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SAN BERNARDINO COUNTY

Land Use Services Department
Building and Safety Division
Land Development

Drainage Study Review and Comment Check List

Application #: Preliminary DRNSTY-YYYY-XXXXX or Final DRNSTY-YYYY-XXXXX
Site Address:
APN:
Applicant/Contact: **Applicant Phone:**
Applicant Email:
Plan Check Engineer: **Plan Check Engineer Phone:**
Plan Check Engineer Email:

☐ **1st Review:** Click for date. ☐ **2nd Review:** Click for date. ☐ **3rd Review:** Click for date.

The project plans/documents have been reviewed for compliance with the following codes and standards: San Bernardino County Hydrology Manual **2026 Edition** and SBC Acceptable Hydrologic and Hydraulic Software.

Your application for a drainage study, together with plans and specifications, has been examined and you are advised that the issuance of a permit is withheld for the reasons hereinafter set forth. The approval of plans and specifications does not permit the violation of any section of the San Bernardino Hydrology Manual **2026 Edition** or other County of San Bernardino ordinances or laws.

STANDARD

- Please group all related sheets into a **single** file (i.e. Plans Package, Calcs Package) for resubmittal. Noncompliance **may** result in delays in the plan review process.
- Provide a written response indicating how each comment was resolved on the plans. Be as specific as possible, especially if the revisions are not clouded. Failure to submit a detailed response letter will delay the review of your project.
- Drainage Study Reviews shall expire **180 days** from the date of filing.
- Comply with all comments on the marked plans and plan review comment check list as listed below. Additional comments and clarifications may apply following review of the revised plans, calculations, and related documents.
- Final drawings and reports submitted for permit issuance shall be signed by appropriate California licensed design professional(s). Electronic signatures are acceptable.
- The plan checker is available by phone or email at the phone number and email listed above. **Please contact the plan check engineer if you have any questions.**

References:

1) San Bernardino County Hydrology Manual **2026 Edition** and **acceptable software** is available at: https://dpw.sbcounty.gov/permits-applications/permits-operations-support-division/flood-control/hydrology-manual/
2) Hydrologic Soils Groups is available at: https://sbcountydpw.maps.arcgis.com/apps/mapviewer/index.html?webmap=4a401249b6c845fba962a96eaf6a3bfd
3) Stormwater Facility Mapping Tool is available at: https://sbcountydpw.maps.arcgis.com/apps/webappviewer/index.html?id=302f46bbc77143519782936a535d0cfc
4) Public San Bernardino County Map Viewer is available at: https://experience.arcgis.com/experience/8c4f806654654ba689fa7ab842d57352
5) FEMA SFHA Maps are available at: https://msc.fema.gov/portal/home
6) DWR Best Available Map for floodplains is available at: https://gis.bam.water.ca.gov/bam

C = Completed	**N/A = Not Applicable**
R = Required (Not submitted)	**I = Incomplete (Submitted but incorrect/incomplete)**

A. GENERAL

No.	Description	REVIEW #			
		1	2	3	4
1	Report Format (minimum requirement): Cover Sheet, Table of Content, Project Description, Methodology, Conclusion, and Appendices & References				
2	Drainage Study Number preceded by "Preliminary" or "Final"				
3	Project Address and APN				
4	Preparer of Report: Name, Address, Phone No., Professional Registration Number, Stamp and Signature				
5	Owner's Name, Address and Phone No.				
6	Date of Report				
7	Vicinity Map				
8	Legend				
9	Record# per EZOP (PROJ, TTM, PRAA, etc.)				

B. PROJECT DESCRIPTION

No.	Description	REVIEW #			
		1	2	3	4
1	Watershed boundaries including offsite run-on				
2	Current land use and drainage pattern				
3	Proposed land use and drainage pattern				
4	Proposed hydrology and hydraulics methodology				
5	Impact of FEMA SFHA (including Zone X Shaded)				
6	DWR Best Available Map for floodplains – note in report				
7	Blueline stream				
8	Geotechnical Report with Infiltration Rate (if required)				

C. METHODOLOGY

No.	Description	REVIEW #			
		1	2	3	4
1	San Bernardino County Hydrology Manual **2026 Edition** and addendum including the use of SBC acceptable software				
2	Separate Hydrology Maps (Existing and Proposed with clear flow paths identified including off-site run-on)				
3	Bar Scale and North Arrow				
4	Watershed boundary				
5	Existing and Proposed Contours				

No.	Description	REVIEW #			
		1	2	3	4
6	Drainage Pattern and Flow Arrows				
7	Flow lengths and area of sub-areas				
8	Qs (with storm events reference) and TCs				
9	Storm Drain System (Existing and Proposed)				
10	FEMA Food Zone overlay – Show Lowest Finished Floor elevation				
11	DWR Best Available Map for floodplains overlay – Provide narrative for impact and any mitigation measure				
12	Proposed drainage easement alignment (Estimated width for preliminary study)				
13	Blueline Stream				
14	Hydrology Calculations (Existing and Proposed including off-site run-on)				
15	Soil Type with supporting map marking project site based on SBC Hydrology Manual **2026 Edition** data – Fig. 3-1 or see link in Reference section above				
16	Pervious ratio Impervious Assumptions: • Solar Panels – 30% impervious • Container – 100% impervious • Pervious pavers, decomposed granite, aggregate, and other "pervious" surfaces – 20% impervious • Structure/storage impervious surface based on roofline coverage				
17	AMC value (See Figure 3-2 of SBC Hydrology Manual **2026 Edition**) Project site to be marked on a copy of Figure 3-2				
18	SCS Curve Number (SBC Hydrology Manual **2026 Edition**)				
19	Rainfall intensity value with supporting NOAA Atlas 14 precipitation datasheet with value highlighted				
20	Where applicable, perform Post-Fire Hydrologic Parameter Adjustments (SBC Hydrology Manual **2026 Edition** – Chapter 6) Project site to be marked on a copy of Figure 6-4				
21	Where applicable, analyze for Sediment Bulking (SBC Hydrology Manual **2026 Edition**– Chapter 7) Project site to be marked on a copy of Figure 7-1				
22	Show street capacities for new subdivision roads for Q10, Q25 and Q100				
23	Hydraulic Study				
a	Preliminary Drainage Study: Provide Preliminary Hydraulic Study				
b	Final Drainage Study: Provide Detailed Hydraulic Study (including detailed Detention Basin design, storm drain design, rip-rap design, etc. if any)				

[Continued on next page]

D. DETENTION BASIN DESIGN – SBC Hydrology Manual 2026 Edition Chapter 8

No.	Description	REVIEW #			
		1	2	3	4
1	For runoff that **WILL** eventually enter SBC maintained Flood Control Infrastructures, use these criteria:				

No.	Description	REVIEW #			
		1	2	3	4
	1. Only 2-, 10-, 25-, and 100-year storms need to be analyzed 2. The 10-year post-development peak flow shall be limited to 90% of the 5-year pre-development peak flow 3. The 25-year post-development peak flow shall be limited to 90% of the 10-year pre-development peak flow 4. The 100-year post-development peak flow shall be limited to 90% of the 25-year pre-development peak flow 5. Additional studies shall be submitted where there exists more than one basin in the drainage area under review. The studies shall address the timing of peak flow rates from the basins to ensure that downstream flow rates are not increased				
2	For runoff that **WILL NOT** enter SBC maintained Flood Control Infrastructures, run-off shall comply with countywide policy For 2-, 10-, 25- and 100-year storms peak flow rates: $Q_{post\text{-}dev.\ peak\ flow} = \text{or} < Q_{pre\text{-}dev.\ peak\ flow}$				
3	Debris Consideration – SBC Hydrology Manual **2026 Edition** Chapter 7				
3a	Outlet pipe – SBC Hydrology Manual **2026 Edition** Chapter 8.4.5 Minimum 24" RCP (1350-D min) outlet drain for Flood Control District facilities. For local, private basins outlets smaller than 24" RCP may be allowed if it is shown how the system is designed to avoid clogging and sediment buildup.				
3b	Metered outlet structure, if needed, preferable "V"-shaped weirs or notched weirs				
3c	Drawdown time for 100-year peak depth/volume Detention basin: 24 hours (excluding WQMP volume) Retention basins: 72 hours				
4	Water Surface Elevation and Depth – SBC Hydrology Manual **2026 Edition** Chapter 8.7.1 (local basins)				
5	Emergency Spillway – SBC Hydrology Manual **2026 Edition** Chapter 8.8				
6	Freeboard to the Top of Embankment – SBC Hydrology Manual **2026 Edition** Chapter 8.9				
7	Basin Embankment – SBC Hydrology Manual **2026 Edition** Chapter 8.10 Wet side slope <= 3:1 Dry side slope <= 2:1				
8	Basin Floor Low Flow Channel – SBC Hydrology Manual **2026 Edition** Chapter 8.11 Basin floor slope >2% or erosive flow velocities: Erosion protection required for low flow channel Earth basin floor min. slope 0.5% to low flow channel Earth basin floor min. slope 0.5% from inlet to outlet				

E. CONCLUSION

No.	Description	REVIEW #			
		1	2	3	4
1	Narrative of how any drainage impacts are mitigated based on the hydrology study				
2	Off-site run-on mitigation measures				
3	Summary of Table for 100-year peak flow rates and times of Concentration (For Detention Basin, summary table of pre and propose flows and volumes)				

No.	Description	REVIEW #			
		1	2	3	4
4	Summary of Table for node numbers, upstream and downstream elevations, flow lengths, areas, land usages, soil types, % pervious, curve numbers and rainfall intensities				
5	Proposed drainage easement(s)				
6	Compare detention basin volume to WQMP design capture volume				

F. APPENDICES AND REFERENCES

No.	Description	REVIEW #			
		1	2	3	4
1	Soil Group Map with the Project location identified per SBC Hydrology Manual **2026 Edition** Chapter 3.2				
2	NOAA Atlas 14 statistical datasheet				
3	FEMA FIRM Panel Number, and the Effective Date with the Project location identified				
4	DWR Best Available Map for floodplains with the Project location identified				

G. SUBMITTAL WITH FINAL DRAINAGE STUDY

No.	Description	REVIEW #			
		1	2	3	4
1	FINAL WQMP (ready for approval) if required				
2	Site Specific Geotechnical Study if required				

Additional Comments:

1.