



**LOS ANGELES COUNTY  
DEPARTMENT OF PUBLIC WORKS**

**LOS ANGELES COUNTY FLOOD CONTROL DISTRICT**

**GUIDELINES  
FOR  
CONNECTION PERMITS**

**LAND DEVELOPMENT DIVISION - PERMITS SECTION**

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## CONNECTION GUIDELINES QUICK REFERENCES

To process a request for a permit to connect to a Los Angeles County Flood Control District (LACFCD) facility, please submit the following:

- I. Permit application.
- II. Plan checking and inspection fees.
- III. Submit four copies of the LACFCD as-built plans with the sketch of the correct location for the proposed connection.
- IV. Submit two copies of the LACFCD right-of-way map.
- V. Submit four stapled sets of 24X36 final construction plans, three additional sets if connecting to U.S. Army Corps of Engineers channels.
- VI. Submit a copy of the LACFCD existing hydrology and hydraulic data for the facility.
- VII. Two sets of signed and stamped hydrology calculations.
- VIII. Two sets of signed and stamped hydraulic calculations.
- IX. If applicable, submit the Exhibit "A" (Water Quality Agreement) and two sets of approved SUSMP. See page 6 for the requirements.
- X. For non-storm water discharges, submit a copy of the NPDES permit from the California Regional Water Quality Control Board.

### NOTES:

- Before submitting an application for a permit, make sure the system you are connecting to is maintained by LACFCD.
- Additional comments or requirements may be applicable and not covered in these guidelines based on your proposal.
- Restamped and signed copies of the Department's "as-built" or final construction plans that have been altered for additional drainage connections are not acceptable for LACFCD permit purposes. (The only stamp on the plan must be the design engineer's stamp that is applying for the permit.)
- Plans that are required to be reviewed by other divisions of the Department of Public Works and/or the U.S. Army Corps of Engineers will be forwarded to them by this Section. Please do not contact other divisions directly.

## **I. PERMIT APPLICATIONS**

The owner shall be the person (permittee) liable to maintain the proposed connection unless other arrangements are clearly stated on the permit application.

Print the complete street address and telephone number on the permit application of the owner and the applicant (agent of the owner). Please print legibly.

## **II. FEES**

Fees are to be determined at the Permits counter upon review of the project plans.

## **III. AS-BUILT PLANS**

A copy of the as-built plans showing LACFCD facility may be obtained from the Plan Room in the basement of the Department of Public Works or from its website, [dpw.lacounty.gov](http://dpw.lacounty.gov). Please sketch accurately the correct location for the proposed connection to the LACFCD's storm drain or channel system on a copy of the as-built plans.

## **IV. RIGHT-OF-WAY MAP**

A copy of the right-of-way for the affected District's facility may be obtained from the Survey/Mapping & Property Division on the 10th floor of the Department of Public Works or from its website, [dpw.lacounty.gov](http://dpw.lacounty.gov).

## **V. SUBMIT FOUR, OR SEVEN (if Army Corps of Engineers facility), SETS OF FULL SIZE (24" x 36") PLANS SHOWING THE FOLLOWING INFORMATION:**

- A.** Show a vicinity map with the Thomas Guide page number and grid. Show the "North" arrow, scale(s) used, and elevations on the profile view(s).
- B.** Plan sheets should be wet stamped and signed by a professional Civil/Structural Engineer licensed to practice in California.
- C.** Show the outline of the storm drain and/or channel with dashed lines and label the mainline of the facility with the LACFCD or the Army Corps of Engineers name.
- D.** Show the centerline and indicate the mainline storm drain Stations at all points of work that affect LACFCD facilities. **NOTE:** Midline connections to connector pipes are not allowed.
- E.** Show the dimensioned property and right-of-way lines. Label the LACFCD right-of-way lines as either fee or easement.
- F.** Plans stamped "preliminary" or "not for construction" etc. are not acceptable for permit issuance.
- G.** You must show the full plan, profile, details, and dimensions for all proposed connections.
- H.** Label the station of the proposed line at the connection (centerline intersection). Show the D-load for reinforced concrete pipe (RCP). For smaller connections (D<18") use polyvinyl chloride pipe (PVC) of Schedule-80 minimum strength. Asphalt concrete pipe (ACP) and corrugated metal pipe (CMP) are not acceptable as connections to LACFCD facilities.

- I. Label across the profile view who the proposed line is to be maintained by: LACFCD or owner.
- J. You must call out Standard Plans For Public Works Construction (SPPWC, latest edition) Standard Plan(s) (specify applicable variables, A, B, C, etc.) or the US Army Corps Standard Drawings for all connections. If not per Standard, show details and cross sections of the connection (allow additional time for review). Manuals for Standard Plans may be purchased at the Department of Public Works Cashier's Office, located on the mezzanine, (626) 458-6959.
- K. Show a profile view with the following items:
- Allowable "Q" in cfs (across the top).
  - Velocity "v" in fps at the point of connection for 24-inch connections and above.
  - Label who the proposed line is to be maintained by; LACFCD or owner (across the bottom).
  - Show the HGL along the proposed connecting system.
  - Slope along the grade line.
  - Pipe size, length and strength.
- L. Show a profile of the proposed line with the following items if it is to be maintained by LACFCD:
- Slope along the grade line (minimum 1.0% for connector pipes).
  - Size of pipe (minimum 18" for connector pipe and a minimum 24" for laterals and mainlines).
  - Use reinforced concrete pipe (RCP) and show the D-load.
- NOTE:** Remember to research utilities, verify utility location, and design accordingly (pothole if necessary). Show all utilities affecting your design on the plan and profile view.
- M. Most common types of connections and their requirements:
1. **DIRECT CONNECTION TO MAINLINE:**
    - Show the invert elevation of the mainline and of the proposed line at the point of connection. Also, show the elevation of the top of grate inlet on-site.
    - Show the slope along the grade line.
    - Show the existing hydraulic grade line (HGL) of the mainline.
    - Include the "Concrete Removal Notes", found on page 8.
  2. **CONNECTION TO BACK OR SIDE OF CATCH BASIN:**
    - The point of discharge shall not be on the steps of the catch basin.
    - Only one connection for a catch basin is allowed.
    - Connections larger than 12-inches must show a detail of the connection or reference to an appropriate SPPWC Standard Plan and include calculations showing no adverse structural or hydraulic condition occurs in catch basin.
    - Label the invert elevation of the catch basin, of the proposed line at the point of connection, and of the top of curb at the catch basin.
    - Label the elevation of the invert and the elevation of the top of the grate inlet on-site.
    - Include the "Concrete Removal Notes", found on page 8.

### 3. **DIRECT CONNECTION TO A CHANNEL**

- If the channel was constructed by the U.S. Army Corps of Engineers, submit two additional copies of the plans for their review. The type of connection must be per a Corps of Engineers Standard Junction Structure (show the structural detail on the drawings).
- Show the profile of the proposed pipe including the elevations at the top of channel, at the invert of the channel, and at the invert of the proposed line.
- A flapgate will be required when the elevation of the top of the proposed inlet is below the water surface elevation of the channel. Use automatic flapgate inlet per LACDPW Std. Plan 3061-2.
- The Angle of Entry must meet Corps criteria.
- For Corps channels, the soffit of the connector pipe should be a minimum of four feet below the design water surface of the channel unless otherwise approved by the District Engineer.
- Include the "Concrete Removal Notes", found on page 8.

### 4. **CATCH BASIN RELOCATION REQUIREMENTS**

- Need minimum 1% slope for proposed connector pipe.
- Call out the size, length and D-load of the proposed pipes.
- Indicate the horizontal deflection angle of the connector pipe on the plan. The angle should not exceed 15 degrees.
- Call out the abandonment of the connector pipe and the removal of the catch basin. (Abandoned pipe must be sealed at both ends with 6" concrete or 8" brick and mortar for CRCP, and filled with dry inert material per SPPWC Standard Plan 381-1 for CMP or PVC pipes.
- If a different size (W or V-depth) or type of catch basin or a different local depression is used, submit calculations to show the capacity of the proposed catch basin will meet the original design requirements. If an identical catch basin and local depression are used, hydrology and hydraulic calculations are not required. Show reference to all appropriate SPPWC Std. Plans (i.e., curb opening C.B. per SPPWC 300-2 and local depression at C.B. per SPPWC 313-2).
- Indicate the type of local depression and "H" value on the plans for proposed catch basins. Be sure to dimension according to the latest edition of SPPWC Standard Plan 313.
- For catch basins located at corners of intersections, submit a plan that shows the elevations of the top of curb and flow lines at BC and EC and mid-point of curb return, and 50' beyond on both sides.

**NOTE:** If an existing catch basin is located at a low point (i.e. sump condition) and proposed relocation of catch basin is to be upstream of the low point, no ponding of nuisance water will be allowed in the low point where the existing catch basin is removed.

## VI. HYDROLOGY AND HYDRAULIC DATA

A copy of the existing hydrology and hydraulic data for the affected system may be obtained from Mr. Amir Zandieh of the Design Division at (626) 458-7894 on the 6<sup>th</sup> floor of the Department of Public Works. Please circle or highlight the relevant data used in the submittal calculations on the copies of the LACFCD's documents.

## VII. HYDROLOGY CALCULATIONS:

- A. Show a drainage area map of the proposed site with the existing subareas from the design hydrology transposed on the drainage area map. Label the proposed area of your site in each existing subarea.
- B. Show off-site "Q" affecting your proposed facility.
- C. Compute the total allowable "Q" for the proposed site based on the allowable discharge "q" in cfs per acre of the existing subareas from the design hydrology.
- D. Compute the design hydrology peak flow rate "Q" for the proposed site using the hydrologic method in the "LACDPW Hydrology Manual 2006."
- E. Design the proposed connection based on the smaller of the two "Q"s computed. The maximum discharge "Q" that will be authorized is what was originally tabled from the proposed site to the LACFCD facility.

## VIII. HYDRAULIC CALCULATIONS:

- A. Identify the hydraulic grade line of the existing LACFCD facility.
- B. Show hydraulic calculations for sizing the connections to limit discharge to the allowable "Q". Use WSPG program or Manning's equation assuming the pipe will be flowing full.
- C. Show the effect of your proposed "Q" on the LACFCD facility's hydraulic grade line. Review the effects of hydraulic grade line changes on catch basin systems as necessary.
- D. Show the design capacity and flow velocity of the proposed pipe.

## IX. SUSMP REQUIREMENTS

For the following sites, submit the Exhibit "A" Connection Permit Water Quality Agreement and two sets of SUSMP calculations:

- commercial developments greater than or equal to 1.0 acre
- Parking lots 5,000 sq ft or more with 25 or more parking spaces
- Automotive repair shops
- Retail gasoline outlets
- Restaurants
- 10+ home subdivisions
- single-family dwellings
- Locations within or directly adjacent to or discharging to an environmentally sensitive area

**NOTES: SUSMP IS WAIVED IF THE CITY OR BUILDING & SAFETY HAS ALREADY APPROVED THEM. LETTER FROM CITY OR BUILDING & SAFETY IS REQUIRED**

## X. NON-STORM WATER DISCHARGES

For non-storm water discharges, submit a copy of the NPDES permit from the California Regional Water Quality Control Board, which can be contacted at (213) 576-6600 or 320 West 4<sup>th</sup> Street, Suite 200; Los Angeles, CA 90013.

## CONCRETE REMOVAL NOTES

WHERE REINFORCEMENT IS REQUIRED TO EXTEND THROUGH THE NEW JOINT, CONCRETE SHALL BE REMOVED IN THE FOLLOWING SEQUENCE.

1. A SAWCUT SHALL BE MADE ONE AND ONE-HALF INCHES DEEP AT THE REMOVAL LIMITS. CARE SHALL BE EXERCISED IN SAWING AT THE REMOVAL LIMITS SO AS NOT TO CUT THE REINFORCING STEEL IN THE REMAINING SLAB. THE EXISTING REINFORCING STEEL SHALL BE RETAINED AND EXTENDED INTO THE NEW CONSTRUCTION AS INDICATED ON THE PLANS.
2. USING HANDHELD EQUIPMENT, THE CONCRETE SHALL BE CAREFULLY REMOVED FOR THE FULL DEPTH OF THE WALL OR SLAB AND FOR A MINIMUM DISTANCE FROM THE SAWCUT EQUAL TO THE LONGEST EXTENSION OF THE EXISTING BARS TO BE EXTENDED INTO THE NEW CONSTRUCTION. THIS EXTENSION SHALL BE 30 BAR DIAMETERS, UNLESS OTHERWISE SHOWN.
3. EXISTING REINFORCEMENT SHALL BE CUT TO THE REQUIRED BAR EXTENSION.
4. THE REMAINING CONCRETE MAY BE REMOVED BY ANY SUITABLE METHOD UPON APPROVAL OF THE ENGINEER, WHO SHALL BE THE SOLE JUDGE OF THE USE OF ANY CONCRETE REMOVAL EQUIPMENT. EXPLOSIVES, WRECKING BALL, OR OTHER SIMILAR DEVICES, WHICH ARE LIKELY TO DAMAGE THE CONCRETE TO BE LEFT IN PLACE, SHALL NOT BE USED.



## EXHIBIT "A"

### CONNECTION PERMIT WATER QUALITY AGREEMENT

- I. The owner(s) of the property described below agree(s) to acknowledge for himself, his heirs, successors of interests or assigns, the following:
  - That the property maintains a connection permit with the Los Angeles County Department of Public Works for the privilege of connection and discharge of normal storm water to the Department's drainage facilities.
  - That the quality of water discharged through said connection is the responsibility of the owner(s).
  - That in the event non-storm water/material is released through said connection, whether intentional or otherwise, the owner(s) shall effect immediate and appropriate corrective measures. The owner(s) shall report the incident and the measures taken to the Department of Public Works immediately by telephone, (888) CLEAN-LA or (888) 253-2652, to be followed by a detailed, written report. Corrective actions taken shall be subject to acceptance by the Department.
  - To reimburse the County for the full cost of cleaning or repair of storm drain, water course, or channel which may be necessary because of misuse of the storm drain connection.
  - To give irrevocable consent to the representatives of the Department of Public Works to enter the premises during normal business hours for the purpose of inspecting the drainage facilities at the site.
- II. Property/Project Name and Site Address
- III. Legal Description of the Property
- IV. Name(s) and Notarized Signature(s) of Owner(s)