

**DEPARTMENT OF WATER RESOURCES
PLAN SUBMITTAL TAKE-IN CHECKLIST**

This checklist was created to aid the Design Engineer in developing improvement/grading plans for submittal to the Sacramento County Department of Water Resources. Completing the checklist does not imply approval of the submitted plans. This checklist does not encompass all applicable standards but should be used as a starting point.

Project Information:

Project Name:
Project Site Address:
Project Parcel Number(s):
Project Site Acreage:
Type of Project (Single-family residential, multi-family, commercial, road):
Type of Submittal (Grading, Rough Grading, Improvement Plans):
Planning Control Number:
Contact Name:
Engineering Firm:
Contact Email:
Contact Phone:

Applicable Standards and Resource Links

- **Hydrology Standards:**
<https://waterresources.saccounty.gov/Pages/DrainageManualVolume2.aspx>
- **Drainage Study Submittal Requirements:**
<https://waterresources.saccounty.gov/Documents/Reports/FINAL%20Drainage%20Study%20Requirements%203-18-20.pdf>
- **Improvement Standards** (Sections 9 and 11 are referenced in this checklist):
<https://engineering.saccounty.gov/Pages/ImprovementStandards.aspx>
- **Floodplain Management Ordinance:**
<http://www.waterresources.saccounty.net/Pages/CodesOrdinances.aspx>
- **Standard Construction Specifications:**
<http://www.saccountyspecs.saccounty.net/Pages/default.aspx>
- **Stormwater Quality Design Manual:**
<https://www.beriverfriendly.net/stormwater-quality-design-manual/>
- **Additional Stormwater Quality Resources:**
<http://www.waterresources.saccounty.net/stormwater/Pages/newdevelopment.aspx>

Type of Submittal	Applicable Checklist Sections
All Submittals	2
Rough Grading	2, 3
Grading	2, 4
Improvement Plans	1, 2, 4, 5

Section 1: Drainage Study

NOTE: See the Drainage Study Submittal Requirements document for information regarding drainage study content.

Drainage studies are typically required when private or public storm drain systems are proposed; the project encroaches in a floodplain, watercourses are modified, stormwater quality measures are required, there are potential impacts due to the project, or other similar drainage conditions are present.

Level 4 Drainage Study Status	Mark Status	Comments
Not Required (briefly explain)	<input type="checkbox"/>	
Submitted with plans (including the parallel review agreement)	<input type="checkbox"/>	
In review (provide submittal date and include the parallel review agreement)	<input type="checkbox"/>	
Previously approved (provide approval date)	<input type="checkbox"/>	

Section 2: All Plan Submittals

All plan submittals including rough grading plans, grading plans, and improvement plans require the following:

Erosion and Sediment Control

NOTE: Section 11 of the Sacramento County Improvement Standards contains standard details for various erosion and sediment control measures. If reference is made to these drawings, it is not necessary to replicate the drawings on the erosion and sediment control plans.

- An Erosion & Sediment Control Plan is included in the plan set as a separate sheet(s), and all specified best management practices (BMPs) are presented in accordance with the latest edition of Section 11 of the Improvement Standards.
- The following notes are added to the Erosion and Sediment Control Plan.
 1. All erosion and sediment control measures shall be constructed and maintained in accordance with the current edition of the County of Sacramento Improvement Standards.
 2. Erosion control BMPs shall be installed and maintained during the wet season (October 1 through April 30). Sediment control BMPs shall be installed and maintained year-round.
 3. All drainage inlets immediately downstream of the work areas and within the work areas shall be protected with sediment control year-round. Sediment control protection shall be removed from the drainage inlets upon the County's acceptance of public improvements.
 4. All stabilized construction access locations shall be constructed per Standard drawing 11-1 where construction traffic enters or leaves paved

areas. The stabilized access shall be maintained year-round until the completion of construction.

5. All areas disturbed during construction by grading, trenching, or other activities, shall be protected from erosion during the wet season (October 1 through April 30). Hydroseed, if utilized, must be placed by September 15. Hydroseed placed during the wet season shall use a secondary erosion protection method.
6. Sensitive areas and areas where existing vegetation is being preserved shall be protected with construction fencing. Sediment control BMPs shall be installed where active construction areas drain into sensitive or preserved vegetation areas.
7. Sediment control BMPs shall be placed along the project perimeter where drainage leaves the project. Sediment control BMPs shall be maintained year-round until the construction is complete or the drainage pattern has been changed and no longer leaves the site.
8. Erosion and sediment control measures for the project should always be in substantial compliance with the stormwater pollution prevention plan (SWPPP) prepared for the project in accordance with the State of California General Construction Permit. This permit requires that the SWPPP be kept up to date to reflect the changing site conditions and that the SWPPP be always available on-site for review by state inspectors.
9. Effective erosion control BMPs shall be in place before any storm events.

- Disturbed areas and all retained existing vegetation are delineated.
- The numerical value of acreage disturbed during construction.
 - Project disturbs less than one acre. OR
 - If 1.0 acre or more is disturbed, a Waste Discharge Identification (WDID) number and blank information block to be filled out at the pre-construction meeting containing the name and telephone number of the qualified person responsible for implementing the SWPPP are included.
- A statement of quantities of material excavated and/or filled, imported or exported, and if excavation or fill is temporary or permanent.
- Existing and proposed topography (contours and spot elevations) are shown onsite and a minimum distance of 50 feet offsite.
- On-site drainage patterns, surface drainage discharge points, and details of surface discharge points are shown.
- Off-site drainage patterns and details clearly indicate where runoff enters and/or where it is routed around the site. The shed area of any offsite watershed conveyed through the project or routed around the project is stated. Details (dimensioned cross sections and flowlines, etc. of temporary channels, etc.) included on the plans.
- All structural and non-structural BMPs shown (non-structural BMPs are those statements governing the scheduling and location of structural BMPs).
- A BMP installation schedule for various phases of the project. All proposed BMPs are listed in this schedule.

Example:

BMP INSTALLATION SCHEDULE																
PHASE OF CONSTRUCTION	EROSION & SEDIMENT CONTROL MEASURES															
	WET SEASON					WET AND DRY SEASON										
	HYDROSEEDING	STRAW MULCHES & TACKLER	SOIL BINDERS	PRESERVATION OF EXISTING VEGETATION	BLANKETS, MATS, & GEOTEXTILES	FIBER ROLLS	DUST CONTROL	OUTLET PROTECTION	SILT FENCING	SAND/GRAVEL BAG BARRIERS	STORM DRAIN INLET PROTECTION	SEDIMENT TRAP	DEWATERING	STABILIZED CONSTRUCTION ENTRANCE	MATERIAL WASTE DISPOSAL LOCATION	CONCRETE WASHOUT
PRE-GRADING				X		X	X			X	X	X		X	X	
CUT & FILL ACTIVITIES	X	X	X		X	X	X			X	X	X		X	X	
UNDERGROUND WORK						X	X			X	X	X		X	X	X
STORM DRAIN IMPROVEMENTS						X	X	X		X	X	X		X	X	X
CURB & GUTTER							X			X	X	X		X	X	X
STREET IMPROVEMENTS							X			X	X			X	X	X
PAVE OUT							X			X	X	X		X	X	X
POST GRADING	X		X			X	X			X	X	X		X	X	X

- A proposed maintenance schedule of all erosion and sediment control BMPs to be used during various phases of construction.
- Measures of dust control to be taken during construction activity.
- Location and detail reference for stabilized construction access.
- Location(s) and detail reference for concrete washouts.
- Locations for equipment/material storage area, debris/solid waste stockpiles, spoils storage and vehicle/equipment maintenance, fueling and washing areas.
- Structural BMPs at:
 - project boundary
 - limits of disturbed areas
 - site perimeter (show section at perimeter of existing and proposed conditions)
 - overland flow locations such as ditches, creeks, and swales
 - tops and toes of slopes and stockpiles
 - perimeter of equipment/material storage areas, waste stockpiles, spoils storage areas, vehicle/equipment maintenance, fueling and washing areas.
- Measures (e.g., sediment basin, sediment trap, etc.) taken during the **rough grading or grading process** to intercept and detain sediment laden run-off to allow the sediment to settle in accordance with Section 11. The sediment basin is sized to capture 100% of the two-year, three-day storm event from the onsite and/or offsite shed area.

Included in the design are dewatering procedures demonstrating (graphically or verbally) how the stormwater run-off shall be evacuated from sediment traps and sediment basins (or any excavated low areas), the point of discharge to the public storm drain system, the method of secondary filtration proposed to treat discharge that appears to have high concentrations of suspended particles, and verbiage stating that alternative effective measures shall be implemented if the proposed method fails.
- Method for post-grading stabilization of all disturbed soil.
- A statement that straw mulch, soil binder, or erosion control blankets/mats shall be used in conjunction with hydroseeding during the wet season for the temporary protection of disturbed soil (hydroseeding may be used alone only

if there is sufficient time to ensure adequate vegetation establishment before the start of the rainy season).

If inlets are present:

- Drainage inlet protection in accordance with Section 11-14 has been provided. All inlets within the curb and gutter are shown as protected with an Inlet Sediment Control Barrier (DWG 11-7 in Improvement Standards).
- Concrete stamps or exposed plaques for a permanent storm drain message "No Dumping- Flows to Creek" or other approved message consistent with Section 9-14G of the Sacramento County Improvement Standards is specified.

If colloidal soils are anticipated:

- A temporary treatment basin and treatment system designed to treat and evacuate 50% of the two-year, three-day storm event within one week, along with all supporting calculations, is included in the plans. The treatment system may be shown as a contingency.

If a creek is present:

- Special BMPs implemented during creek improvements in order to prevent erosion during construction.
- Method to re-stabilize creek after completion of improvements.
- A buffer adjacent to the creek a minimum of 20 feet wide disallowing stockpiling or staging.

Stormwater Pollution Prevention Plan (SWPPP) (when required)

- If 1.0 acre or more is disturbed, a SWPPP is required, and the WDID number is provided on the plans.

Section 3: Rough Grading Plans

NOTE: To obtain permission to rough grade the site concurrently with the improvement plan review, applicants may request from SIPS a **Rough Grading Permit (also Mass Grading, Advance Grading, etc.)**. The submittal for a rough grading permit shall include the improvement plan cover sheet with the title changed from "Project X Improvement Plans" to "Project X Rough Grading Plan", and the erosion and sediment control plan sheet(s). Rough grading plans shall not include any drainage structures.

- Rough Grading Plan Note-** The following note has been added on the cover sheet of the rough grading plans:
"The Department of Water Resources considers these plans limited to rough grading activities only. As such, the review has been limited to checking for floodplain impacts and erosion and sediment control best management practices only. The Department of Water Resources will review the grading in detail as part of the improvement plan review. As such, it is understood that all grading activities by the developer and their agents are considered at-risk."

Section 4: Grading Plans

- A copy of the applicable permits from the U.S. Army Corps of Engineers, State Fish and Game, and State Water Quality Control Board is attached.
 - No permits from any state or federal agencies were required for this project.
- All conditions of approval relating to drainage development in accordance with the approved Planning Application Control No. _____ have been addressed.
- Grading plan has been prepared in accordance with Section 10 of the Sacramento County Improvement Standards.
- Minimum pad elevations have been clearly indicated.
- Overland release path and flowline elevations are clearly indicated on grading plan and include high point and low point elevations along the path.
- A detail of the overland release discharge point is provided along with any permanent release paths in accordance with Section 9 of the latest Sacramento County Improvement Standards.
- Where the overland release path leaves the ROW, include a concrete stamp that states: "EMERGENCY DRAINAGE RELEASE PATH – DO NOT BLOCK"
- Existing and proposed topography (contours and spot elevations) shown for onsite and a minimum distance of 50 feet offsite.

Section 5: Improvement Plans

General

- A copy of the applicable permits from the U.S. Army Corps of Engineers, State Fish and Game, and State Water Quality Control Board is attached.
 - No permits from any state or federal agencies were required for this project.
- All conditions of approval relating to drainage development in accordance with the approved Planning Application Control No. _____ have been addressed.

Notes Section

- The following notes have been added to the Drainage Notes Section
 1. All construction and materials for drainage shall be in accordance with the latest edition of the county of Sacramento Improvement Standards and Standard Construction Specifications. Where discrepancies exist, appropriate notes shall be added to the plans, taking precedence over the Standard Construction Specifications.
 2. The minimum cover requirements during construction for temporary construction vehicle loading shall be 4 feet for metal and plastic pipe and 3 feet for reinforced concrete pipe.

3. The contractor shall place the proper strength pipe if trench conditions encountered differ from the design trench.
4. Drainage in public right-of-way (ROW) and drainage easements shall conform to the following:
 - Drainage pipe material shall conform to section 36 and section 50 (excluding 50-20, which is not allowed) of the standard construction specifications.
 - Drainage manholes shall conform to section 39 of the standard construction specifications.
5. Testing of drainage systems
Drainage in public ROW and drainage easements shall conform to the following:
 - Drainage pipes, including drain inlet laterals, shall be tested in conformance with section 38-10 of the standard construction specifications.
 - Storm drain manholes shall be tested in conformance with Section 39-4.02 of the Standard Construction Specifications.
6. Resilient connectors, in conformance with Section 39-2.02 and STD DWG 9-7A of the Standard Construction Specifications, are required between pre-cast manhole and pipe and between pre-cast drop inlet and pipe. Water stops are required for pipe to cast-in-place manhole/drop inlet connections.
7. Erosion Control Structures (STD DWG 9-27) shall be Class B concrete, not grouted cobble.
8. All drainage inlets in public row and drainage easements shall have a permanent storm drain message "No Dumping – Flows to Creek" or other approved message consistent with 11-10A and 11-10B of the Sacramento County Improvement Standards.
9. All connections to drainage inlets shall be on the face or side allowing a minimum of 6 inches from corner. Connections to corners of drain inlets is not allowed.
10. Oblique connections to drainage inlets shall not exceed 20 degrees from perpendicular.
11. Polyvinyl Chloride (PVC) Pipe shall conform to the Construction Specifications, Section 50-26.
12. High-Density Polypropylene (HDPE) pipe shall not be used for public storm drains.

The following Water Flushing Notes have been added to the Drainage Notes Section:

Flushing of Newly Constructed Water Pipe Systems

Discharge of Potable Water into the Agency Storm Drain System (sand flush):

1. Residual Chlorine is field measured at <0.019 mg/L;
2. Turbidity must not exceed 100 NTU; or must be less than that which is measured in the receiving water + 20%;
3. pH is no less than 6.5 nor greater than 8.5.
4. If other pollutants are suspected of being present, testing and reporting to the Agency shall be conducted prior to discharge.

5. Must be hard piped direct to the storm drain catch basin/manhole or alternative method approved by the Agency.

Note:

- The County will require documentation of the aforementioned measurements for discharge volumes greater than 325,850 gallons.
- The Contractor shall be responsible for all sampling, testing, reporting and all associated costs.

Highly Chlorinated Water associated with disinfection has any of four (4) options:

1. Obtain a sanitary sewer permit. Effluent must be hard piped to a sanitary sewer discharge point.
2. Dechlorination and discharge to land with a Regional Water Board Discharge to Land permit (or waiver).
3. Dechlorination and discharge the Surface Waters with a Regional Water Board Limited Threat Discharge To Surface Water permit (or waiver).
4. Dechlorination and discharge to the MS4 with a Regional Water Board Limited Threat Discharge To Surface Water permit (or waiver) or Statewide Drinking Water System Discharge permit.

Easements

- Easement has been shown in accordance with Section 9 of the latest Sacramento County Improvement Standards.
- Easements meet minimum width of fifteen feet (15').
- Easement is not split by property line.

Plan and Profile Sheets:

- All manholes and junction structures have been sized in accordance with the Improvement Standards Section 9, note 7 on STD DTL 9-7A, and the types and sizes are clearly indicated.
- Details for custom manholes or junction structures are shown on the plans and were designed in accordance with Improvement Standards Section 9.
- There are no connections to the corner of any drainage inlet and all connections are less than 20 degrees from perpendicular. For all locations where severe angles exist, a detail is on the plans showing the connection angle and distance to the corner.
- The entire proposed public storm drain system is within the public right-of-way and/or County drainage easements.
- All plan and profile sheets include the following:
 - Flowline and Rim elevations of each manhole or junction structure.
 - Pipe sizes, material type, class, length and slope.
 - Manhole type, size, and standard detail are specified.
 - The hydraulic grade lines are shown at each of the manholes and junction structures.

- All flowlines for all cross culverts are shown in the plan view.
- Drainage inlet flowline and grate elevations, inlet type, and standard detail are specified.
- All structures have been shown in both plan and profile views.

Inlet/Outlet Structures:

- Details are shown for all debris and access racks (per County STD DTLs) for each inlet and outlet pipe that is 24-inch diameter or larger.
- Details for flared end sections or similar for inlet and outlet pipes less than 24-inch diameter are shown on the plans.

Private Drainage Systems:

- The private system is clearly labeled as such on the improvement plans.
- A County standard manhole is located within the ROW or drainage easement and at the connection from the private to the public storm drain systems to delineate the transition point between the private and public drainage systems. Label the transition node.
- For commercial or multi-family, a copy of the approved and executed private maintenance agreement describing who will do the maintenance and to what standard is attached.
- For residential, the maintenance of the private stormdrain facilities must be included in the CC&Rs for the new homes. A draft must be submitted prior to plan approval and recorded before building permit issuance.
- The following text has been added to the plans concerning the onsite private drainage maintenance:

"Owner, or owner's designate, at Owner's or owner's designee's sole cost and expense, shall maintain the private drainage pipeline in good working order and repair commensurate with the County's standards for similar drainage pipelines such that water flows freely through the system as and when weather events or other sources of surface water runoff occur. Owner shall at all times take all necessary action to keep the drainage pipeline free from debris, trash, foliage and any other obstruction which may disrupt, alter, impede or change the flow of water. Owner shall also perform any relocation of the drainage pipeline pursuant to the standard specifications of the County should relocation be necessary due to pipe failure or blockage. Owner shall hold County harmless of any claims associated with the failure of the private drainage system and shall assure the system is in good repair and serviceable at all times."

Drainage Channel & Detention Basin Sheets (when required):

- Any Creek/Channel Improvements conform to Section 9-20 C12 of the latest Improvement Standards and have included the following, at a minimum:
 - Typical sections and cross sections.
 - Profile of existing channel and top of bank profile.
 - Ten- and one-hundred-year water surface elevation.
 - Any road crossings with road profile indicating overland release.

- River station labels on the improvement plans for channels match those in the approved drainage study.
- Basin/Channel plans include details of outfall structure, inflow pipe, fencing, signage, sections at each pipe connection to the basin/channel, etc.
- Sheets for mechanical, structural, and electrical details (e.g., pump, automated trash rack) are included in the plans (when applicable).
- Permanent erosion control has been designed and detailed for each outlet pipe and culvert.
- Grading plan includes grades at the basin bottom, inlet and outlet inverts, 10- and 100-year water surface elevations, easements shown, a certification block for use by engineer or land surveyor, and calculations in accordance with the drainage master plan including:
 - Depth-volume rating curve for stormwater quality and/or
 - Depth-volume rating curve for flood control
 - Stormwater quality volume and/or
 - Flood control volume

Operation and Maintenance Manual for Basins and Channels

- Operation and Maintenance Manual for detention basin and channels is/are included in this submittal and includes the following items:
 - A vicinity map and narrative describing the location of the basin.
 - A shed map of the area served by the basin.
 - Landscaping / plantings / irrigation operation and maintenance plan
 - A narrative describing the operation of the basin (i.e., the basin provides flood detention and stormwater quality treatment, shed area served, peak flows, etc.).
 - Certified grading plan is included with approved grades at the basin bottom, inlet and outlet inverts, 10- and 100-year water surface elevations, easements shown, a certification block for use by engineer or land surveyor, and calculations in accordance with the drainage master plan including:
 - Depth-volume rating curve for stormwater quality and/or
 - Depth-volume rating curve for flood control
 - Stormwater quality volume and/or
 - Flood control volume
 - A map of the basin identifying any jurisdictional or open space areas, plantings to be protected, etc.
 - A signed narrative describing what maintenance activities are acceptable and any prohibitions against maintenance activities within the basin.
 - A copy of all Corps permits, Fish and Game permits, preserve maintenance agreements, etc. that may limit maintenance activities in or around the basin.

Post-Construction Stormwater Quality Requirement Applicability:

- The project is outside of the County MS4 permit area.

- The project is within the County MS4 permit area (see Table 3-2 Stormwater Quality Design Manual Applicable Requirements: Treatment, LID, Hydromod, Trash Capture, and Source Control)
 - Treatment Measures Required (see Table 3-2 Stormwater Quality Design Manual)
 - Provide shed map showing area draining to each Treatment measure including the proposed amount of pervious and impervious area.
 - Provide design calculations for each Treatment measure.
 - The improvement plans shall include all construction details for Treatment measures.
 - Execution of maintenance covenant is required for Treatment measures.
 - Source Control Measures Required (see Table 3-2 Stormwater Quality Design Manual)
 - The improvement plans shall include all construction details for source control measures.
 - Low Impact Development Measures Required (see Table 3-2 Stormwater Quality Design Manual)
 - Include LID Credit Worksheet (Excel file) for either residential or commercial development.
 - Provide shed map showing area draining to each LID measure including the proposed amount of pervious and impervious area.
 - Provide design calculations for each LID measure.
 - The improvement plans shall include all construction details for LID measures.
 - Execution of maintenance covenant is required for LID measures.
 - Hydromodification Mitigation Measures Required (see Table 3-2 Stormwater Quality Design Manual)
 - Provide exhibit showing location where site discharges to municipal storm drain system and/ or receiving waters.
 - Provide SAHM Project Report and WHM file (from SAHM tool), if demonstrating compliance with hydromodification flow duration criteria.
 - Provide erosion potential analysis or plan to implement instream measures to address hydromodification impacts, if applicable.
 - The improvement plans shall include all construction details for hydromodification controls.
 - Execution of maintenance covenant is required for hydromodification controls.
 - Full Trash Capture Measures Required (see Table 3-2 Stormwater Quality Design Manual)
 - Provide LID systems that comply with the State's requirements for Multi-Benefit Full Trash Capture systems.

- Provide non-LID devices from State approved list of devices that trap all particles that are 5 mm or greater.
- Execution of maintenance covenant is required for full trash capture devices.

Post-Construction Stormwater Quality Plan (PCSQP) (required if treatment, hydromodification, or LID are proposed)

The PCSQP is included with improvement plans and shows Post Construction Control Measures that meet the requirements of the local, state and federal requirements as listed on the "Control Measure Selection Matrix".

The PCSQP contains design detail and calculations to demonstrate the adequacy of the post construction control method, and includes the following items:

- Post Construction Grades
- Existing & proposed buildings and other structures
- Location of fences (gates) to ensure access for maintenance of the stormwater quality treatment device.
- Location of roof downspout (identify directly connected or disconnected)
- Pavement
- Landscaping
- Areas requiring source control measures (loading areas, fueling areas, etc.)
- Drainage systems
- Contributing shed delineation
- Post Construction Control Measures, including the following information where applicable:
 - Dimensions and setbacks from property lines and structures
 - Profile view, including typical cross-sections with dimensions.
 - Water surface elevations/freeboard
 - Inlets, outlet structures, and release points
 - Vegetation & growing medium specifications
 - Filter fabric specifications
 - Infiltration material specifications
 - Installation requirements
- Table of Post Construction Control Measures. This table shall list all Post Construction Control Measures, and for each show the type of control measure, impervious and pervious area of contributing sheds, and calculated flow (Stormwater quality, Nolte & 100-year flows if applicable).

The following is included on the PCSQP:

Post Construction Control Measure Compliance

I hereby certify that the Post Construction Control Measures were constructed as shown on the plans approved by the County of Sacramento.

Project Engineer:

R.C.E.:

Date