

**Austin County
Engineer's Office**

One East Main Street
Bellville, Texas 77418

Phone: 979-865-5911

Email: Engineer@austincounty.com

Review Fee:
See Fee Schedule

Engineering Review Application

☐ Subdivision (without new roads) _____ lots

☐ Subdivision (with new roads) _____ lots

Linear feet of new roads: _____

☐ Commercial development

☐ Other: _____

Subdivision or Development Name: _____

Due to high submittal volumes and the department's continued efforts to provide the very best customer service to all our applicants, incomplete submittals cannot be accepted if all items listed below are not included and initialed.

- ☐ A pre-application meeting prior to submittal is **required**.
- ☐ Preliminary Plat approved by the County Commissioner and the County Engineer
- ☐ If the development is in the ETJ of a city the Civil plans shall be submitted to the City.
- ☐ Approved road names and locations shall be obtained from the 911 Addressing Department.
- ☐ If the development is adjoining a TxDOT road, TxDot driveway and drainage approval shall be provided.
- ☐ A traffic impact study, if required.
- ☐ Flood study submitted for review, if required.
- ☐ Letter from the water provider stating they will serve the development.
- ☐ All fields on application are complete.
- ☐ Review fee paid in full.
- ☐ One complete electronic copy of the civil plans to Engineering.
- ☐ Two 24"x36" hard copies of the civil plans to Engineering. Plans must be stapled or bound per Order of Sheets on page 2.

*Additional submittals and fees may be required after initial engineering review. Engineering staff will contact the applicant if additional submittals and/or fees are required.

Property Information

Site Address/General Location:

Acres: _____ **Property ID:** _____

Precinct: _____ **Floodplain:** _____

Legal Description:

Proposed Use of Property:

Applicant Information

Applicant Name:

Company Name:

Mailing Address (No PO BOX):

City/State: ZIP:

Main Phone: Cell Phone: Email:

Property Owner:

Mailing Address (No PO BOX):

City/State: ZIP:

Main Phone: Cell Phone: Email:

I, the applicant/authorized agent or owner of the property on this application, hereby certify that I have reviewed the Engineering Plan Submittal Process Packet, the Austin County Quality Growth Initiatives—Volume I, II, and III and the Austin County Septic Order. With this application, I state this request meets any deed restrictions on this property. I am aware that these regulations require all roads, streets, and other improvements within the subdivision are to be designed according to the specifications outlined. I will be responsible for all public drainage and repairs until the County Commissioners' Court accepts the above-referenced subdivision. I also agree that Austin County is authorized and permitted to provide information contained within this application, including the email address, to the public and in response to a Public Information Request.

I hereby certify that I am the owner of the property or authorized agent representing the owner and attest that the information provided within this application is true and correct. ***This application and permit shall not be valid and may be revoked if any false statements are made within this application or if it conflicts with any existing deed restrictions or other applicable local, state, or federal regulations.***

Applicant/Authorized Agent Printed Name

Applicant/Authorized Agent Signature

Date

Owner Printed Name

Owner Signature

Date

Civil Plan Checklist

Requirements for Initial Site Plan

- ☐ One site map showing the property location, existing roads, proposed subdivision lot lines, lot sizes, and road frontage lengths.
- ☐ Show any existing drainage structures/facilities (ponds, culverts, dams, etc.).
- ☐ Any other necessary information for a complete engineering review.

Requirements for All Civil Plan Sheets

- ☐ Title block with engineering firm information, registration number, engineer's seal, sheet title, and page numbers clearly shown.
- ☐ A minimum of two benchmarks are required on all pertinent sheets.
- ☐ North Arrow and scale clearly shown on each plan sheet.
- ☐ Legend (relevant to each sheet) showing all special symbols, line types and hatch used.
- ☐ Street names labeled on all existing, proposed, and future streets.
- ☐ Lot & Block numbers and/or ownership info shown for all lots.
- ☐ Caution notes shown when working next to any existing utilities (public and franchise).

Order of Sheets

1. Cover Sheet
2. Approved Preliminary Plat
3. Erosion Control Plan
4. Grading Plan
5. Existing Drainage Area Map
6. Proposed Drainage Plans
7. Detention/Retention Pond Plan
8. Water Plan
9. Paving Plan
10. Signage Plan
11. Traffic Control Plan (if required)
12. Standard Construction Details

Erosion Control Plan:

- ☐ Existing and proposed contours clearly shown/labeled.
- ☐ Existing and proposed channels shown.
- ☐ List the total disturbed acreage including offsite and delineate limits of construction.
- ☐ Appropriate BMP's used and identified.
- ☐ BMP details provided, should be per current NCTCOG/iSWM standards dated April 2010 or later.
- ☐ Stockpile area and batch plant areas shown and labeled.
- ☐ Areas to be sodded or seeded shown and specified with permanent perennial vegetation.
- ☐ Areas of permanent erosion control (other than vegetation) clearly shown.

Grading Plan:

- ☐ Both onsite and offsite existing/proposed contours shown clearly labeled.
- ☐ Date and name of firm who prepared geotechnical report with corresponding note stating: "Work shall be done in accordance with the Geotechnical Report by____, dated_____."
- ☐ Drainage clarified by flow arrows, high points, sags, ridges, and valley gutters.
- ☐ Minimum finished floor elevations shown adjacent to floodplains, ponds, creeks/channels, etc.
- ☐ Cross-sections and flow data for all swales and open channels provided.
- ☐ Typical lot grading details.

Existing Drainage Area Map:

- ☐ Existing contours clearly shown for the entire drainage basin, both onsite and offsite.
- ☐ Drainage areas delineated and labeled.
- ☐ Flow arrows for surface drainage shown.
- ☐ Existing drainage structures / facilities shown with existing Q25, Q100, Qcap, V25, and V100.
- ☐ Outfall designation labels shown.
- ☐ Existing drainage easements shown and labeled.
- ☐ Hydrologic Peak Runoff Rate Computation Table shown rounded to two decimal places.
- ☐ Time of concentration and weighted runoff coefficient calculations shown as needed.
- ☐ Existing FEMA 100-yr floodplain delineated.
- ☐ Table showing area, runoff coefficient, rainfall intensity, time of conc., Q5, Q25 & Q100 for each outfall.

Proposed Drainage Area Plan:

- ☐ Existing contours clearly shown for entire drainage basin, both onsite and offsite.
- ☐ Drainage areas and sub areas delineated and labeled.
- ☐ Flow arrows for surface drainage shown.
- ☐ Existing and proposed channels shown with hydrologic and hydraulic calculations.
- ☐ Outfall designation labels shown with proposed Q5, Q10, Q25, Q100, Qcap, and V100.
- ☐ Detention pond shown and labeled drainage easements shown and labeled.
- ☐ Hydrologic Peak Runoff Rate Computation Table shown rounded to two decimal places.
- ☐ Time of concentration and weighted runoff coefficient calculations shown as needed.
- ☐ List the total site impervious area (ft² of all paving, roof areas, etc.) – Commercial Projects.
- ☐ FEMA 100-yr floodplain, and Fully Developed 100-yr floodplain delineated (if required).
- ☐ Driveway culvert sizes for each proposed lot (minimum 18" CMP or RCP).
- ☐ Flood Prevention Sites (NRCS structures) and easements as needed.
- ☐ Table showing area, runoff coefficient, rainfall intensity, time of conc., Q5, Q25 & Q100 for each outfall.
- ☐ A summary table showing Q100 for existing, developed with detention and bypass to each outfall.

Detention/Retention Pond Design & Hydraulic Calculations:

- ☐ Detention/retention pond design calculations shown, method used specified.
- ☐ Provide pond volume sizing calculations and/or computation table.
- ☐ For areas 50 acres or less outflow shall be no greater than 0.125cfs per acre of the site.
- ☐ For areas less than 50 acres the detention volume shall not be less than the minimum detention as calculated by the chart/graph.
- ☐ Provide stage-discharge table and/or curve information.
- ☐ Provide weir and/or orifice sizing calculations for outfall structure.
- ☐ Cross-section of pond including side slopes, normal pool elevation (if applicable), show 5yr, 10yr, 25yr, and 100yr WSE.
- ☐ Detail of pond outfall structure showing all elevations, as necessary.
- ☐ Overflow spillway location and design information provided (as needed).
- ☐ Show and label all existing/proposed utilities and easements.

Storm Drain Plan (As Needed):**Plan View:**

- ☐ Show and label all existing and proposed utilities.
- ☐ Dimension location/spacing of utilities.
- ☐ Label inlet type, inlet block-outs, size, paving station, and top of curb elevation at a minimum.
- ☐ Label type and size of existing/proposed structures (i.e. headwalls, manholes/junction boxes).
- ☐ Label type, size, and dimensions of all permanent outfall erosion protection.
- ☐ Show centerline stationing for pipe with PC & PT stations and curve data.
- ☐ Label centerline stations for lateral connections, manhole & junction box locations, pipe size changes, head walls, and future stub out connections.
- ☐ 100-yr gutter flows and bypass shown at each inlet along public streets and fire lanes.
- ☐ FEMA 100-yr floodplain shown.
- ☐ Provide applicable construction details for all drainage structures.

Profile View:

- ☐ Existing and proposed ground line at centerline of pipe shown and labeled correctly.
- ☐ Show all hydraulic data including design flow, full flow capacity, friction slope, velocity, and velocity head. For partial flow conditions show design flow, full flow capacity, normal depth, normal velocity, and velocity head.
- ☐ Label station and flowline elevation information for all structures, crossings, laterals, etc.
- ☐ Label flowlines at every 50-foot station.
- ☐ Indicate length, type/class, slope, and size of all storm pipes.
- ☐ Show and label 100-yr and/or 10-yr HGL, label HGL elevations at all junctions.
- ☐ All utility crossings and parallel sewer lines shown in profile.
- ☐ 100-yr WSE shown at outfall for ponds, creeks, and channels.
- ☐ Open channels shall also include a typical cross section with all hydraulic data.

Water Plan:

- ☐ Shall be approved by water provider.
- ☐ Show water line notes.
- ☐ Show fire hydrant locations.
- ☐ If symbols used in plan, include appropriate legend for clarification.

Paving Plan:**Plan View:**

- ❑ For all new roads, a site-specific geotechnical evaluation and concrete mix design submitted with plans.
- ❑ Typical road section details shown (fire lane, parking areas, streets, subgrade, etc.).
- ❑ For roads, centerline stationing at every 100', PC's, PT's, and curve data labeled.
- ❑ Show cul-de-sac radii (ROW and paved portion).

Profile View:

- ❑ Existing ground line for left, right, and center of right-of-way shown.
- ❑ Pavement elevations labeled at every 50-foot stations.
- ❑ Vertical Curve stationing and elevations including PVC, PVI, PVT, crest/sag location, curve length, algebraic grade difference, and "K" values shown at a minimum.
- ❑ Road grades shown to the nearest 0.01'.
- ❑ Show "compacted fill" callout/note for all areas of fill.
- ❑ Show left and right ditch flowlines (one profile will suffice if they are the same)
- ❑ Show road crossing culverts.

Signage Plan (See Next Page for Additional Details):

- ❑ Show all stop signs and traffic related signage locations.
- ❑ Verification of fire hydrant placement relative to stop signs (3' clear zone).
- ❑ If symbols used in plan, include appropriate legend for clarification.

Traffic Control Plan (As Needed):

- ❑ Design site specific traffic control plan, TxDOT standard alone is inadequate.
- ❑ Indicate posted speed limit or design speed.
- ❑ Show all sign designation, sign graphic, and sign size.
- ❑ Show channelization device type, locations, and spacing.
- ❑ Show all traffic barricades and indicate type.
- ❑ Show all detour routes and detour signage.
- ❑ Show flagger locations, where applicable.
- ❑ Show message boards with text for two phases.
- ❑ Show flashing arrow boards, where applicable.
- ❑ If symbols used in plan, include appropriate legend for clarification.

Signage Plan Details:

- ❑ Street signs shall be comprised of 6-inch-tall blades with 4-inch-high letters as shown below with first letter capitalized.
- ❑ Confirm with the precinct office for background color of street signs.
- ❑ All signs shall have a High Intensity Prismatic Sheeting (meeting middle grade performance standards and ASTM D4956 Type IV) PLUS UV Overlay. This reflective sheeting uses polycarbonate cube corner technology and is often used for reflective traffic and road signs. <— insert that in the signage plan details.
- ❑ Signpost shall be 1 3/4" x 10 feet (14 Ga) Galv/Per Post—Telespar with a 3-foot anchor that goes into the ground.
- ❑ Children at Play signs shall be installed at each entrance.
- ❑ Weight Limit signs shall be installed at each entrance and at various points within the subdivision (30"x24").
- ❑ Speed Limit signs shall be installed at each entrance and at various points within the subdivision (24"x18"). Speed limit should be 30mph.
- ❑ All signs shall meet the sizes below. Include each detail in the signage plan.
- ❑ For other sign details, please contact the precinct office.
- ❑ All signs and installations shall conform to the latest version of Texas MUTCD.

For Drainage areas <50 Acres:

The maximum allowable release rate from the detention facility shall be limited to 0.125 cfs/acre. This release rate shall not be exceeded until the 100yr event.

$$Q \text{ (cfs)} = \text{Acreage} \times 0.125 \text{ (cfs/acre)}$$

Detention storage may be calculated using the small watershed method; but the detention volume shall never be less than the minimum volume calculated from the following Formula:

Detention Volume (min): (Acre-feet)

Acreage: Total Property Acreage.

% Impervious = (Impervious Acreage + Detention Pond Acreage) / (Total Property Acreage)

The percentage of impervious area used for the calculation shall include all areas that are paved or where gravel or crushed stone is used, all rooftops and other covered areas and all other impervious surfaces including the portion of the detention pond below the 100-year design water surface elevation.

The minimum detention required shall be based on the following:

- a. Commercial Development and/or Urban Subdivision:
Detention Volume Min. = (Acreage) \times (0.60+((% impervious/100) \times 0.40)
- b. Rural Subdivision:
Detention Volume Min. = (Acreage) \times (0.25+((% impervious/100) \times 0.75)

Outlet Pipe Sizing (restrictor pipe)

The size of the outlet pipe that is required to pass the maximum allowable release rate up to the 100-year storm is to be computed assuming outlet control, by establishing a maximum ponding level in the detention facility during the 100-year storm and assuming a tailwater condition at the downstream end of the outlet pipe (top of pipe) or at a depth in the outlet channel associated with the maximum release flowrate, whichever is higher.

For Drainage areas 50< Acres but less than 640 acres:

The above method may be used or other accepted methods. But the outflow rate shall not be greater than the Acreage \times 0.125 (cfs/acre) unless it can be proven that the downstream ditch within its banks can handle the 100yr event for the entire watershed fully developed. The Developer may be required to make downstream improvements if capacity is not available or further restrict their outflow.

Drainage must meet the most stringent drainage and or detention requirements:

- County
- TxDot
- City (if in city ETJ).

Developments with Wastewater treatment plants shall include flow in drainage calculations. And adjust c factors for constant saturated soil condition.

Outflow is capped at 0.125cfs/acre until the 100-year event overflow is met.

Detention is based on the method chosen; but, is subject to the minimum detention volume shown above.

Fire Lane:

Dimensions (IFC 503.2.1) Fire apparatus access roads shall have an unobstructed width of not less than **20** feet. (see examples on page 3)

Fire apparatus access road to extend within one hundred fifty (150) feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility. [Ref. IFC 2018 Section 503.1.1] o NOTE: For building(s) equipped with an approved automatic sprinkler system, this distance can be increased to two hundred (200) feet. [Ref. HC Amendments to 503.1.1 Exception 1.1] (see examples on page 3)

All-Weather Access Roads during Construction (Paved Roadways):

Access roads shall be in place prior to going vertical with combustible construction or going vertical higher than 6 feet with non-combustible construction.

Required Access (IFC 3310) Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions, and maintained until permanent fire apparatus access roads are available.

Fire Apparatus Access Roads:

(IFC Chapter 5 & Appendix D)

Fire Apparatus Access Road – A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as *fire lane*, public street, private street, parking lot lane and access roadway.

Dimensions (IFC 503.2.1) Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (exception: width shall be 26 feet minimum when IFC Appendix D105.1 & D105.2 applies), exclusive of shoulders, except for approved security gates and an unobstructed vertical clearance of not less than 13 feet 6 inches.

Turning Radius (IFC 503.2.4) The required turning radius of a fire apparatus access road shall be designed to accommodate the following radiuses: Inside turning radius of 25 feet minimum & outside turning radius of 50 feet minimum.

Dead Ends (IFC 503.2.5) Fire apparatus access roads that have a dead-end in excess of 150' in length shall be provided with an approved area for turning around fire apparatus per in accordance with IFC Appendix D, Figure D103.1 and Table D103.4.

Security Gates (IFC 503.6 and D103.5) Security gates installed across a fire apparatus access road shall be provided with an approved means of emergency operation and be a minimum of 20 feet wide.

Site Access:

Buildings exceeding three stories or 30 feet in height (IFC Appendix D104.1) Buildings or facilities exceeding 30 feet or three stories in height shall have at least two means of fire apparatus access for each structure.

Buildings exceeding 62,000 square feet in area (IFC Appendix D104.2) Buildings or facilities having a gross building area of more than 62,000 square feet shall be provided with two separate and approved fire apparatus access roads. *Exception:* Projects having a gross building area of up to 124,000 square feet may have a single approved fire apparatus access road, when all buildings are equipped throughout with approved automatic sprinkler systems.

Projects having more than 100 dwelling units (IFC D106) Multi-family residential projects having more than 100 dwelling units shall be equipped throughout with two (2) separate & approved fire apparatus access roads.

Exception: Projects may have up to 200 dwelling units utilizing a single access road, if the project is protected throughout with a fire sprinkler system (including all non-residential occupancies).

Remoteness (IFC Appendix D104.3) Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

Buildings exceeding 30 feet in height:

(IFC Appendix D)

Aerial Fire Apparatus Access Roads (IFC Appendix D105.1) Where the vertical distance between the grade plane (Approved Fire Lane) and the highest roof surface exceeds 30 feet in height, an approved aerial fire access road shall be provided. *For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater.*

Width (IFC Appendix D105.2) Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet, exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

Proximity to building (IFC Appendix D105.3) At least one of the required access routes meeting the condition of IFC Appendix D105.2 shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. This side of the building shall be approved by the Fire Code Official.

bottom of the Ditch or stream/river>

	Depth
Phone Line (conventional):	2ft
Water Line :	3ft
Sanitary Sewer	4ft
Fiber optic	5ft
Electric	8ft
Pipeline Depth	12ft Crossing Drainage Ditch, Stream, River or Roadway
Pipeline Depth	5ft below natural ground (Minimum) any part of Austin County.

