



CONSTRUCTION PLAN CHECKLIST

The design engineer is responsible for ensuring that plans submitted for city review are in accordance with this checklist. It is requested that the executed checklist be submitted with the building permit application. The following checklist will be used during the plan review.

GENERAL

1. North arrow and scale clearly shown on each plan sheet	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2. Title blocks, title, sheet number legends, and scales shown.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3. Each sheet must bear the seal of a Licensed Professional Engineer, signature and a date per TBPE rules and regulations.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4. Submit two (2) copies of construction plans and one (1) copy of the drainage report for review.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
5. Existing, proposed and future facilities must be clearly identified	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
6. Is TxDOT ROW included? Did consultant coordinate with TxDOT?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
7. Is a dumpster pad required? Is a detail provided & coordinated with Solid Waste?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
8. Is the project in the Edwards Recharge Zone? Is TCEQ permit provided?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
9. Traffic Impact Analysis in accordance with Se. 118-46 y. 1 of the Code of Ordinances	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
10. Is the approved final plat included in the plan set?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
11. Provide a copy of all required and approved permits necessary to construct the project. Such permits and agencies include, but are not limited to, NPDES (addressed in drainage manual in chapter 13), Section 404 permit from the U.S. Army Corps of Engineers, the Environmental Protection Agency (EPA), and Texas Commission on Environmental Quality (TCEQ).	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

COVER SHEET

1. The following statement shall be included: "All responsibility for the adequacy of these plans remains with the engineer of record. In accepting these plans, the City of New Braunfels must rely upon the adequacy of the work of the engineer of record."	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2. Include the following note: "If construction has not commenced within one-year of City approval for construction inspection, that approval is no longer valid."	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3. Project title and type of project.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4. Location map with North arrow and scale	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
5. Index of sheets.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
6. Professional Engineer's seal, signature and date.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

7. Type 1, 2 or 3 Development or Redevelopment indicated on the plans. Yes____ No____ N/A____

8. FEMA FIRM Panel number and date provided with a description of what portion of the project, if any, is located in a floodplain. Yes____ No____ N/A____

9. Include statement regarding the location of the project in reference to the an Edwards Aquifer jurisdictional boundary. Yes____ No____ N/A____

GENERAL NOTES SHEET

1. Standard City Construction Plan Notes (see City of New Braunfels website). Yes____ No____ N/A____

2. TMUTCD references provided for all traffic signs. Yes____ No____ N/A____

3. Provide Note: Drainage improvements sufficient to mitigate the impact of construction shall be installed prior to adding impervious cover. Yes____ No____ N/A____

4. Sequence of Construction provided. Yes____ No____ N/A____

GRADING PLAN

1. Existing one-foot contours based on topographic map. Yes____ No____ N/A____

2. Proposed one-foot contours. Yes____ No____ N/A____

3. Letter of permission if grading is proposed on adjacent property. Yes____ No____ N/A____

4. Utility easement from abutting property owners. Yes____ No____ N/A____

5. Proposed inlets, label and size. Yes____ No____ N/A____

6. Proposed pipes, label and size. Yes____ No____ N/A____

7. Existing inlets and pipes. Yes____ No____ N/A____

8. Delineation of watersheds. Yes____ No____ N/A____

9. Grading plan provided with arrows showing which way water is draining. Yes____ No____ N/A____

10. Disposal site for excess excavation if not within project limits. Yes____ No____ N/A____

PAVING PLAN

1. Right-of-way, streets, drives and sidewalks dimensioned. Yes____ No____ N/A____

2. Centerline stations shown. Yes____ No____ N/A____

3. Limits of work defined. Yes____ No____ N/A____

4. Barrier free ramps at all intersections. Yes____ No____ N/A____

5. Sidewalks, driveways, and ramps per City Standards Yes____ No____ N/A____

6. Traffic control items, striping, traffic buttons. Yes____ No____ N/A____

7. Are driveway locations indicated?-Check construction and spacing Yes____ No____ N/A____

requirements per Chapter 143 of City Code of Ordinances

8. Pavement design sealed by a PE based on a Geotechnical Report.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
9. References to appropriate details for pavement thicknesses and transitions.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
10. Roadways comply with master thoroughfare plan.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
11. Geometrics meet design speed criteria.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
12. Is Superelevation required?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
12. Retaining Walls: a. Type, beginning and ending locations and wall elevations. b. Provide design if non-standard or modified. c. Drainage behind walls shown.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
13. Driveway grades shown and within acceptable tolerance.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
14. Radii shown on streets and driveways	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

PAVING PROFILES AND GRADES

1. Profiles plotted showing ground at centerline and each right of way.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2. Top of curb profiles must meet minimum and maximum grade requirements.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3. Vertical curves must be designed in accordance with AASHTO.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4. Check carefully for any place water might pond. Are inlets located at sag points or vertical curves?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
5. Are grades, cross fall, slopes, etc., consistent with information shown on typical section?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
6. Check ends of project for drainage. If gutters drain to ditches or field type inlets, are grades and profiles shown?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
7. Minimum grades maintained to assure complete drainage.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
8. Guard rails at culvert crossings in accordance with TxDOT design manual.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

STORM SEWER PLANS

1. Plan and profile of all proposed storm sewers.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
2. Station of laterals on trunk profile.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3. Plan view of each area showing: a. Size of inlet b. Lateral size. c. Flow line. d. Paving station. e. Top of curb elevation.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
4. Details of all non-standard items.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

5. Property lines and easements with dimensions.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
6. Class III RCP or CMP if in Public Right of Way.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
7. Pipe embedment detail.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
8. Plot hydraulic grade line (HGL).	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
9. Storm drain discharge at flow line of creek or channel and use rip-rap. Show coincident water surface of outfall.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
10. Headwalls and erosion control at outfall of storm drains.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
11. Laterals connected at minimum 60 degree angle.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
12. Matching pipe top of connection.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
13. Existing and proposed utilities in plan and profile.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
14. On profile indicate: <ul style="list-style-type: none"> a. Grade. b. Flow line elevations at every station. c. Existing and proposed finished surface. d. Hydraulic grade line and data. 	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
15. Show sizes in plan and profile.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
16. Show computations for existing system when connecting to existing storm drain.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
17. Velocities and hydraulic gradients conform to City of New Braunfels Drainage Manual.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
18. Inlets and conduits properly sized.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
19. Storm drain inlet and outlet velocity calculations.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
20. Manholes at all pipe size changes and at least every 500lf.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
21. Show plan and profile of all drainage elements on separate sheets from paving plans.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
22. Indicate concrete thrust blocks and collars where applicable.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
23. Specify the type of storm drainpipe to be used.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
24. Number inlets according to the number designation given for the area or subarea contributing runoff to the inlet.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
25. Indicate quantity and direction of flows at all inlets, stubouts, pipes and intakes.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
26. Show water surface at outfall of storm sewer, velocity and typical section of receiving water body.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
27. Where fill is proposed for trench cut in creeks or outfall ditches, specify compacted fill and compaction criteria.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

28. Show size of pipe, length of each pipe size, and stationing at 100-foot intervals in the plan. Yes____ No____ N/A____

29. Begin and end each sheet with even or 50-foot stationing. Yes____ No____ N/A____

30. Show diameter of pipes, physical grade, discharge, capacity of pipe, slope of hydraulic grade line and velocity in the pipe in the profile view. Yes____ No____ N/A____

31. Show elevation of flow lines at 100-foot intervals on the profile. Yes____ No____ N/A____

32. Give benchmark information. Yes____ No____ N/A____

33. Runoff from alleys and other paved areas are not to cause street capacity to be exceeded. Yes____ No____ N/A____

34. Show horizontal and vertical curve data for all drainage elements. Yes____ No____ N/A____

35. Tie storm sewer stationing with paving stations. Yes____ No____ N/A____

36. On all dead-end streets and alleys, show grades for drainage overflow path on the plan and profile sheets, and show erosion controls. Yes____ No____ N/A____

37. Specify concrete strength for all structures. Yes____ No____ N/A____

38. Provide sections for road, railroad and other ditches with profiles and hydraulic computations. Show design water surface on profile. Yes____ No____ N/A____

CREEKS AND OPEN CHANNELS

1. Stationing in plan and profile. Yes____ No____ N/A____

2. Profiles indicating:

- a. Existing flow line. Yes____ No____ N/A____
- b. High banks. Yes____ No____ N/A____
- c. Hydraulic profile and data. Yes____ No____ N/A____
- d. Rock line if velocity is greater than 6 feet per second. Yes____ No____ N/A____

3. Hydraulic Computations.

- a. 100-year discharge Yes____ No____ N/A____
- b. Velocity Yes____ No____ N/A____
- c. Critical depth Yes____ No____ N/A____
- d. Manning's "n" Yes____ No____ N/A____
- e. Design grade for improved channels Yes____ No____ N/A____

4. Cross sections as relative to property line. Yes____ No____ N/A____

5. Erosion control. Yes____ No____ N/A____

6. Compacted fill where fill required. Yes____ No____ N/A____

7. Design velocities not greater than original stream velocities or greater than stated in Design Manual. Yes____ No____ N/A____

8. Maximum side slope on earthen channels not greater than 3:1. Yes____ No____ N/A____

9. Show side slopes of creeks, channels, etc. Yes____ No____ N/A____

10. Indicate any adjacent alley or street elevations on creek profile. Yes____ No____ N/A____
11. Show and detail any temporary or permanent erosion controls. Yes____ No____ N/A____
12. Indicate existing and proposed velocities. Yes____ No____ N/A____
13. Show access and/or maintenance easements. Yes____ No____ N/A____
14. Identify the datum, benchmarks and date of re-leveling the benchmarks to which the flood and ground elevations are referenced. Yes____ No____ N/A____
15. Show existing Finished Floor (F.F.), or proposed minimum F.F. of all structures, existing or proposed adjacent to creek or channel alternations. Yes____ No____ N/A____

BRIDGES

1. Lowest member of bridge, design water surface, and 100-year water surface elevations are provided. Yes____ No____ N/A____
2. Indicate soil borings on plans. Yes____ No____ N/A____
3. Provide a geotechnical soils report. Yes____ No____ N/A____
4. Channel sections upstream and downstream of bridge. Yes____ No____ N/A____
5. Structural details and calculations with dead load deflection diagram. Yes____ No____ N/A____
6. Provide vertical and horizontal alignment. Yes____ No____ N/A____
7. Bridge cross section. Yes____ No____ N/A____
8. Provide hydraulic calculations on all sections. Yes____ No____ N/A____
9. Provide calculations and details for all erosion protection. Yes____ No____ N/A____

DETENTION AND RETENTION FACILITIES

1. Show plan view of detention/retention area and outlet structure. Yes____ No____ N/A____
2. Delineate limits of conservation pool, sediment storage area, flood storage pool and/or freeboard. Yes____ No____ N/A____
3. Indicate size, dimensions, total capacity and design discharge velocity of the outlet structure. Yes____ No____ N/A____
4. Show erosion control features at the discharge point of the outlet structure. Yes____ No____ N/A____
5. Specify side slopes of facility and outlet structure. Yes____ No____ N/A____
6. Show existing or proposed structures or other facilities downstream of the outlet structure and emergency spillway, and provide information sufficient to show that the adjacent facilities will not be subjected to inundation (or increased inundation) or otherwise affected by the discharge from the facility. Yes____ No____ N/A____
7. Indicate locations and quantities of all inflows to the facility. Yes____ No____ N/A____
8. State the design time to empty the facility. Yes____ No____ N/A____

LEVEES

1. Show location, extent, nature, dimensions, etc., of levee embankments and associated interior and exterior drainage facilities. Yes____ No____ N/A____
2. Provide engineering analysis addressing potential erosion of the levee embankments during flood events. Yes____ No____ N/A____
3. Provide engineering analysis of levee embankment stability and seepage through the levee during flood events. Yes____ No____ N/A____
4. Compaction of fill material should be performed in accordance with standard engineering practices. Yes____ No____ N/A____
5. Analyze interior drainage concerns. Identify sources of interior flooding and extent and depth of such flooding. Consider capacity of pumps and other drainage devices for evacuating interior waters. Yes____ No____ N/A____
6. Submit an operations manual which discusses the flood warning system to trigger closures; closure operations, procedures and personnel; operation plans for Interior drainage facilities; at least an annual inspection program; and maintenance plans, procedures and frequency. Yes____ No____ N/A____
7. Provide all other information requested or required by the City Engineer and/or the Federal Emergency Management Agency. Yes____ No____ N/A____

EROSION CONTROL

1. Existing and proposed grading. Yes____ No____ N/A____
2. Existing and proposed drainage features. Yes____ No____ N/A____
3. Erosion features including temporary construction entrance, silt fence, inlet protection, rock berms, seeding, etc. Yes____ No____ N/A____
4. Erosion control standard details. Yes____ No____ N/A____

PAVEMENT MARKING AND SIGNAGE

1. Pavement markings and signage plan in accordance with TMUTCD. Yes____ No____ N/A____
2. Pavement markings standard details. Yes____ No____ N/A____
3. Signage plan notes compliant with City Construction Plan Notes. Yes____ No____ N/A____

DRAINAGE AREA MAP

1. Use a scale of one-inch equals 200 feet for the development and a scale of up to one-inch equals 2,000 feet for creeks and off-site areas, provided that the scale is adequate for review, and show match lines between any two or more maps. Yes____ No____ N/A____
2. Show existing and proposed storm sewers and inlets. Yes____ No____ N/A____
3. Indicate subareas for each alley, street, inlets, off-site areas, etc. Yes____ No____ N/A____
4. Indicate contours on map for on- and off-site areas. Yes____ No____ N/A____
5. Indicate zoning on drainage area. Yes____ No____ N/A____

6. Show points of concentration of design points. Yes____ No____ N/A____
7. Indicate runoff at all inlets, dead-end streets and alleys or to adjacent additions or acreage. Yes____ No____ N/A____
8. Provide runoff calculations for all areas showing acreage, runoff coefficient, inlet time and storm frequency. Yes____ No____ N/A____
9. Indicate all crests, sags and street and alley intersections with flow arrows. Yes____ No____ N/A____

DRAINAGE REPORT CALCULATIONS

1. Show hydraulic grade lines with computations. Yes____ No____ N/A____
2. Provide table with input parameters for all models and formulas. Yes____ No____ N/A____
3. Indicate all assumptions. Yes____ No____ N/A____