

1. Submittal Procedures

1.1 General

Recognizing that properly designed stormwater management systems are essential to the general public's health and welfare within a metropolitan area as the City of Little Rock, the City hereby adopts the following criteria for standard procedures in stormwater management. This manual is intended to serve as a guide for the design of all stormwater infrastructure, including the design of new facilities and the upgrading of existing facilities.

Any company, agency, or person proposing to alter current land use within the City's Planning Jurisdiction shall submit drainage plans to the Department of Planning and Development for approval of a stormwater management and drainage plan before grading permits are issued, or subdivisions are approved. No land shall be developed except upon approval by the Department of Planning and Development, in coordination with appropriate departments.

Exceptions where no stormwater management and drainage plan are required according to Section 29-61 of the City of Little Rock Municipal Code:

- One (1) new or existing single-family structure.
- One (1) new or existing duplex family structure.
- One (1) new commercial or industrial structure located on less than a one-acre individual lot.
- One (1) existing commercial or industrial structure where additional structural improvements are less than five hundred (500) square feet.

The application for a Grading and Land Alteration Permit shall be prepared by the Engineer of Record, who is a licensed Professional Engineer of the State of Arkansas and shall be submitted in accordance with the submittal procedures described in this chapter. The Grading and Land Alteration Permit application shall consist of the Final Drainage Report and the Grading and Drainage Design Plans and Specifications (Plans and Specifications).

1.1.1 Additional Regulatory Requirements

Arkansas Department of Environmental Quality

A NPDES Construction Stormwater General Permit (Permit No. ARR150000) is required for discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter waters of the State or a municipal separate storm sewer system (MS4).

- Small construction sites (disturbing one acre or more and less than five acres) have automatic coverage under the Construction Stormwater General Permit. Under automatic coverage for small sites, it is not necessary to submit any documents to ADEQ and there is no fee. However, the automatic Notice of Coverage (NOC) must be posted at the site prior to commencing construction and a Stormwater Pollution Prevention Plan (SWPPP) must be prepared and made available at the site prior to commencing construction.
- Large Construction Sites (disturbing five acres or more) must submit a Notice of Intent (NOI), a Stormwater Pollution Prevention Plan (SWPPP) and pay a fee to the Arkansas Department of Environmental Quality (ADEQ) in order to obtain coverage for discharges of stormwater associated with construction activity at any site or common plan of development or sale that will result in the disturbance of five (5) or more acres of total land area. Additional information may be found at: <http://www.adeg.state.ar.us/water>

U.S. Army Corps of Engineers

Section 404 of the Clean Water Act requires a permit from the U.S. Army Corps of Engineers (USACE) prior to discharging dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resources projects (such as dams and levees), infrastructure development (such as highways and airports), streambank restoration, and mining projects.

Floodplain Development Permits

Any development within or bordering a Special Flood Hazard Area, as portrayed on FEMA Flood Insurance Rate Maps (FIRMs) is required to obtain a Floodplain Development Permit. Permit requirements and application procedures can be found in Section 13-56 of the City of Little Rock Municipal Code.

1.2 Submittal Procedures

1.2.1 Conceptual Drainage Review

A conceptual drainage plan review with staff is suggested before preliminary platting for the purpose of overall general drainage concept review.

1.2.2 Preliminary Review

A preliminary stormwater and drainage plan, and accompanying information, shall be submitted at the time of preliminary plat submittal. If needed, a review meeting will be scheduled by the Department of Planning and Development with representatives of the developer, including the Engineer of Record, to review the overall concepts included in the preliminary stormwater and drainage plan. The purpose of this review shall be to jointly agree upon an overall stormwater management concept for all phases of the proposed development and to review criteria and design parameters which shall apply to final design of the project. Preliminary drainage plan/study must be approved prior to Preliminary Platting.

1.2.3 Final Drainage Review

Following the preliminary stormwater management and drainage plan review, the final stormwater management and drainage plan shall be prepared for each phase of the proposed project as each phase is developed. The final plan shall constitute a refinement of the concepts approved in the preliminary stormwater and drainage plan with preparation and submittal of detailed information as required in the drainage manual. This plan shall be submitted at the time construction drawings are submitted for approval. No final plat is to be approved until the drainage structures approved on the construction plans are constructed, inspected, and approved by the Department of Planning and Development.

1.2.4 Online Submittal Procedures

The grading and land alteration permit application process is through the Planning and Development Department's online portal (https://permitpayment.littlerock.gov/ips_PD/Views/Login.aspx) New users must register for an online account. The applicant is required to fill out the online application for a grading & land alteration permit and submit the following documents through the portal: grading & drainage plans, sediment and erosion control plans, land survey, drainage report, and soil loss estimate calculations. When filling out the online application, no fields should be left blank. If a field is not applicable to the project, enter "Not Applicable" in those fields on the application. For required numerical value fields, use only whole numbers (no commas or decimal points).

1.3 Plans and Specifications Requirements

Plans and Specifications for plans including stormwater drainage are to be signed by a Professional Engineer registered in the State of Arkansas in accordance with applicable state statutes and State PELS board licensure requirements. Because all Plans, Specifications, and Calculations will be retained by the City for use as permanent records, neatness, clarity, and completeness are very important, and lack of these qualities will be considered sufficient basis for submittal rejection.

Plan sheet size must be 11 inches x 17 inches with all sheets in each set of plans the same size. Plan and profile drawings shall be prepared according to the following:

Plan Drawings

- Maximum horizontal scale 1 inch = 100 feet

Profile Drawings for drainage ditches and storm systems

- Suggested horizontal scale 1 inch = 20 feet
- Maximum horizontal scale 1 inch = 50 feet
- Minimum vertical scale 1 inch = 5 feet

Each sheet in a set of Plans shall contain a sheet number, the total number of sheets in the plans, proper project identification, and the date. Revised sheets submitted must contain a revision block with identifying notations and dates for revisions. A complete legend shall be included in the set of Plans.

To ensure reviews are completed in a timely manner, Plans and Specifications for all proposed improvements must be submitted in the following format during the project application process, where pertinent, and shall include at a minimum: (1) Title Sheet, (2) General Layout Sheet, (3) Grading and Drainage Plan (4) Paving, and/or Building Plans, (5) Three Phase Erosion and Sedimentation Control Plan, (6) Plan and Profile Sheets, (7) Cross Sections, (8) Standard and Special Detail Sheets, (9) Mapping, and (10) Calculations. A detailed checklist of requirements is included in Appendix A.

1.3.1 Title Sheet

The Title Sheet shall include:

1. The designation of the project which includes the nature of the project, the name of the development, city, and state.
2. Project number.
3. Index of Sheets.
4. Vicinity maps showing project location in relation to streets, railroads, and physical features. The location map shall have a north arrow and appropriate scale.
5. A project control benchmark identified as to the location and elevation with notation referencing City monument(s) used to establish the Project Benchmark.
6. Reference to the horizontal and vertical datum for the project. The horizontal datum shall be NAD83, Arkansas State Plane, North Zone. The units shall be US Survey Foot. The vertical datum shall be North American Vertical Datum of 1988 (NAVD88).
7. The name and address of the owner of the project and the name and address of the engineer preparing the plans.
8. Floodplain statement identifying the FIRM panel, date, and flood zone; and,
9. Engineer's seal (every sheet).

1.3.2 General Layout Sheet

The general layout sheet shall include:

1. North arrow and scale.
2. Legend of symbols that will apply to all sheets.
3. Name of subdivision, if applicable, and all street names. Unplatted tracts should have an accurate tie to at least one quarter section corner.
4. Boundary line or project area.
5. Location and description of existing major drainage facilities within or adjacent to the project area.
6. Location of major proposed drainage facilities.
7. Name of each utility within or adjacent to the project area.
8. Standard notes.
9. If more than one general layout sheet is required, a match line should be used to show continuation of coverage from one sheet to the next.

1.3.3 Other Requirements for Plans and Specifications

Other requirements for Plans and Specifications include:

1. The registration seal of the Engineer of Record shall be placed in a convenient place in the lower right-hand corner of each sheet of plans.
2. Elevations on profiles of sections or as indicated on plans shall have survey data or best available topographic data. At least one permanent benchmark in the vicinity of each project shall be noted on the first drawing of each project, and their location and elevation shall be clearly defined.
3. Convention for stationing shall be West to East or South to North from the left to the right side of the sheet respectively.
4. Each project shall show at least 20' of topography on each side. At least 50' of topography shall be shown in areas of channel flow at the property boundary. All existing topography and any proposed changes, including utilities, telephone installations, etc., shall be shown on the plans, profiles, and cross-sections.
5. Revisions to drawing shall be indicated above the title block in a revision box and shall show the nature of the revision and the date made.
6. Utilizing the standard symbols for engineering plans, all existing utilities, telephone installations, sanitary and storm sewers, pavements, curbs, inlets, and culverts, etc., shall be shown with a dithered/grayed out linework. Proposed facilities shall be shown with a solid line and land, lot, easement, and property lines shall be shown with bold and black linework.
7. Lot lines and dimensions shall be shown where applicable.
8. Minimum floor elevation shall be shown on each lot when located in a designated floodplain and in areas where flooding is known to occur. For all occupied structures within a designated floodplain, the top surface of the lowest floor must have an elevation at least one (1) foot or more above the published base flood elevation (BFE). All occupied buildings, whether in or out of a designated floodplain shall have the finished floor elevation (FFE) a minimum of 12" above the land immediately surrounding the building. Reference Section 13-60 of the City of Little Rock Municipal Code for additional information.
9. It shall be understood that the requirements outlined in these sections are only minimum requirements and shall only be applied when conditions, design criteria, and materials conform to the City specifications and are normal and acceptable to the Design Review Engineer.

When unusual subsoil or drainage conditions are suspected, an investigation should be made, and a special design prepared in line with good engineering practice.

1.4 Grading and Drainage Report Requirements

1.4.1 Preliminary Grading and Drainage Report

A Preliminary Grading and Drainage Report will be required at the time of the Technical Plat Review for site development projects. The Preliminary Grading and Drainage Report shall follow the Final Grading and Drainage Report Template provided in Appendix A of this Drainage Manual. In addition to the Preliminary Grading and Drainage Report, also submit preliminary grading and drainage drawings.

1.4.2 Final Grading and Drainage Report

A Final Grading and Drainage Report shall be included in the Final Grading and Drainage Permit Application. Computer model input summary tables and output result tables shall also be provided as part of the Final Grading and Drainage Report. An example of input and output data to report may be found in Appendix B.

A Grading and Drainage Permit will not be issued until the Final Report has been submitted, reviewed, and approved. The Design Review Engineer may request a more detailed drainage study prior to the approval of the Final Grading and Drainage Permit application and issuance of the permit.

If hydrologic and hydraulic studies reveal that the proposed development would cause increased frequency of flooding, increased depth of inundation of structures, or inundation of unprotected structures not previously subject to inundation, then the permit application shall be denied unless one or more of the following mitigation measures are used: (1) onsite storage, (2) offsite storage, or (3) offsite drainage systems improvements.

If it is determined by the Design Review Engineer that offsite drainage improvements are required, then cost sharing will be in accordance with City ordinances. If the City is unable to contribute its share of the offsite costs, the developer shall have the option of: a) building the offsite improvements at his own expense, b) providing detention so as to match pre-development downstream capacities, or c) delaying the project until the City is able to share in the offsite costs.

1.5 Electronic As-Builts

Per Section 31-117(b)(18) and Section 29-5 of the City of Little Rock's Municipal Code, the City of Little Rock Public Work's Department requires as-built plans and information submitted from the Engineer of Record with final plats; request for certificates of occupancies on building permits; and following street and drainage infrastructure construction projects. Plans and information should be provided on public and private stormwater drainage systems installed and/or modified.

Final approval of final plat shall not be given until the Department of Planning and Development receives an electronic copy of the Stormwater Drainage Features As-Built, in either a compatible ArcGIS file format (Esri shapefile or Esri geodatabase), or AutoCAD .dwg file format. The As-Built Plan drawings shall be in State Plane Arkansas North Zone coordinates, with the North American Datum 1983 with units as survey feet. The As-Built drawings shall have the stormwater features drawn in a separate layer in AutoCAD so the features can be easily separated from other layers in the drawing. The associated attribute data table will conform to the approved specifications contained in the "SW Attribute Data Entry Template.xlsx" as provided by the City's Public Works Department. On the As-Built Plans, all Control, Linear and Junction map features will be annotated by a unique identifier that will correspond to the same unique identifier in the "SW Attribute Data Entry Template.xlsx" or GIS

attribute table. All required attribute information for each Linear and Junction feature will be completed in the “SW Attribute Data Entry Template.xlsx” or GIS attribute table as follows, or as indicted by bold column headings in the “SW Attribute Data Entry Template.xlsx”, using the domain values specified in Appendix A of this Drainage Manual.

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