

B-PERMIT PLAN CHECK MANUAL

5. SEWER PLANS

Sewer Plans are usually submitted in conjunction with Street Plans to meet the requirements of conditions imposed on a Planning or Zoning action. In some cases there may not be any Street Plans if the proposed sewer is located in an easement or an existing street. The design standards used for checking are consistent with the Bureau of Engineering [Sewer Design Manual](#). The plan checker may also be required to check House Connections that are shown on the Street Plans. This will occur when the mainline sewer already exists and the only sewer work involved is the construction of a new house connection(s) or the extension of existing house connections(s).

All sewer design calculations should take into account future possible development upstream when sizing pipes. The Bureau of Sanitation is now responsible for advance planning issues. This may not be possible if there are preexisting downstream limitations.

The plan checker should check the plans for conformance to current specifications, standards and policies. Omissions and nonconformance to conditions should be noted, but not designed. 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 it is "buildable".

The following Checklists for sewer plans and house connections shown on street plans should be used to evaluate the completeness of the plan. Print a copy of the checklist for each type of plan to be checked and put the completed form into the B-Permit Project file.

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The following Checklists for sewer plans and street plans showing HC's should be used to evaluate the completeness of the plan. Print a copy of the appropriate checklist for each sewer plan or street plan with HC's plan to be checked and put the completed form into the B-Permit Project file.

SEWER PLAN CHECKLIST

Date:

Title:

B-Permit No.:

Tract, Parcel Map, General Improvement:

No.	Checking Item	Reference	OK	NG	N/A
	GENERAL				
	Review Engineering file work required, including Tract or PM report.				
	Utility Notification Summary is required for all projects.				
	Indicate alignment on "Y" map and drainage map				
	Drainage or service area				
	Sheet Number on all sheets				
	Conduct field check if deemed necessary				
	Current plan templates used.				
	TITLE SHEET				
	Layout per standard plans, CAD standards, & drawing templates.				
	Title in "Project:" box				
	BD / BC permit numbers				
	Improvement type above credit box (Tract, Parcel Map, General Imp.)				
	Minimum size lettering - 1/8"				
	Latest datum reference for Benchmark used in Title block following Vertical & Horizontal Control.				
	Typical Sections				
	Special details				
	Bench mark(s): Elevation, description, & reference in benchmark block				
	Participation note w/boundary line type & permittee name printed below signature line.				
	Permittee signature and date on Final B-permit plan.				
	P.E. signature & seal (current license)				
	Design Group block filled out – with signatures & date for "Engineer" and "Approved by"				
	References: District Map No., Sewer Map No., Drainage Map No., Supersedes Plan, and R/W Number (if applicable)				
	State Highway – Encroachment Permit required. Date & No.				
	Flood Control permit no. and restrictions				
	Railroad encroachment permit				
	County or other City's permits (as required)				
	Earthquake zone				
	INDEX or INDEX TO SHEETS				
	Sheet No., "Plans Of", "From", "To"				
	Line numbers for multiple line projects				
	Street names or Easement by nearest parallel Street or R/W				
	Limits of Alignment (downstream to upstream)				
	"House Connection Only" under street name (if applies)				
	NOTICE TO CONTRACTORS (current B-Permit standard notes)				

SEWER PLAN CHECKLIST

	Specifications reference (Brown Book replaces S-610)				
	Inspection note				
	Appropriate Standard Plans-list numerically by Plan No & Title				
	CCTV for existing HC lateral extension (pre-1965 or earthquake damaged area).				
	No-Spills Policy for new HC or saddle connection.				
	Location - Underground Service Alert (USA)				
	Excavate & Expose				
	Fill note (90% compaction)				
	Resurfacing note (if no schedule)				
	Traffic requirements				
	Street lighting notes (if required)				
	Traffic signal notes (if required)				
	Urban Forestry Division notes (if required)				
	LEGEND				
	Necessary symbols shown				
	Existing – dashed lines, Proposed – solid lines				
	KEY MAP				
	Orientation – North arrow to top of sheet				
	Line numbers & flow arrows				
	Sewers & MHS (Existing – dashed lines)				
	Closest Intersecting Major & or Secondary streets to be shown				
	Scale and North arrow (Typical scale 1" = 400')				
	Indicate limits for HC's only (if applicable)				
	Show Tract number or Parcel Map No.				
	Participation boundary				
	Resurfacing schedule – if no resurfacing note utilized.				
	IF TUNNELING OR JACKING:				
	CAL OSHA permit required				
	Name & phone for State contact				
	Gas classification required				
	PLAN VIEWS				
	"PLAN", shown in vicinity of plan view				
	Scale 1" = 40' (standard plan view)				
	Minimum size lettering - 1/8" (see CAD standards)				
	Plan scale and graphic scale agree, and are shown.				
	Plan aligned with Profile				
	Plan orientation agrees with North Arrow				
	Public R/W				
	R/W Centerline				
	Participation boundary				
	Street names, alleys, easements				
	Dimensions called out for streets, alleys, easements				
	Temporary easement(s) – if required				
	Earthquake zone				
	Curbs, gutters, & cross-gutters (existing, future, proposed), and show dimensions.				
	Proposed storm drains – 3-ft clearance between ODs				

SEWER PLAN CHECKLIST

Surface improvements behind curb: Buildings, trees, walls, water meters, driveways, etc., if sewer within 10-ft of curb				
TRACTS, PARCEL MAPS, DLM				
Number				
Lot numbers				
Lot dimensions – frontage				
Lot dimensions – all sides				
Lot cut lines & dimensions inside				
Lot tie symbol				
SUBSTRUCTURES				
Correct line symbols – see CAD standards				
Owner, location relative to centerline, size, & quantity				
Storm drains, culverts, etc., and Plan numbers				
Substructure Abandoned? If so, label “ABAND”				
High pressure? If so, label				
To be Abandoned, Removed or Relocated – by whom				
Power poles-encase sewer within 5 feet with Case 5 bedding				
Fire hydrants & laterals				
EXISTING SEWERS				
Check Bedding type at joins				
Size, material, flow direction arrows, ties				
Label location relative to centerline				
Plan number or Abandoned (if applicable)				
Ex. HC's and stations (if necessary), reconstruct, blanket, abandon, remodel, join, etc.				
EXISTING Maintenance Holes:				
MHs upstream and downstream				
Type, size, station, ties, remodel, or abandon.				
NEW SEWER INFORMATION				
Size: diameter, length				
Material type (limits if necessary)				
Flow direction arrow				
Tunnel or jacking limits – Pit location: Avoid intersections, crosswalk, driveways, and building entrances. Allow clearance to existing Improvements.				
Line numbers in circles				
Ties				
Curve data (Δ , R, L, T)				
Location - clearance to adjacent improvements				
Location –clearance to adjacent water lines (min 4' OD to OD)				
Stationing				
Curves - BC's, EC's, PRC's and ties from centerline.				
STRUCTURES				
Station (& line number where necessary)				
Dashed outline – Existing MH				
Equation required				
Type and diameter >4' (Special?)				
Special – refer to detail & location				

SEWER PLAN CHECKLIST

	Ties				
	Inner cover where subject to inundation				
	Spacing - max 500' sewer between MHs, max 200' to TCS"Y"				
	MH bottom layout (if necessary: show detail)				
	Label stubs – size and slope				
	HOUSE CONNECTIONS				
	HC for each lot				
	HC station at Property Line, and Y-station				
	HC length, extended to PL				
	Elevation "F" at PL or Join point				
	HC smaller than mainline				
	HC type (if other than "A" specify length "B")				
	Bedding type if encasement required				
	Y's, if HC not used, @ 50' intervals or as appropriate				
	Y's pointed downstream				
	Flat or non standard Y inclination necessary				
	No connection direct to MH				
	SPUR LINES				
	Show future sewer alignment & ties				
	End station				
	Chimney bases & stations				
	Saddles station – if no existing Y or Tee.				
	Cross index between sheets				
	Station, Match Lines, Continued on Sheet				
	All data agrees on referenced sheets				
	Check if sewer can be extended in future				
	Hydrograph (when joining larger lines)				
	PROFILE				
	PROFILE, shown in lower area below Profile				
	Standard Profile Scale: Horizontal 1" = 40', Vertical 1" = 4'				
	Fill compaction note reference to sheet 1				
	Avoid using double vertical scale (exception steep hillside)				
	Pipe anchors and backfill stabilizers (List by table if necessary)				
	Proximity of parallel utilities				
	Concrete reinforcement				
	Low ground elev. (Adverse grade)				
	Basements (if applicable)				
	Existing house connections				
	Stations - 100' Intervals (1,2,3, etc.)				
	Elevations - 5 or 10 foot intervals				
	Street name or R/W at top of Profile				
	Line number in circle				
	Plan or Survey reference for surface over pipe				
	Improved curb and surface grade - solid line with straight edge. Dash line for near-side curb. Indicate unimproved w/free hand line.				
	Profile aligned with plan				
	EXISTING SEWERS				

SEWER PLAN CHECKLIST

	Blankets or supports				
	Abandonments				
	Removals				
	Elevations at crossings				
	Close parallel lines and MHs				
	Skewed crossings – show sewer in trench				
	INTERSECTING STREETS, ALLEYS, OR R/W's				
	Dash near side, solid far side				
	Special compaction requirements in R/W's				
	PROPOSED SEWER				
	Size-in inches				
	Slope in feet per foot (S=0.XXXX)				
	Pipe type				
	Mainline depth-adequate for tributary area.				
	Bedding type - (minimum Case-2 for plastic pipe)				
	Protective lining coverage – RCP				
	Limits – stationing and length				
	Hydraulic elements - 18" & > (Q,V,d,d/D,N)				
	Water surface - 18" and larger				
	VERTICAL CURVES				
	B.V.C. & E.V.C. stations				
	Length				
	P.I. station and elevation				
	Stations and elevations in curve				
	HORIZONTAL CURVES				
	B.C. & E.C. – stations and elevations shown				
	Specify maximum pipe length permitted (if applicable)				
	Beveled pipe required				
	Compound curves – Check joint deflection				
	STRUCTURES – MHs				
	Existing – remodeling				
	Existing – construction plan number				
	Ex. elevations with survey reference (in parenthesis)				
	Type (B,F,G,H,Q, special?), without “ “.				
	Diameter > 4'				
	Station				
	Drop across MH				
	Elevations				
	Station or tie if MH > 4' DIA.				
	Line no. in circle – Intersecting lines				
	Stubs with size and slope				
	MH cover Elev. in R/W, or dirt (set 6" above adjacent surface)				
	Inner cover if necessary				
	Review Survey submittal for MH invert elev. & surface topo.				
	All elevations agree where shown elsewhere				
	HOUSE CONNECTIONS				
	Station (right or left) (dashed on near side)				

SEWER PLAN CHECKLIST

	Elevation below leader				
	Type, if other than "A" ("B", "C", or "D")				
	Elevations "E" & "F" (if other than "A")				
	Flat or inclined "Y" (other than standard hook-up) – show slope, inclination, rotation.				
	Size if other than 6"				
	CHIMNEYS				
	Size if other than 6"				
	Base and station (when base only used)				
	Base type				
	Chimney type (A,B,C,D)				
	Height				
	Crossing substructures (owner, size, clearance)				
	Show fire hydrant lines and large individual service lines				
	Crossing storm drains – support or blanket				
	Existing, proposed or future storm drains				
	Underground obstructions (Vaults, footings, piles, etc.)				
	Tunneling or jacking limits – Stations & length				
	Special compaction				

STREET PLAN SHOWING HC'S – CHECKLIST

Job Title:

TR#, P.M.#, ZA# or CPC#:

BD-

CHECKING ITEM	OK	NG	N/A
I. IF APPLICABLE, CHECK TRACT OR P.M. FOR SEWER CONDITIONS			
II. INDEX TO SHEETS TABLE			
SEWERS Sheet No. Street name(s) or Limits HOUSE CONNECTION ONLY should be printed under the Street name			
III. NOTICE TO CONTRACTORS			
List standard plans for sewers that will be used:			
House Connection Sewer S-110-1			
House Connection Remodeling S-111-0			
Pipe Laying in Trenches S-251-1			
Standard Saddle Connection 27983			
CCTV note (s) for existing HC- extension/ under sidewalk work)			
SEWER SPILLS note (for Saddles)			
UNDERGROUND SERVICE ALERT note			
TRENCH RESURFACING note			
IV. HOUSE CONNECTION CHECK			
(1) At least (1) HC per lot			
(2) Show Length of HC			
(3) Elevation at PL (Elevation "F")			
(4) Sewer Station at PL			
(5) If no existing "Y" or "T" indicate "saddle"			
(6) HC Type, if other than "A"			

STREET PLAN SHOWING HC'S CHECKLIST

(7) HC extended to PL (new PL if dedication required), or end of Sidewalk Easement			
(8) HC Extension note (NTC)			
V. CHECK THE PLAN FOR THE FOLLOWING INFORMATION:			
(1) SEWER MAP # IN REFERENCE BLOCK			
(2) P.M. No. or TR. No / or GENERAL IMPROVEMENT			
(3) B Permit No.			
(4) Job Address			
(5) Lot or Parcel No.			
(6) Lot or parcel frontage dimension and side lot lines			
(7) Substructures: identify and delineate			
VI. EXISTING SEWER DATA:			
(1) Size			
(2) Plan No. that built sewer			
(3) Location of Sewer in relation to centerline			
(4) Up and down-stream MH's – station and tie to the nearest street centerline.			
(5) Flow direction arrow			
(6) Existing “Y” or “T” station- if any			
(7) Show Depth of mainline sewer (to nearest 0.1')			
(8) Existing sewer Curve Data (when applicable)			
VII. CHECK WYE MAP FOR EXISTING HOUSE CONNECTION/ WYE INFO.			