



CITY OF ELGIN
TRC DEVELOPMENT REVIEW CHECKLIST
(REVISED August 23, 2018)

Subdivision Name: _____

1. Drainage

- Hydrology

_____ Developer's Engineer has provided all calculations

_____ Post development runoff from site must be less than or equal to pre-development runoff to all outlet locations

_____ Existing 100 year floodplain delineated on the plans (if applicable)

Watershed area to project

_____ Delineated on the plans for all areas

_____ Percent runoff for pre development & post development for all areas

_____ Runoff factors for all areas (C factor)

_____ Storm intensity (Bastrop/Travis County-TxDOT)

_____ Time of concentration for all areas

- Storm Sewers

Sizes/hydraulic data

_____ Minimum size of 18"

_____ Plan/Profile, grades

_____ Design capacity vs. anticipated flow

Material specifications (RCP only)

_____ Backfill/bedding details per construction standards

_____ Amount of cover/fill over pipe

Junction boxes/manholes

_____ Minimum of one access point every 500'

_____ Construction details per construction standards

Culverts/driveway crossings (bridge crossings)

_____ Headwater/tailwater depth and velocity

- _____ Construction details
- _____ Bedding material
- _____ Min. 100 yr design, highest recorded flood event, or USCOE standard project flood
- _____ Minimum 2' above high water level
- _____ Meets AASHTO requirements
- _____ Pedestrian access design
 - _____ Inlets/drop boxes/headwalls
 - _____ Sizes, quantity, location
 - _____ Minimum 10' length w/ 6" throat opening for inlets
 - _____ Drop-type outfall structures and Type B headwalls w/ wingwalls per TxDOT
 - _____ Calculations showing spacing of inlets is sufficient to prevent street flooding
 - _____ Capacity
 - _____ Sized for capability of 1 cfs of opening for a throat height of 5"
 - _____ Construction details per construction standards
 - _____ Minimum 22" manway opening for access into structures
 - _____ Miscellaneous
 - _____ Are there any structural issues or concerns for proposal drainage system?
 - _____ Is existing drainage system sufficiently sized to carry development flows?
 - Detention Ponds
 - _____ Keep any offsite drainage from entering detention pond, to keep pond size to a minimum (if possible)
 - _____ Minimum free-board
 - _____ 1 ft. for earthen berms
 - _____ 0.5 ft. for concrete walls or curbs
 - _____ Pond construction details
 - _____ Outlet structure designed for 2, 10, 25, and 100 year events
 - _____ Sod covered/hydro-mulched
 - _____ Discharge from pond to existing drainage structure
 - _____ Is existing drainage system sufficiently sized to carry development flows?
 - _____ Concrete trickle (pilot) channel on swale flowlines within the pond (3' wide)

- _____ Side slopes/grades - slopes no steeper than 3:1
- _____ Exit velocities at pond discharge
- _____ Sufficient access points for maintenance
- _____ Inlet/outlet construction details
- _____ Minimum pipe size allowed 12"
- _____ Erosion control (matting, rock riprap, etc.)
- _____ Outlet structure
- _____ Inlet structure (if necessary)
 - Channels
- _____ Concrete lined (earthen allowed for offsite runoff only)
- _____ 100 year capacity
- _____ Is existing drainage system sufficiently sized to carry development flows
- _____ Maximum velocity in earthen channels
- _____ Minimum 2' of freeboard
- _____ Sod covered/hydro-mulched per construction standards
- _____ Erosion control at discharge (if necessary)
- _____ Construction details
- _____ Sideslopes (maximum)
 - 3:1 for earthen
- _____ Design flow, design velocity, capacity, and hydraulic gradeline
- _____ Minimum longitudinal grade (0.40%)
- _____ Typical sections and width of R.O.W.
 - Site Grading
- _____ Provide existing contours (in 1 ft. intervals)
- _____ Provide finished grade contours (in 1 ft. intervals)
- _____ Ensure finished grading shows runoff from houses draining towards street (not towards other houses)
- _____ Offsite drainage onto proposed lots is not acceptable
- _____ If proposed development raises natural ground elevations, "damming" of water on adjacent properties will not be allowed
 - Street Capacity
- _____ 100 year storm event must be contained within the R.O.W.
- _____ Full flowing top of curb

- _____ Minor streets shall have a minimum capacity 10 year storm
- _____ Alleys shall have a minimum capacity 10 year storm
- _____ Collector streets shall have a minimum capacity 25 year storm
- _____ All other streets shall have a minimum capacity 50 year storm
 - Drainage easements
- _____ Not recommended along property lines (need separate easements)
- _____ Existing easements shown
- _____ Proposed easements shown
 - Miscellaneous
- _____ Generally, confirm house finished floor elevation is 1 ft. above top of curb

2. Streets

- Street Widths and R.O.W.
 - _____ Major arterial (60'-0" face to face of curb) (90'-0" R.O.W.)
 - _____ Minor arterial (30'-0" face to face of curb) (50' R.O.W.)
 - _____ Collector (40'-0" face to face of curb) (60' R.O.W.)
 - _____ Alley per construction standards
 - _____ Cul-de-sac streets
 - _____ Maximum allowable length
 - Curb Design
 - _____ Spill vs. catch design (if curb and gutter)
 - _____ Construction details per construction standards
 - _____ Expansion joints per construction standards
 - Street Design
 - _____ Geotechnical report provided
 - _____ Sub-grade preparation per construction standards
 - _____ Base type and depth per construction standards
 - _____ Asphalt type and depth per construction standards
 - _____ Minimum densities
 - _____ Base course (100%)
 - _____ Sub-grade (95%)
 - _____ Longitudinal Grades
 - _____ Minimum 0.4%
 - _____ Vertical curves required for all grade changes greater than 1.0%

_____ Crown

_____ Minor Streets

_____ Minimum 4" or 1/4" per foot slope whichever is greater

_____ Collector Streets

_____ Minimum 5" or 1/4" per foot slope, whichever is greater

_____ Horizontal Curves

_____ Shown on plans per construction standards

_____ Radii shown on all curves and cul-de-sacs

- Sidewalks

_____ 4 ft. minimum width

_____ 2" sand cushion

_____ ADA requirements (minimum width, ramps, maximum slopes, etc.)

_____ Construction details

_____ Expansion joints

_____ 1" deep dummy joints @ 10' intervals

_____ Approval letter from Registered Accessibility Specialist

- Concrete Valley Gutters

_____ Required at all street intersections where water flows across asphalt

_____ Construction details

_____ Expansion joints

- Miscellaneous

_____ Access to houses – City may not allow house driveways directly onto collector streets

_____ Good to have typical section of street with utilities shown to confirm no conflict with any other utilities (gas, telephone, etc.)

_____ Existing pavement repair detail for utility cuts (if applicable)

_____ Testing Requirements

_____ Densities taken minimum every 200' for street construction

_____ City inspector must be present

3. Water

- Water Mains

_____ Minimum dynamic pressure of 35 psi at a demand of 2 gpm per connection

_____ Pipe material (PVC, steel, ductile iron, etc.)

_____ 6" minimum allowable size for subdivisions; 8" for commercial & industrial areas

_____ Minimum pipeline cover (42")

_____ Bedding/backfill detail

_____ Bore/casing details (use steel casing)

_____ Thrust blocking detail

_____ Flush valve detail (if applicable)

- Water Supply Availability

Developer's Engineer should provide proof of sufficient water supply. ISO standards for fire protection govern the amount of water needed based on location of adjacent structures (houses). Typically, 1,000 gpm minimum at each fire hydrant.

_____ An existing fire hydrant can be tested for basis of flow. (Located per City)

- Fire Hydrants

_____ Spacing (500 ft maximum)

_____ Locate at street intersections, if possible

_____ City Fire Marshall approve locations

_____ Construction details

_____ Bottom flange to be within 3" of finished grade

- Service Connection

_____ Single vs. double

_____ Pipe material/size

_____ Construction details

- Valves

_____ Type/style

_____ Location/spacing – provide sufficient valving so that only one block is out of service for leak repairs

_____ Require two valves for a "tee" connection and 3 valves for a "cross" connection

_____ Construction details

- Miscellaneous

_____ Have easements been obtained if connecting to offsite line

_____ Existing water system shown (location, size, etc.)

_____ Separation distance from sewer lines per TCEQ requirements

_____ Sewer line crossings per TCEQ requirements

_____ Testing Requirements

_____ Water leak and disinfection tests for water per TCEQ

_____ City inspector must be present

4. Sewer

- Sewer/Force Mains

_____ Minimum design requirements for:

_____ Gravity Pipe

_____ Minimum/maximum slope (per TCEQ)

_____ Plan/Profile view

_____ Minimum pipeline cover

_____ Bedding/backfill detail

_____ Force Main

_____ Plan view

_____ Minimum pipeline cover

_____ Bedding/backfill detail

_____ Thrust blocking details

_____ Air/vacuum release valve details

_____ Pipe material

_____ Gravity pipe (PVC SDR-26 minimum)

_____ Force main (C-900 PVC)

_____ Capacity

_____ Anticipated flow

_____ Proposed capacity

_____ Existing capacities (if applicable)

- Manholes

_____ Location/spacing (per TCEQ)

_____ Ring/lid diameter (30" diameter minimum)

_____ Pipeline connection (boot)

_____ Concrete details

_____ Construction details

_____ Inflow preventers

_____ Drop manhole design (required if drop is greater than 2 ft.) (internal drops not allowed due to access problems)

_____ Construction details

- Service Connections

_____ Double sewer services not allowed

_____ Cleanout detail
_____ Construction details
_____ Services shown in plan view

- Miscellaneous

_____ Easements been obtained if connecting to offsite line
_____ Trench Safety (OSHA)
_____ Sanitary sewer mandrel/leakage test per TCEQ
_____ Separation distance from water lines per TCEQ requirements
_____ Water line crossings per TCEQ requirements
_____ Construction details have been provided for
_____ Bore/casing details

5. Lift Stations

- Design calculations provided for

_____ Wet well size
_____ Pump size
_____ Pump cycle time
_____ 2 hour storage calculations per TCEQ
_____ Duty/standby pumps

- Pump type/style

_____ Type of Pump: KSB, Hydromatic, or Flygt

- Wet Well

_____ Construction Details
_____ 18" ASTM C-33 crushed stone #57 base bedding

_____ All wet well components (other than pump and piping) shall be stainless steel including rails, chains, grip eye, etc.

_____ Access doors shall be specified as minimum 72"x48" (or larger if required for pump removal) double leaf aluminum access frame and cover w/ padlock (W2S Series, Model W2S7248 by Halliday Products or equivalent) for both the wet well and valve vault. In addition, a safety grate shall be installed on the wet well (Typical details and specifications may be provided by City Engineer upon request)

_____ Concrete (rebar spacing, concrete strength, etc.) or pre-cast design
_____ Piping layout

_____ Concrete shall be 4,000 psi minimum. Pre-cast structures shall be in accordance with ATSM C-76 Type III.

- Valve vault

_____ Construction Details

_____ Concrete (rebar spacing, concrete strength, etc.) or pre-cast design

_____ All valves shown

_____ Piping layout

- Electrical Details

_____ The City of Elgin requires pump controls, distribution panel, and main breaker mounted on a uni-strut frame with 3/8" S.S. bolts, nuts, and washers on top of the valve vault. A minimum distance of 3.5 feet shall be provided from the top of the valve vault to the bottom of the pump controls. The distribution panel shall have a service light, duplex receptacle, and control circuit. Additional required features include 20 amp duplex receptacle, HOA switches, elapsed time meters and two (2) 300 Watt exterior floodlights with photocell. (Typical details and specifications may be provided by City Engineer upon request)

_____ All NEMA 4X (stainless steel) rated panels

_____ Breakers for floodlights

_____ Electrical components inside the wet well and mounted on the wet well roof shall be explosion-proof meeting Class1, Division 1, Group D atmosphere.

_____ Future SCADA capability

_____ Auto Dialer

_____ Provide note on plans that contractor shall provide necessary seals in electric conduit/wiring to prevent sewer gas escape into panel.

- Miscellaneous

_____ Does City have easement (if applicable) for access to pump station for maintenance?

_____ The City of Elgin requires a minimum 10' wide access road with 8" of crushed stone base material TxDOT Item 247; Type A, Grade 2 compacted to 100% Density (Tex 113E). Road shall end in a 20' square pad in front of the lift station. Provide details on plans.

_____ Have easements for site been acquired or has a dedication of ownership to City been made (if applicable)?

_____ Geotechnical report verifying structural loads

_____ O&M manual requirements (4 copies)

_____ Confirm the pump station site is out of the 100-year flood plain or operational during a 100 year storm event, and site is accessible during 100-year storm event (TCEQ Requirement).

_____ Require the contractor to slope natural ground away from lift station to drain, at a slope of 4:1.

_____ Fencing per TCEQ

_____ Vehicular Gate (Minimum 16' wide opening)

6. Stormwater Pollution Prevention Plan (SWPPP)

- Engineer shall provide a storm water pollution plan prior to construction in accordance with TXR150000.

_____ Required for 1-acre (or more) disturbance

_____ Erosion control plan submitted

7. Electrical Plan

- Reviewed by City electrical department

_____ Underground vs. overhead

8. Street Lights

- Reviewed by City electrical department

_____ Location/spacing

9. Permitting

- TxDOT Permit Issued

_____ For connection to TxDOT Highway

_____ For utility installation

- TCEQ Submittal/approval

_____ Water

_____ Sewer

- Other (USCOE, THC, USFWL, etc.) if required

10. Signage

_____ • Reviewed by City P&Z

_____ • Street identification signs

_____ • Traffic control signs (if traffic control plan required)

_____ • TxDOT requirements (if applicable)

11. Miscellaneous

- Developer's engineer provide statement on front cover of plans, as follows:

_____ "All construction activities shall meet the City of Elgin Construction Standards"

_____ • Require a maintenance guarantee (bond) in construction documents

_____ • Construction plans require contractor to prepare Record drawings to Engineer. Engineer shall revise the original construction drawings to reflect the field revisions and submit completed "as-built" drawings to the City for their records.

_____ • Developer/Engineer has received written approval for all existing easement crossings (if applicable)

DISCLAIMER

THIS CHECKLIST IS USED BY THE ELGIN CITY ENGINEER (TRC) AS A GUIDANCE TOOL FOR THE REVIEW OF PROPOSED DEVELOPMENTS IN THE CITY OF ELGIN. THIS DOCUMENT DOES NOT GOVERN OVER OR SUPERCEDE ANY REQUIREMENTS OF THE CITY'S SUBDIVISION ORDINANCE OR CONSTRUCTION STANDARDS. ALL REQUIREMENTS IN THE ORDINANCE AND STANDARDS MUST BE MET BY THE DEVELOPER AND THE DEVELOPER'S ENGINEER.

**THE COMPLETE CONSTRUCTION STANDARDS CAN BE FOUND AT:
<http://elgintx.com/DocumentCenter/View/100/Construction-Standards>**