

## **B-PERMIT PLAN CHECK MANUAL**

### **3. STREET PLANS**

Street Plans are usually submitted to satisfy a planning or zoning requirement. They are generated by Parcel Maps, Tract Maps, Street Vacations, City Planning Cases (CPC's), Zoning Variances (ZV's), R-3 Dedications and the occasional voluntary improvement. It is important to first go to the project file to determine the conditions that need to be satisfied for approval. It may be helpful to field check the project location to determine if any problems exist.

The plan checker should check the plans for conformance to current specifications, standards and policies. Omissions and nonconformance to conditions should be noted. All necessary field work including surveys, sections and supplemental work should be provided by the private engineer. Allowable tolerances in calculations of grades and alignments should be compatible with construction capabilities. This means is it "buildable".

The following Checklist for street plans should be used to evaluate the completeness of the plan. Print a copy of the checklist to for each street plan to be checked and put the completed form into the B-Permit Project file.

**STREET PLAN CHECKLIST**

Date:

Title:

Tract, ZA, CPC:

No.	Checking Item	Reference	OK	NG	N/A
	Drafting				
1	Check history card and read file.				
2	Line Weights	Fig.G-713.2			
3	Substructures	Fig.G-713.4			
4	Profile lines for both sides of street and centerline				
5	Plot all cultures				
6	Profile layout. Heavy lines every 10' (horizontal), 50' (vertical)				
7	B-permit templates available on the Internet				
8	North Arrow. City Standard, oriented N90W to N90E				
9	Scale. Plan view, 1"=20' 1"=40' is ok when minimum detail is required. Profile view (horizontal) same as plan view. Vertical 1" = 4' or 1"=8' with box around "Double Vertical Scale"				
10	Line-up plan and profile stations.				
11	Centerline stationing is reference for all stationing.				
12	Drafting symbols for culture.	S-623			
13	Show curb profiles; existing, proposed, future. Do not show future improvements in the plan view.				
14	Show rates of grade in profile for all lengths between grade changes of 50' or more.				
15	On curves, rate to be figured on actual horizontal lengths of curbs and shown on the profile by arrowed dimension lines				
16	Show rates of grade to 3 decimal places in profile. (R=1.032%)				
17	On profile show rates of grade for center and both curb lines.				
18	Give rates of grade and profile number of existing paving on streets which job intersects.				
19	Show "Grade for top of future curb" and "Grade for future finished surface on centerline.				

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20	Carry profile of centerline out to centerline intersection with limiting cross streets.				
21	At grade break on curb profile and all indicated elevations on centerline draw small hollow circle.				
22	In plan view show FL elevation along the curb face (123.45/ 6" CF) and centerline elev. Thus (123.45/)				
23	Use parenthesis for existing elevations				
24	Show existing elevations of all improvements to be joined to ascertain proper join points and drainage requirements.				
25	Indicate all elevations to 2 decimal places.				
26	In profile, theoretical top of full height curb should be carried across at driveway and access ramp depressions.				
27	Grade break elevations in profile shall have corresponding elevations shown in the plan view.				
28	Show elevations in plan and profile views at all grade breaks, BC, PRC, EC, BCR, ECR, designated radial lines or designated POC and angle points.				
29	Show flow line elevations at driveways and access ramps thusly 832.11/ FL				
30	Show stationing for all BC, EC, BCR, ECR, (except curb return EC in profile), CL intersections, grade breaks and equations.				
31	Indicate all stationing to 2 decimal places except on even 50' stations.				
32	Do not station existing culture.				
33	Stationing should increase from North to South and from East to West unless survey field notes are otherwise.				
34	On curves, partial deltas are shown on the plan view with true lengths on curb in feet are shown on the profile.				
35	Do not duplicate intersection improvement details on the plan where two sheets are shown separately.				

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36	Show "T" sections on typical section if "T" is uniform; if variable, show on plan at each section change.				
37	At intersections, show radii of front of sidewalk edge which intersects curb returns. Also, show radii of back of walk if not concentric with property line.				
38	On plan sheets, all construction note call-outs for access ramp, cross gutter or other specific construction items should include latest City Standard Plan.				
39	Where benchmark references are shown on the plan, refer to year of adjustment.				
40	Omit the word "construct" on the typical sections.				
41	Construction notes, where possible, shall be slightly heavier or larger than culture notes.				
42	Use separate notes for removals and construction if at all possible.				
43	Always use a lettering guide. Minimum size lettering is 0.12" Leroy 0.10" freehand.				
44	Orientation of notes should normally be either horizontal or vertical. Vertical notes should be read from the right side of the plan				
45	Placement of the notes should lend themselves to a clear understanding of the drawing.				
46	Leaders from notes should be as few as possible. Avoid crossing one leader line over another.				
47	A light solid line shall separate full depth AC pavement construction from overlay construction.				
48	A light solid line shall be used to depict the boundary the of cold planing.				
49	Compare stationing to district map for rough check.				
	<b>Design</b>				
50	All grades shall be established by carrying the theoretical top of curb across the intersection.				

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51	Vertical curves are required when grade breaks exceed the following rates: Local streets – 1.25% Major Highways – 0.5% Steep Hillside – 2.0%. Grade breaks should not be closer than 20’ on major streets or 10’ on residential streets.				
53	Intersection design: Establish low side PI, establish low side BC max. 2% grade break, establish high side BC maintaining max. allowable cross fall (% grade of primary)(width of the local street)(2/3) = Max. cross fall. Check for in-plane curb return.				
53	Sight distance for Horizontal Curves: Hillside/25 mph/ 160’ Flat/ 50 mph/ 350’ Secondary and primary streets per AASHTO				
54	Check for proper crown or T section.				
55	Cross gutters: 4’ wide on local streets, 6’ wide on Majors and secondary highways, 8’ wide where cross traffic is on the major street.				
56	Pavement thickness: Major 8” AC on 6” CMB, Secondary 6on 6, all others 4 on 4. Otherwise permittee gets “R” tests.				
57	Minimum grades: 0.4%, absolute minimum = 0.2%. Maximum grade for collector = 10% Maximum grade for local = 15%				
58	Horizontal curves. Minimum centerline radius: major and secondary = 1102’, collector = 600’, local = 271’, hillside = 165’, elbow curves = 132’.	Fig. E 311.4			
59	Check superelevation and transition from super to normal section.				
60	Curb return radii: normal = 25’ min. = 15’				
	<b>Title Sheet</b>				
61	Title and limits in full				
62	Index of sheets				
63	Key map				
64	North point and scales				
65	Bench mark data. Best to have 2 bench marks				
66	Dist map, wye map				
67	Typical sections: Pavement thickness, labeling, grading. Right of entry form is required for offsite grading on private property.				
68	List of Standard plans				

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69	Number the supplemental notes, proper notes included. Use only applicable notes.				
70	Use CMB under side street and driveways				
71	Utility notices				
72	Engineer's stamp on all sheets				
73	Right of way number for dedication if required. On General Improvement projects only.				
	<b>Profile</b>				
74	Stationing in profile. Ground lines shown at PL and existing surface on centerline.				
75	Check for previously established grades				
76	Is cross fall similar to existing improvements in the area.				
77	Vertical curves: Sight distance, elevs. and rates, label BVC, EVC, PI elev.				
78	True lengths of horizontal curve shown in profile.				
79	PL shown for intersecting street, street name shown.				
80	"North Side" etc. shown				
81	"Double scale vertically "				
82	Check lot drainage when curb is higher than ground line.				
	<b>Plan</b>				
83	Delta, R, L of all curves				
84	PL and easements shown				
85	Existing elevations and culture.				
86	FL and CL elevations				
87	Riding lines worksheet				
88	Drainage at intersection				
89	Catch basin data				
90	Proper definition of improvement, construction lines.				
91	Traffic island design				
92	"Joins" where needed				
93	Proper transitions from improvements to existing	E433.1			
94	Rate and Profile of adjacent improvements				
95	Drainage in transitions section				
96	Warning rails in transition section				
97	Driveway riding qualities				
98	Driveways must comply with ADA requirements				
99	Lot lines and lot cuts				

## STREET PLAN CHECKLIST

100	“ continued on sheet “				
101	Sheet numbers				
102	Berm details				
103	Check drainage when top of curb is above ground line				
104	Transition section: 5’ to 10’ from curb and gutter to berm existing.				
105	Field check				
106	Ask engineer to send a copy of the plan to DOT and St. Trees				
107	Traffic lane requirements				
108	Check Substructures.				
109	Check survey and Cross sections				