modified improvement. Said approval may be verbal or written. In any case, the subdivider's engineer shall submit within one week a brief written memorandum of understanding.
- H. Final Plat Requirements:** Approval of the construction plans and specifications and the subsidiary drainage plat is a prerequisite to submission of the final plat.
- I. Construction Specifications:** Shall be submitted and made available to the City Engineer with the submission of the construction plans. Construction specifications shall not deviate from the City of Champaign construction standards as outlined in this Manual. If there is any deviation, a Request for Waiver shall be submitted in writing to the City Engineer.

6.01 CONSTRUCTION PLANS SET – FORMAT

- A. Sheet Size:** Plan set shall be 24 in. x 36 in. or 11 in. x 17 in. Variations in dimensions may be approved by the City Engineer, if requested prior to submission of plans.
- B. Plan scale** shall be at a minimum of 1 in. = 100 ft.
- C. Precision:** All distances shall be shown to the nearest 0.01 ft. and elevations shall be shown to the nearest 0.1 ft.

6.02 CONSTRUCTION PLAN SET – REQUIRED SHEETS AND CONTENTS

A. Cover Sheet

1. Vicinity map shall be included with the overall size of at least one-fourth section, indicating adjacent arterial streets, and adjacent subdivisions.
2. Title indicating city, county, and state, with section, township and range.
3. A list of benchmark location and elevations. Benchmarks shall be of a type and elevation as generally accepted by legal standards and professional land surveying standards in the State of Illinois. Plans shall state benchmark datum being referenced and shall describe vertical and horizontal adjustments relative to adjacent tracts with datum equation.
4. An index of sheets.
5. Signature Blocks for "Design Engineer" and "Approved by City Engineer."

B. General Notes Sheet

1. Traffic Control Notes.
2. Grading and Erosion Control Notes.
3. Sanitary Sewer Notes (including testing requirements).
4. Legend – listing definitions for all line types and symbols shown in the construction plan set.

C. Infrastructure Inventory Sheet / Table

This table shall also be submitted electronically in Microsoft Excel format—latest version, in the form of a template that is available from the City Engineer’s office. Quantities of public infrastructure shall be submitted together with estimates of unit price and total cost (see Attachment 6.01). If quantities change during construction, the Infrastructure Inventory Sheet shall be revised and submitted with the as-built plans.

D. Grading Plan, Subsidiary Drainage Plat, and Erosion Control Plan

Note: These sheets may be shown as separate sheets or combined into a single sheet except that erosion control must be clearly indicated.

The grading plan shall be drawn at a maximum contour interval of 2 ft. showing proposed and existing elevations with discrete elevations shown at lot corners, mid lot lines and for minimum building pad elevations. Discrete elevations shall also be shown on pavement surfaces sufficient to show that all pavement has a minimum drainage slope of 0.4%. Adjacent topography shall be shown to the extent that it impacts the drainage of the current construction area. The grading plan and subsidiary drainage plat are essentially the same, except that the subsidiary drainage plat contains the following statement with signature blocks for design engineer and owner:

Drainage Statement

We hereby state that to the best of our knowledge and belief the drainage of surface waters of this plat will not be changed by the construction of the improvements of this subdivision or any part thereof or that if such surface water drainage will be changed, reasonable provisions have been made for collection and diversion of such surface waters into public areas, or drains which the subdivider has a right to use, and that such surface waters will be planned for in accordance with generally accepted engineering practices so as to reduce the likelihood of damage to the adjoining property because of the construction of the subdivision.

Date: _____

Name of Engineer
Illinois Registered Prof. Eng. No. _____

Owner & Subdivider: _____

Name of Developer / Owner
Title _____
Corporation _____

E. Utility and Pavement Plan Sheets

1. Utility plan sheets shall be included and show type, size, length and location for storm sewer and underdrain systems, sanitary sewer systems and other private utility systems. Determine the type, size, and location of all proposed utility systems. Stationing shall be shown. It is preferred that these utility plan sheets be separate sheets. All planned private utilities shall be shown and indicated as such.
2. Pavement plan sheets shall be included to show all plan dimensions and stationing for streets necessary for construction layout.
 - a. It is preferred that infrastructure systems be shown in their entirety on a single sheet. If it is necessary to break up the systems into multiple sheets, an overall key map must be provided.
 - b. Profile Sheets for proposed and adjacent / existing streets, storm sewers and sanitary sewers showing distances, elevations and slopes as required (inverts shall be shown with direction clearly indicated for each). Influent and effluent elevations shown on the plans shall be edge of manhole elevations. Distance between manholes shall be center-to-center and the pipe length shall be also shown as edge to edge of manhole distances.

F. Intersection Detail Sheet showing intersection jointing patterns, radius / curve information and discrete elevations. Typical discrete elevations are as follows:

1. Edge of pavements
2. Center line
3. High and low points
4. Inlet—rim [low point of water entry]
5. Top of curb elevations

G. Pavement Details Sheet showing details for all standard pavements. These details shall include typical sections and jointing patterns. There shall also be details for curb and gutter cross sections, sidewalk ramps, pavement joints adjacent to inlets or manholes and medians in accordance with City of Champaign Pavement Standards as described in this Manual (see Chapter 10: Design and Construction of Streets). Other pavement details shall be shown as needed.

H. Storm and Sanitary Sewer Details Sheets showing manhole and backfill details for storm and sanitary sewer systems as shown in chapters of this Manual (see Chapter 17: Storm Sewer Systems, and Chapter 18: Sanitary Sewers Systems). This sheet shall also show sanitary and service lateral details and drop manholes. The following shall also be noted and shown on detail sheet:

1. Concrete encasement of sanitary wyes are not permitted (only carefully placed and compacted aggregate material is allowed as outlined in Chapter 18—Sanitary Sewer Systems).
2. Permanent steps in sanitary manholes are not permitted. Temporary steps may be installed for construction purposes.

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3. External chimney seals are required as per Chapter 18—Sanitary Sewer Systems.
4. Secondary connections to sanitary or storm sewer, such as sanitary connections or sump pump line connections shall be achieved by either precast construction or by means of core drilling.

6.03 STANDARD ATTACHMENTS

Standard Attachment 6.01—Infrastructure Inventory Sheet

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CITY OF CHAMPAIGN INFRASTRUCTURE INVENTORY SHEET						
PROJECT NAME _____						
DATE _____						
Inventory Item	Unit	Quantity	Unit Price	Total Cost	D*	
<u>Pavement System</u> 7 in. x 28 ft. Concrete Pavement w/ c&g complete	LF					
7 in. x 34 ft. Concrete Pavement w/ c&g complete	LF					
9 in. x 28 ft. Asphalt Pavement w/ c&g complete	LF					
9 in. x 34 ft. Asphalt Pavement w/ c&g complete	LF					
6 in. x 5 ft. Concrete Sidewalk	LF					
Other _____						
				Subtotal		
<u>Storm Sewer System</u> Linear feet of 12 in. dia. RCP CI IV-Storm Sewer	LF					
Linear feet of 15 in. dia. RCP CI IV-Storm Sewer	LF					
Linear feet of 18 in. dia. RCP CI IV-Storm Sewer	LF					
Linear feet of 24 in. dia. RCP CI IV-Storm Sewer	LF					
Linear feet of 36 in. dia. RCP CI IV-Storm Sewer	LF					
Linear feet of 12 in. dia. HDPE-Storm Sewer	LF					
Linear feet of 15 in. dia. HDPE-Storm Sewer	LF					
Linear feet of 18 in. dia. HDPE-Storm Sewer	LF					
Linear feet of 24 in. dia. HDPE-Storm Sewer	LF					
Linear feet of 36 in. dia. HDPE-Storm Sewer	LF					
15 in. dia. RCP F.E.S.	EA					
24 in. dia. RCP F.E.S.	EA					
36 in. dia. RCP F.E.S.	EA					
24 in. dia. Concrete Storm Sewer Structures	EA					
36 in. dia. Concrete Storm Sewer Structures	EA					
48 in. dia. Concrete Storm Sewer Structures	EA					
Storm Inlet Casting Assemblies	EA					
Other _____						
				Subtotal		
<u>Sanitary Sewer System</u> Linear feet of 8 in. dia. ESVCP-Sanitary Sewer	LF					
Linear feet of 10 in. dia. ESVCP-Sanitary Sewer	LF					
Linear ft. of 8 in. dia. PVC Truss Pipe-Sanitary Sewer	LF					
Linear ft. of 10 in. dia. PVC Truss Pipe-Sanitary Sewer	LF					
48 in. dia. Concrete Sanitary Sewer Manholes	EA					
Sanitary Casting Assemblies	EA					
Other _____						
				Subtotal		
<u>Traffic Control System</u> Linear ft. of Thermoplastic Pavement Marking	LF					
Linear ft. of 3M Staymark Series 420 Pavement Marking	LF					
Linear ft. of Paint Pavement Marking	LF					
City Standard Street Name Sign Assemblies	EA					
City Standard Stop Signs	EA					
Traffic Signal Complete	EA					

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			Subtotal		
Miscellaneous Items	EA				
Street Trees	EA				
Street Lights	EA				
Multi-Use Trail	LF				
Major Permanent Erosion Control	EA				
Regional/Public Detention Basins & Inlet/Outlet Structures	EA				
Other _____					
			Subtotal		
			Grand Total		

D* = Description, to be added if item is unique or non-standard