CITY OF Riverside DEPARTMENT OF PUBLIC WORKS • ENGINEERING DIVISION
3900 MAIN STREET • RIVERSIDE, CALIFORNIA 92522-0311 • (909) 826-5341

BARRY BECK
Public Works Director

IMPROVEMENT PLAN CHECK LIST
SEWER IMPROVEMENTS

PROJECT:_____ Checked by: _____

Date:_____

This checklist should be considered as a guideline with acceptable minimums to be used for plan preparation by private engineers. Other methods of achieving the desired result can be used and are encouraged.

Sheet No. 1	2	3	4	5	6	7	8		
								1 -	Plan Check BASE FEE required when plans submitted. Totaled bond estimate required with first check. Submit two (2) prints of plans for checking.
								2 -	Plans to be approved by the private engineer. His signature, name, address, phone number and registration number to appear. The signed plans shall also bear the seal or stamp of the engineer and the expiration date of the certificate or authority.
								3 -	Does the engineer have a current City business license? City of Riverside Business Tax Certificate Number and expiration date to appear on plan.
								4 -	Title block to show Tract/Parcel Map number, CUP number, Zoning Case number, house number (for building permits), etc.
								5 -	Check general and construction notes against "Sample General Notes."
								6 -	Show vicinity map.
								7 -	Show scale, both horizontal and vertical and north arrow.
								8 -	Show name of all streets on sheet.
								9 -	Show lot lines, lot numbers and frontage distances. Show address of lot for building permits.
								10 -	Show proposed curb and gutter, cross gutter, sidewalks, etc., lightly or by dashed lines with right-of-way and improvement widths and plan references.
								11 -	Show existing improvements with dashed lines with right-of-way and improvement widths and plan references.
								12 -	If sewer is in easement, show limits of easement. Easements are not to be centered on property line. Minimum width easement 12'.

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☐☐☐☐☐☐☐☐ 13 - Location of sewer from centerline; 5 feet north or east of centerline. No sewers on property lines. On major streets, consideration may be given to locating the sewer in the parking lane, 5' from the curb. Check with Public Works.

☐☐☐☐☐☐☐☐ 14 - Check distance between sewer and water line. Horizontal distance should be minimum ten feet out to out. If less than ten feet, the water main invert shall be at least 2 feet above sewer invert. Absolute minimum distance is 5 feet. Check with Water Department.

☐☐☐☐☐☐☐☐ 15 - Show any existing pipe lines, irrigation structures, power poles, trees, etc., in right-of-way which may affect the sewer installation, label with size, etc. and distance from C/L.

☐☐☐☐☐☐☐☐ 16 - For improvements to be constructed, show with solid lines with standard drawing numbers. Minimum size of sewer main is 8".

☐☐☐☐☐☐☐☐ 17 - Show detail of other than City standard structures.

☐☐☐☐☐☐☐☐ 18 - Stationing must conform with established stationing on previous sewer plans. Stations to be left to right upstream. (Do not use street stationing.) If you have any questions or problems on stationing, contact Public Works Land Development Section prior to design.

☐☐☐☐☐☐☐☐ 19 - Consecutive manhole stations from lowest manhole (0+00) to show true length of sewer between structure centerlines. Show manhole equations, if any.

☐☐☐☐☐☐☐☐ 20 - Show stations at all B.C.s and E.C.s and at all structures.

☐☐☐☐☐☐☐☐ 21 - Manholes to be numbered consecutively.

☐☐☐☐☐☐☐☐ 22 - Manhole spacing to be within allowable limits:

8" VCP - 350 feet
10" VCP - 400 feet
12" VCP and larger - 450 feet

☐☐☐☐☐☐☐☐ 23 - No cleanouts at the permanent end of a sewer unless there are 4 or less connections on the sewer between the cleanout and nearest downstream manhole. Maximum distance to any cleanout is 150 feet.

☐☐☐☐☐☐☐☐ 24 - Minimum radius of curved sewer to be 195 feet. Radii less than 195 feet must have prior Public Works approval.

☐☐☐☐☐☐☐☐ 25 - Show and check curve data.

☐☐☐☐☐☐☐☐ 26 - Manholes may be located anywhere: on the tangent, beginning or end of curve, or in the curve. When the sewer is located in an easement, locate manholes where they are readily accessible by City maintenance trucks and crews. access easements may be required.

☐☐☐☐☐☐☐☐ 27 - When joining an existing manhole at an angle, note to re-contour bottom of manhole for flow.

☐☐☐☐☐☐☐☐ 28 - If street is to be raised, lowered or overlaid, note: "adjust manhole to grade."

☐☐☐☐☐☐☐☐ 29 - No drop manholes.

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30 - Maintain a minimum of 5 feet clearance between curb face and sewer.

31 - In PRDs with curving private streets, the sewer main may pass under lawns, etc., but manholes must be located in the streets. Under no circumstances will the sewer be allowed to pass under or within 5 feet of any buildings.

32 - Show stubs for future extension where required.

33 - Check alignment, both vertically and horizontally, for future extension.

34 - Sewer must be constructed to all subdivision boundaries.

35 - Check at tract boundary to see that manhole or cleanout does not encroach onto private property.

36 - Manhole or cleanout required at the end of dry sewer that will be extended in the future.

37 - Laterals to connect at right angles to sewer main and to be shown and labeled on plan. The laterals shall generally be located (stationed) 5' from the property line on the lower side of the lot. Minimum size lateral is 4". On existing sewer mains and sewer mains larger than 10", the main is to be core drilled and saddled for lateral connection. Core drilling to be specified on plan.

38 - Laterals to be extended to property lines and/or easement boundaries. The laterals shall be terminated at the property line by means of a sewer cleanout (Std. Dwg. No. 560).

39 - No laterals in direct connection to manholes unless required by special conditions and prior approval is obtained from Public Works.

40 - No laterals directly opposite each other.

41 - If a sewer lateral of the same size as the sewer main is connected to the sewer main, a manhole will be required.

42 - If more than one sheet, show match lines at identical points on consecutive sheets. Give references to other sheets.

43 - Have Water Department sign plans after plan number is assigned.

44 - On City sewer extensions, send out "lateral letter" (WP 59) to all adjacent property owners and copies to Public Works. Public Works will supply a sample copy upon request.

45 - Plans shall have Dig-Alert stamp on each sheet so that the contractor must notify Underground Service Alert (USA) before digging or excavating.

46 - Plans should be mylar. No stick-ons accepted.

47 - The pipe bedding case shall be specified per Standard Drawing No. 452.

City plan number will be assigned by the Public Works Department prior to final approval of plans.

Sheet No. 1	2	3	4	5	6	7	8		
								1 -	Show datum elevations at both ends of sheet. Bench mark reference to be on each sheet. Contact Public Works, Survey Section for approval of bench mark.
								2 -	Show stationing at bottom of profile. Stationing to be left to right going upstream.
								3 -	Label and show connection to existing sewer, existing elevation and grade. If connecting to existing sewer without a manhole at point of connection, show distance from nearest downstream manhole.
								4 -	Show improvements to be constructed with solid lines. Draw structures to scale and show standard drawing number.
								5 -	Label and show stations and elevations at beginning and end of sewer, on BC and EC of horizontal curves and at centerline of all structures.
								6 -	Show size and length of sewer between structure centerlines.
								7 -	Manholes to be numbered consecutively.
								8 -	Show centerline profile of existing or proposed street or right-of-way in an easement.
								9 -	Check sewer profile and grade (minimum grade 0.4% for 8" sewer or 2 fps for larger sizes).
								10 -	No vertical curves in sewer except as approved by the Public Works Department.
								11 -	Grade breaks will be allowed at manholes only.
								12 -	0.10 foot drop required in flow line of pipes at manholes where grade is less than 2.5% and also where flow is deflected more than 45 degrees. 0.10 foot drop to be in the soffit if pipes are of different sizes.
								13 -	Minimum depth to top of sewer pipe is 6 feet. Prior Public Works approval required if circumstances dictate less cover.
								14 -	When top of sewer is within 3 feet of surface of street, sewer has to be encased for load carrying capabilities.
								15 -	Show rim elevations (nearest 0.1 foot) at all structures.
								16 -	Make sure street profile agrees with street plans and any revisions thereto.
								17 -	Show locations and bottom or top elevations of all crossings or structures that might enter into the design of the sewer. If a storm drain or major waterline, etc., is existing or proposed parallel to the sewer, show profile of both top and bottom of the facility on plan.
								18 -	Check that laterals will clear any existing or proposed parallel facilities.