



Concrete Driveway Drainage Checklist

A complete guide to planning, excavating, installing, and testing driveway drainage systems.

Project Address:

Pour Date/Time:

Inspector/Owner:

Contractor: Sacramento Concrete Contractors

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Website: sacramentoconcretecontractors.com

PHASE 1 Site Assessment & Planning

Identify grading issues, runoff calculations, utility markings, and discharge parameters before breaking ground.

- ☐ **Survey the natural lot grade**
Determine which direction rainwater flows and where it naturally discharges.
- ☐ **Identify all low points**
Determine and record areas where water currently pools or saturates the soil.
- ☐ **Measure distance to foundation**
Measure the exact distance from the driveway edge to the home's foundation to protect structures from runoff.
- ☐ **Confirm existing driveway slope**
Verify current slope parameters using a level and tape measure.
- ☐ **Identify the discharge point**
Pinpoint the final outlet for the drainage system (street curb, storm drain, swale, or dry well).
- ☐ **Check local codes & permits**
Verify city or county regulations regarding discharge permits or easement restrictions.
- ☐ **Calculate driveway surface area**
Multiply length × width to determine the total surface area for proper runoff sizing.
- ☐ **Confirm soil type**
Evaluate if soil is clay, loam, or sandy. Highly non-porous clay soils require a deeper French drain system.
- ☐ **Locate underground utilities**
Call 811 to have gas, water, electric, and communication lines marked before any excavation.

Verified By: _____ Date: _____

PHASE 2 System Selection

Select correct drains, grates, pipes, and layout schemes based on grading and flow requirements.

☐ **Determine primary water source**

Identify if drainage is targeting surface sheet flow, underground water wicking, or direct gutter downspout discharge.

☐ **Select appropriate drainage system**

Choose from: Channel/trench drain (for surface sheet flow), French drain (for subsurface saturation), Catch basin (for localized low spots), or a Combination system.

☐ **Select grate load class**

Ensure Class B125 (28,000 lb) minimum rating is met for residential cars, light trucks, and SUVs.

☐ **Size the discharge pipe**

Verify a minimum 4-inch diameter pipe is specified for proper flow rate handling.

☐ **Select pipe material**

Use rigid PVC Schedule 40 (50+ year lifespan) or corrugated HDPE depending on alignment flexibility needs.

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PHASE 3 Excavation

Excavate trenches to precise depths and grade slopes for continuous gravity-fed runoff.

- ☐ **Mark all trench lines**
Apply layout outline on the ground using bright marking spray paint before excavation.
- ☐ **Trench depth for Channel Drains**
Excavate to a minimum 10 to 14 inches depth to accommodate the channel body, base bedding, and slab border.
- ☐ **Trench depth for French Drains**
Excavate to 18 to 24 inches depth to sit well below the groundwater wicking line.
- ☐ **Achieve minimum trench slope**
Verify a continuous downhill drop of at least 1/4 inch per foot (1% to 2% slope) along all trenches.
- ☐ **Compact trench floor**
Compact the underlying soil to at least 95% relative density (Proctor density) using a plate compactor to prevent settlement.
- ☐ **Install geotextile filter fabric**
For French drains, line the trench with non-woven geotextile fabric to prevent fine dirt from clogging the pipe holes.
- ☐ **Place clean gravel bed**
Verify a 3-inch clean crushed gravel bedding is placed and compacted before setting any drain bodies or pipes.

Verified By: _____ Date: _____

PHASE 4 Drain Installation

Secure physical elements, ensure tight connections, and maintain continuous downhill grades.

- ☐ **Set channel drain body elevation**
Position the grate top exactly 1/8 inch below the final poured concrete surface to capture runoff cleanly.
- ☐ **Brace drain body with rebar stakes**
Securely stake the drain body to prevent shifting, lifting, or floating during the heavy concrete pour.
- ☐ **Connect sections with watertight couplers**
Ensure all channel or pipe connections are securely coupled to avoid leaks beneath the driveway.
- ☐ **Verify continuous slope with level**
Use a bubble level or transit level to verify there are no high spots or sags along the drain line.
- ☐ **Install underground discharge pipe**
Verify the smooth outlet pipe is installed at a minimum downhill slope of 1% (1/8 inch per foot).
- ☐ **Protect grate during concrete pour**
Mask the grate openings with duct tape or cardboard to prevent wet concrete from clogging the interior.
- ☐ **Confirm watertight joint seals**
Confirm all pipe joint interfaces are sealed using manufacturer-approved rubber gaskets or solvent-weld PVC cement.

Verified By: _____ Date: _____

PHASE 5 Concrete Work & Curing

Pour high-strength concrete, consolidate thoroughly around drain bodies, and cure to full structural capacity.

☐ **Order high-strength concrete mix**

Verify delivery ticket matches a minimum compressive strength of 4,000 PSI at 28 days.

☐ **Include air-entraining admixture**

Verify 5% to 7% entrained air is mixed in for long-term freeze-thaw durability.

☐ **Consolidate concrete around drain**

Pour concrete in even lifts and consolidate using a pencil vibrator or rod to prevent voids under the drain flange.

☐ **Screed and float to design slope**

Shape the concrete surface to maintain a 1% to 2% slope dropping into the drain grate.

☐ **Apply textured broom finish**

Apply broom finish perpendicular to the drain channel to ensure traction and water channeling.

☐ **Apply curing compound immediately**

Apply a liquid membrane curing compound (meeting ASTM C309) right after final finish to retain moisture.

☐ **Protect slab from traffic**

Keep pedestrian traffic off for 72 hours and all vehicles off for a minimum of 28 days.

Verified By: _____ Date: _____

PHASE 6 Testing & Commissioning

Conduct flow tests to ensure zero pooling and rapid water exit through the discharge point.

- ☐ **Perform garden hose flow test**
Run a garden hose at the highest point of the driveway and confirm all water flows directly into the drain body.
- ☐ **Verify free exit at discharge point**
Confirm that water flows freely and discharges without blockages at the curb, swale, or storm drain outlet.
- ☐ **Check for bypass flow or ponding**
Verify that no water bypasses the grates or forms standing pools around the drain margins.
- ☐ **Inspect underground pipe joints**
Check accessible joints or basins for any signs of subsurface leaks or water backup.
- ☐ **Test catch basin inlet flow**
Pour a bucket of water directly into the catch basin to confirm rapid and unobstructed outflow.
- ☐ **Document drainage system layout**
Take photos of the open trenches and pipe alignments before backfilling for future maintenance references.

Verified By: _____ Date: _____

★ Annual Maintenance Checklist

Routine checks to maintain structural integrity and high flow capacity year-round.

- ☐ **Remove and clean all drain grates**
Remove grates in spring and fall. Clean out accumulated sediment, leaves, and debris from the channel bottom.
- ☐ **Flush discharge pipe with hose**
Insert a hose or clean-out bladder into the pipe to flush out silt and verify unobstructed flow.
- ☐ **Inspect concrete for hairline cracks**
Look for cracks along the concrete-drain interface. Seal immediately with polyurethane joint sealant to prevent water intrusion.
- ☐ **Check grate structural condition**
Inspect grates for cracking, warping, or rust. Replace any compromised sections immediately.
- ☐ **Inspect for frost heave displacement**
After winter, check if freeze-thaw cycles have shifted the grate frame out of alignment with the concrete surface.
- ☐ **Clear downspout extensions**
Clear downspout connection screens of leaves to prevent gutter water backups.

④ DRAINAGE REFERENCE SPECS

Min Trench Slope	1/4" per foot (2%)
Channel Drain Trench Depth	10" - 14"
French Drain Trench Depth	18" - 24"
Discharge Pipe Size	Min 4" Diameter
Grate Load Class (Res.)	Class B125 (28k lbs)
Pipe Material	PVC Schedule 40 / HDPE
Concrete Compressive Strength	4,000 PSI @ 28 Days
Vehicle Traffic Curing Delay	Minimum 28 Days

FINAL DRAINAGE SIGN-OFF

Contractor Name:

Contractor Signature:

Date:

Owner/Inspector

Signature:

Date: