DEPARTMENT OF DEVELOPMENT SERVICES
Development Services Center – 215 W. Hickory Street – Denton, Texas 76201 ***voice:*** **(940) 349-8541**
www.cityofdenton.com

Civil Engineering Plans Application and Checklist

Property Information:

Project Name:_____ **Parcel(s) Tax ID# (Required):**_____

Project Address (Location):_____Total Acres:_____

Related Project Number (If Applicable):_____

Owner Information and Authorization:

Name:_____

Company Name: _____

Address:_____

Telephone: _____Email: _____

CHECK ONE OF THE FOLLOWING:

- ❑ I will represent the application myself; or
- ❑ I hereby designate _____ (name of project representative) to act in the capacity as my agent for submittal, processing, representation, and/or presentation of this development application. The designated agent shall be the principal contact person for responding to all requests for information and for resolving all issues of concern relative to this application.

I hereby certify that I am the owner of the property and further certify that the information provided on this development application is true and correct. By signing below, I agree that the City of Denton (the "City") is authorized and permitted to provide information contained within this application to the public. The City is also authorized and permitted to reproduce any copyrighted information submitted in connection with the application, if such reproduction is associated with the application in response to a Public Information Request.

Owner's Signature**:** _____ Date: _____

STATE OF TEXAS COUNTY OF_____BEFORE ME, a Notary Public, on this_____ day personally appeared_____ (printed owner's name) the above signed, who, under oath, stated the following: "I hereby certify that I am the owner, for the purposes of this application; that all information submitted herein is true and correct."

SUBSCRIBED AND SWORN TO before me, this the _____day of _____, 20_____.

_____

Notary Signature (seal)

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Please note that this checklist is intended to assist developers and design professionals in the preparation of submittals for DRC review and are generally what is needed to facilitate the review of the proposed **Civil Engineering Plans**. A submittal of a complete application will facilitate a timely review. Failure of the applicant to provide required information or obtain a waiver from the DRC Chair will result in application not being processed. Under special circumstances, additional items may be required through the Development Review Committee process prior to approval.

Items to be submitted:

- ❑ **Application and Checklist.**
- ❑ **Associated Fee(s): Fees will be assessed by Engineering once submitted.**
- ❑ **Project Narrative:** Written proposal for the project.
- ❑ 24" x 36" **Engineering/Support Documents** if required. Engineering/support documents are required for all public improvements, including sidewalks. Engineering/support documents will be drawn to a plan view scale not smaller than 1" = 100' with exception to the drainage area map which may be a scale not smaller than 1" = 400' unless otherwise approved by the DRC Chair.
- ❑ All documents shall bear appropriate seals, stamps or other validations/certifications of work as applicable in accordance with State law and local requirements.
- ❑ **All documents are required to be PDF files, each sheet will be a single item and will be uploaded into ProjectDox..**

Construction Plan Requirements:

Submit construction plans for ALL public improvements with, or prior to the submission of the final plat document: Streets, sidewalks, water lines, sewer lines, and drainage facilities.

GENERAL:

- ❑ Construction plans greater than one (1) sheet shall contain a cover sheet showing the name of the project, the engineer of record including address and phone number, the name of the developer or owner including address and phone number.
- ❑ Plans shall contain a copy of the final plat document for reference.
- ❑ Each sheet of the construction plans shall be sealed by the engineer of record or should include a note signed by the engineer of record that the plans are not intended for construction and were prepared under the authority of the subject engineer including registration number of the engineer.

TREE RELATED IMPROVEMENTS:

- ❑ Street Tree Master Plan
- ❑ Notes to identify trees to be preserved and protected under mandatory preservation regulations. Notation shall limit any future unauthorized land disturbing activity that would harm the trees designated for preservation.

TRANSPORTATION RELATED IMPROVEMENTS:

- ❑ Plan and profile of all streets at 1"=40 or larger horizontal and 1"=4' vertical or larger scale. Profile views should line up with and be placed directly under the corresponding plan view
- ❑ Curb return elevations in plan view on the street and on the intersecting street.
- ❑ Elevations in profile every 100 feet and at changes in slope for the centerline and /or the back of curb on both sides of the street. Elevations in profile every 25 feet through a vertical curve.
- ❑ Percent grades.
- ❑ Edge of pavement, particularly where concrete flatwork and asphalt join.
- ❑ Tie-ins to existing street network, with barricade removal, patching and other necessary work shown.

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- ❑ Horizontal and vertical curve data.
- ❑ Sidewalk ramps, flume entrances, and driveway locations when driveways that are intended to be constructed with street improvements.
- ❑ Sidewalks that are adjacent to the public street – see sidewalk comments below.
- ❑ Sidewalks and Bicycle Paths – Construction plans are required for all public sidewalks and bicycle paths. If construction plans for any streets are required, the sidewalk may be shown adjacent to the street. If the street is already in existence, sidewalk plans must be submitted and labeled "Sidewalk Plans." Sidewalks shown on a site layout submitted for the purpose of a building permit are not sufficient.
- ❑ All sidewalks must comply with the Texas Accessibility Standards for general ramps.
- ❑ Notation of the treatment of the sidewalk at intersections of driveways.
- ❑ Barrier free ramps shown correctly with surface color and texture treatment noted.
- ❑ All standard and special details for sidewalks, bike paths and ramps.
- ❑ All appropriate standard and special details and pavement cross-sections.
- ❑ Guardrails and barricades must be noted as necessary.
- ❑ Pavement marking plans and permanent signage plans.
- ❑ Traffic control plans showing how traffic will be handled on existing streets during construction. Traffic Control Plans must be designed in accordance with the Texas Manual of Uniform Traffic Control Devices.
- ❑ Casing or conduit for future utility crossings, if necessary.
- ❑ The following Utility & Drainage information shall be shown on construction plans for transportation improvements:
  - ❑ All existing adjacent and conflicting utility and drainage features are shown in the plan view. Nearby utilities may be shown for reference in the profile view.
  - ❑ Manholes, junction boxes, valve boxes and other at-surface features shown and labeled in plan view.
  - ❑ All proposed adjacent and underlying utility & drainage features shown in plan view.
  - ❑ All subsurface utility and drainage crossings shown in profile view.
  - ❑ Inlets, flumes, and other structures that may affect the street shown in plan view.

UTILITY RELATED IMPROVEMENTS:

SANITARY SEWER:

- ❑ An overall plan view of the sanitary sewer system layout for the entire development.
- ❑ Show stationed plan and profile views of all sanitary sewers (1"=40' or larger horizontal and 1"=4' or larger vertical scales).
- ❑ Specify size and type of material in plan and profile views.
- ❑ Show flow line elevations of proposed sanitary sewers in the profile views on 100 foot intervals and in addition at entrances and exits of manholes and tie-in's to existing systems. Proposed ground elevation over the sanitary sewer should be included in the profile view.
- ❑ Show the location and stationing of all proposed manholes, clean outs and service lines in the plan view.
- ❑ Show all utilities and storm drains existing or proposed that will cross over or under the sanitary sewer.
- ❑ Show the location of lot lines, easement lines, ROW limits, locations of proposed and existing water mains, storm sewers and other utility lines in the plan view.

WATER MAINS:

- ❑ An overall plan view of the water system layout for the entire development.
- ❑ Show stationed plan view of all water mains.
- ❑ Show the location of lot lines, easement lines, ROW limits, locations of proposed and existing sanitary sewers, storm sewers and other utility lines in the plan view.

- ❑ Call out and include stationed locations of all valves, bends, crosses, tees, fire hydrants, reducers, and other fittings and appurtenances in the plan view.
- ❑ Show stationed profile view of all proposed water mains 12 inches in diameter or larger (1"=40' or larger horizontal and 1"=4' or larger vertical scales).
- ❑ When profile views are required, show flow line elevations of proposed water mains in the profile views on 100 foot intervals and in addition at bends and connections to existing systems.
- ❑ Call out and show the stationed location of all valves, fittings and other appurtenances in the profile view.
- ❑ Specify size and type of material in plan and profile views.

DRAINAGE RELATED IMPROVEMENTS:

DRAINAGE AREA MAP:

- ❑ Normally, use 1" 100' scale for on-site, and 1" 200' for off-site. Scale may be reduced to 1"= 200' onsite and 1" = 400' offsite if the map is legible and the area is large enough to justify such a scale. Show match lines between any two (2) or more maps.
- ❑ Show existing and proposed storm drains and inlets with clearly different line type designations. Describe in legend. In lieu of legend, all existing improvements may be labeled as such on the drainage plan.
- ❑ Indicate sub-areas for alley, street, and off-site areas. Show flow arrows for each area.
- ❑ Indicate design points of flow concentration for cumulative areas on Drainage Plan and list the design point on the Drainage Calculations Table.
- ❑ Indicate approved zoning designation or future land use designation for each area shown on the Drainage Area Map.
- ❑ Indicate peak runoff rate at all inlets, dead-end streets and alleys, or to and from adjacent additions or acreage on the Drainage Area Map. Label peak discharges accumulated in the storm sewer system at each analysis point.
- ❑ Provide runoff calculations for all areas showing acreage, runoff coefficient, and inlet time. (Q = CIA Table or FORM A). List the "C Value Adjustment factors used in the calculations.
- ❑ Label all crests, sags, and street and alley intersections with flow arrows on Drainage Area Map.
- ❑ Provide open channel calculations Table and formulae used, provide Manning's "N" values.
- ❑ Show limits of 100-year fully developed Flood Plain and Floodway on drainage area map. List the FIRM Panel Reference Number and Date, and/or LOMR Case Number and effective date. Label the 100-year flood elevations from the FIRM.
- ❑ Add a note that specifically describes how the flood plain limits were transferred from the FIRM Panel, (e.g.. either by scaling distances or by interpretation of elevations onto the site topography.
- ❑ Provide inlet capacity formulas used in calculations, and Inlet Design Table following Computation Sheets 6.1 or 6.2 or similar.

STORM SEWERS:

- ❑ Show stationed plan and profile of all storm sewers (1"=40' or larger horizontal and 1"=4' or larger vertical scales).
- ❑ Specify size and type of material of all pipes (optional).
- ❑ Use heavier than Class III pipes where crossing railroads, areas of deep fill and areas subjected to heavy loads. Provide load calculations upon request.
- ❑ Specify concrete strength and reinforcing steel strength and minimum steel cover for all structures.
- ❑ Provide culvert design calculations following Drainage Criteria Manual requirements. State the tail water condition used for culvert design.
- ❑ Provide construction details for all headwalls and aprons for all storm sewer outfalls. State the rock riprap size and specifications, and thickness of blanket for rock rip rap. Submit hydraulic data and calculations for selection of riprap size used.
- ❑ Show proposed grading contours at headwalls and culvert ends to confirm the slopes will remain within designated right-of-way or easement width.
- ❑ Provide calculations and construction details for Energy Dissipaters when specified by the Design Engineer.
- ❑ Where fill is proposed for trench cut in creeks or outfall ditches, provide compaction and testing specifications and testing frequency.
- ❑ Any off-site drainage work to downstream property will require an easement. Easement shall be sized such that the developed flows can be conveyed within the easement. Submit field notes for off-site easement that may be required (private development only).

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PLAN AND PROFILE PLAN:

- ❑ Indicate property lines and lot lines along storm sewers, and show easements with dimensions.
- ❑ Provide separate plan and profile of storm sewers. The storm drain pipes shall also be shown in Plan on paving plans with a dashed line, and on sanitary sewer profiles showing the full pipe section.
- ❑ Tie storm sewer system stationing with paving stations.
- ❑ Show and label pipe sizes, curb inlets, manholes, junction boxes, etc. in plan and profile.
- ❑ Show hydraulics on each segment of pipe profile to include: Q_{100}, C = Manning full flow capacity; S, V, $V^2/2g$. Plot and label HGL elevations and friction slope whenever full flow in the pipe system is anticipated.
- ❑ Show curve data for all storm sewer system. In special circumstances, the City Engineer may approve curves in pipes. Curves in pipe shall have a radius of one hundred (100) feet or greater.
- ❑ Show all existing utilities in plan view. On storm sewer profiles, the sanitary sewer profiles will be shown for lines 12 inches in diameter or greater.
- ❑ Indicate existing and proposed ground line and improvements on all street, alley, and storm sewer profiles.
- ❑ Show future streets and grades and drainage system layout and connection points where applicable.
- ❑ Indicate flow line elevations of storm sewers on profile on 100-foot stations and at the entrance and exit of manholes and junction boxes, show pipe slope (percent grade).
- ❑ Show dimensioned details of all junction boxes, headwalls, storm sewers, flumes, and manholes that are not part of a standard drainage facility.
- ❑ Show water surface at outfall of storm drain in profile and label elevation.
- ❑ On all dead-end streets and alleys, show grade out to "daylight" for drainage on the profiles and provide erosion control. Show typical section and slope of "daylight" drainage.
- ❑ At sags in pavement, provide a positive overflow swale and easement to act as a safety path for failure of the storm drain system. Minimum finished floor elevations will be shown on the plat to protect building against flooding should the positive overflow be used.
- ❑ Provide scaled and dimensioned cross sections for road, railroad and other ditches with profiles and hydraulic computations. Show design water surface on profile.

LATERALS, INLETS @ INTAKES:

- ❑ Show laterals on trunk profile with stations.
- ❑ Provide lateral profiles for all laterals longer than 25 feet or with utility crossing.
- ❑ Calculate hydraulic grade line for laterals and inlets to insure collection of storm water. For all inlets, provide H.G.L. and hydraulic data on profile for all profiled laterals.
- ❑ Indicate runoff concentrating at all inlets and direction of flow. Show runoff for all stub outs, pipes and intakes.
- ❑ On plan view, indicate size of inlet, lateral size, flow line, top-of-curb elevations, paving station, and inlet designation number.

DETENTION OR RETENTION POND: *(When required by the Subdivision Regulations)*

- ❑ Provide drainage area map and show all computations for runoff affecting the detention basin.
- ❑ Provide a plot plan with existing and proposed contours for the detention basin and plan for structural measures.
- ❑ Where earth embankment is proposed for impoundment, furnish a typical embankment section, and specifications for fill include profile for the structural outflow structure.
- ❑ Provide structural details and calculations for any item not a standard detail.
- ❑ Provide detention basin volume calculations and elevation versus storage curve.
- ❑ Provide hydraulic calculations for outflow structure and elevation versus discharge curve.
- ❑ Provide routings or modified rational determination of storage requirements, demonstrating that critical duration is used (permitted for areas of 1000 acres or less).
- ❑ Provide computation sheet 10-1 from Drainage Criteria Design for all proposed detention and retention ponds or similar.
- ❑ Show fencing as required around detention area.

BRIDGE:

- ❑ Show geotechnical soil boring information on plans.
- ❑ Show bridge sections upstream and downstream.
- ❑ Provide hydraulic calculations on all sections.
- ❑ Provide structural details and calculations with dead load deflection diagram.
- ❑ Provide vertical and horizontal alignment.
- ❑ Show soil erosion protection measures and concrete rip-rap.
- ❑ Provide bridge scour analysis.

GRADING PLAN:

- ❑ Provide grading plan that shows proposed contours and/or elevations that address lot to lot drainage.
- ❑ Provide cross section of typical swale, berm, channel, etc. as a component of grading plan.
- ❑ Where reclamation of the 100-year floodplain is involved, provide a note on grading plan that states: Upon completion of public improvements, submission of all documents necessary to obtain a Letter of Map Revision (LOMR) from FEMA shall be submitted to the City of Denton. The LOMR will then be reviewed, and sent to FEMA prior to acceptance of the subdivision. The LOMR is necessary to remove any lot within the floodplain from the Flood Insurance Rate Map. All changes or additional data, as requested by FEMA upon its review of the LOMR, are the responsibility of the owner and/or developer.

CHANNELS:

- ❑ Provide typical section for channel improvements. Include a section where the channel changes in its dimensions or configuration.
- ❑ Provide plan and profile showing existing contours and proposed centerline, top-of-bank, flow line elevations, stationing and 100-year water surface elevation.
- ❑ Provide hydraulic calculations on all sections.
- ❑ Provide structural details for channel section that involves concrete, gabions, paving material, etc
- ❑ Show soil erosion protection measures and concrete rip-rap.

ALL DOCUMENTS SHALL BEAR APPROPRIATE SEALS, STAMPS OR OTHER VALIDATIONS/CERTIFICATIONS OF WORK AS APPLICABLE IN ACCORDANCE WITH STATE LAW AND LOCAL REQUIREMENTS.

Fees and Permits:

STREET SIGNS:

The City of Denton erects all street signs within the public right-of-way. The developer will be billed prior to final project acceptance for the necessary street signs within any subdivision.

STREET LIGHTING:

Applicant shall contact Denton Municipal Utilities for all street lighting issues. All street lighting issues must be finalized prior to the acceptance of the subdivision. This includes any payment if applicable.

TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PERMITS:

A TxDOT Permit is required for all public improvements that are proposed in TxDOT Right of Way. As TxDOT permission may affect street layout, please be aware that no final plat will be approved until a TxDOT permit is approved for street locations. All other TxDOT permits must be applied for and received prior to commencing work in the TxDOT right of way. TxDOT permits must be submitted through the City's right-of-way division to TxDOT for approval. Please contact the right-of-way division if a permit is required.

1.) Submit five sets of plans on 11" x 17" for the area where activities are proposed within the TxDOT right-of-way: plan, profile and details. TxDOT or City of Denton right-of-way shall be clearly shown and labeled as such.

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2.) Include all necessary details and dimensions for work proposed within the right-of-way, bore pits, receiving pits, edge of pavement, borrow ditch sections, etc.

3.) A traffic control plan ***must*** be included. Traffic Control Plan must comply with the most recent edition of the Texas Manual of Uniform Traffic Control Design and be sealed by a Professional Engineer.

4.) Provide a brief written summary of the proposed work. Include the linear footage, type and size of all proposed utility construction or installation. If constructing manholes, include the type and size.

5.) Approval letter from the Texas Department of Licensing and Regulation for all sidewalks or other pedestrian routes within the right-of-way.

RAILROAD PERMITS: The applicant is responsible for obtaining all right-of-way permits for entry and use of railroad property. The contractor is the solely responsibility to submit the paperwork for & obtain the "Contractor's Right-of-Entry" permit, when it comes to Railroad crossings. This "Contractor's Right-of-Entry" permit is in addition to permits obtained for perpetual use of the right-of-way for utility purposes.