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Administrative Services



OC Development Services



OC Facilities Design & Construction Management



OC Facilities Maintenance & CUF



OC Fleet Services



OC Construction



OC Environmental Resources



OC Operations & Maintenance



OC Infrastructure Programs



OC Survey



This checklist is intended to be used for **Storm Drain Plan** applications for projects located within the Ranch Plan Planned Community and processed through Land Development under a Reimbursement Agreement (RA). Plans must be submitted via the Land Management System (LMS) at: <https://myOCeServices.ocgov.com>

The following basic documents are required to apply for a storm drain permit; additional information may be required by the OC Building Official based on individual project conditions.

Storm Drain Plan Submittal Requirements - RMV Backbone Only (Commercial & Multi-family Projects Case by Case Determination)

1. **Permit Application** – Provide an electronic copy of completed application via <https://myOCeServices.ocgov.com>
 - a. **Description** – Clearly describe the entire project proposal and scope of work consistent with the submitted plans.
 - b. **Financially Responsible Party (FRP)** – Designate a FRP and an active trust account. FRP shall match the owner of the trust account provided in the application.
 - c. **Other Approvals/Related Permits** – List all other related, previous and concurrent, applications and permits.
2. **Notarized Agent Authorization Letter**
3. **Concurrent Processing Letter**
4. **Storm Drain Plan** – Plans must be stamped and signed by the licensed Engineer.
5. **Plan Check Deposit** – Provide initial deposit required at the time of submittal for plan check. Refer to RA plan check deposit schedule.
6. **Bond Estimates** – Provide Engineer’s Quantity Take-off / Construction Cost Estimate for private and public improvements
7. **Sewer, Water and Recycled Water Improvement Plans for Reference Only** – Draft plans are acceptable during plan check. Approved plans by Santa Margarita Water District (SMWD) are required for final plan check and approval.

Supporting Documents

8. Geotechnical Report for reference only
9. Hydrology and Hydraulic Report
10. Water Quality Management Plan (WQMP) for reference only
11. Deviation Request Letter – See Attachment 1 for details.
12. Structural Design and Calculations
13. Copy of Final Tract or Parcel Map for reference only
14. Copy of corresponding Grading, Street and Utility plans for reference only

NOTE: All supporting documents that are concurrently being submitted and reviewed are subject to plan check under each separate permit. Comments made on other plans may affect these plans and require design modifications/responses.

Storm Drain Plan Review Checklist

Project Title: _____

Facility No.: _____

Checked By: _____

Tract/PM No.: _____

Checked Date: _____

DESCRIPTION	PLAN CHECK				COMMENTS
	1st	2nd	3rd	4th	
General					
Review conditions of approval for tentative tract/parcel maps and other related permits for special conditions, approved deviations, and modified OCPW Standards, etc.					
Drainage acceptance letter at upstream and downstream					
Structural calculations must be submitted with plans, including a retaining wall, R.C.B. or bridge, unless the structure is taken directly from the Standard Plans.					
The following factors are utilized in SD acceptance determination: <ul style="list-style-type: none"> • Facility must convey some public water. • Device cannot exclusively drain private property. Refer to Attachment 2, "Consideration of County Maintenance of Storm Drains".					
All sheets in the final plan set must have signatures and stamps by a licensed engineer.					
Drafting					
Refer to OCPW CAD Standards Manual for drafting requirements.					
Sheet size, scale and margin					
Border & title block					
Revision block					
Signature blocks (Engineer, OCPW, Sewer and Water Agency, etc.)					
All sheets must be labeled consecutively, "Sheet ___ of ___" in the lower right corner.					
Use of standard symbols					
1. Title Sheet					
Project title and description					

DESCRIPTION	PLAN CHECK				COMMENTS
	1st	2nd	3rd	4th	
<ul style="list-style-type: none"> • Be consistent with referenced conditions of approval • Identify planning area/subarea 					
Index of sheets					
Benchmark					
Basis of bearing					
Vicinity and Location maps					
Legal description					
General notes					
Legend of abbreviations and symbols					
Approved Deviations and Alternative Development Standard - Deviations to meet County ordinance section 6-2-13					
Funding source and agreements					
Identify maintenance ownership					
Utility contacts and phone numbers					
Quantity take-off, verify quantities.					
Developer/Owner name & contact info					
Dig alert					
Subject permit number and related permit/application numbers					
Conditions of approval of associated tract(s) concerning storm drain improvements					
Licensed engineer's stamp and signature, company, address, and date on plans.					
Index/Key Map <ul style="list-style-type: none"> • Utility lines in streets • Numbers of adjacent tracts • Lot configuration and lot lines • Final tract boundaries • Street names • Scale • North arrow • Identify limits of each plan sheet • City, County, or other jurisdictional limits 					
2. Plan Sheet: Plan View					
North arrow points to top or right of sheet.					
Existing improvements shown dashed with all plan reference - file numbers noted					

DESCRIPTION	PLAN CHECK				COMMENTS
	1st	2nd	3rd	4th	
SD mainline and laterals are shown.					
Junction structure type, stations, angle and additional data (C, D1, D2, etc.)					
Inlet type, station, length and height					
Manhole location and spacing per Local Drainage Manual (LDM)					
SD easements per LDM					
Hydraulic Data Table – Provide range of values consistent with the HH calc. report: <ul style="list-style-type: none"> • Design Q frequency • Design Q flow • Design Vmax • Pipe diameter • Pipe n value • Pipe flowline slope, s • Pipe friction slope • Normal depth • Critical depth • HGL elevations 					
Stationing <ol style="list-style-type: none"> 1. All stationing should refer to the centerline of storm drain, unless otherwise noted. 2. Stationing to read from left to right on sheets and run from south to north or west to east. 3. Negative stationing is not allowed. 					
Centerline curve data					
Street, alley and easement labeled and dimensioned – indicate “public” or “private” where applicable					
Show structures crossing					
SD centerline and stationing of BC and EC					
Ties to street centerline at SD ends and at centerline of inlets					
Median drain tie to SD					
Construction notes					
Match line and sheet reference					
Property lines					
Lot number/letters					
Street name and stationing					

DESCRIPTION	PLAN CHECK				COMMENTS
	1st	2nd	3rd	4th	
Angle point stationing					
Pipe bedding per SP1319 for all RCP					
Local depression details - reference street imp. plans					
Other improvements noted on plan and references to any details					
OCPW Standard Plans referenced					
Planning of MH and CB locations to ensure they will not be located within a narrowed roadway creating a risk when involved in maintenance and Emergency Services.					
Designation on all SD lines showing "Private" or "Public" delineation at ROW for lines conveying public flows. If SD lines solely convey private flows, SD must be labeled to be privately maintained to the mainline connection or where co-mingling of private and public flows occurs.					
2.1. SD Design Criteria					
Minimum cover 30" in roads					
Cover over 20 ft, refer to LDM					
Minimum pipe slope, 0.001					
Minimum pipe velocity, 3 fps					
Minimum pipe size, 18"					
Pipe aligned in outside lane or parking					
Alignment away from slopes and ret. walls					
RCP velocity > 20 fps, use 1.5" steel clearance					
RCP > 40% slope, use cut off walls					
pH less than 6.5, RCP special design					
Soil sulfate > 2,000 ppm, RCP special design					
CSP, plastic, etc., refer to LDM					
3. Profile					
Scale: <ul style="list-style-type: none"> • Horizontal (1" = 20' typ., or 1" = 40') • Vertical (1" = 4' typ., or 1" = 8') 					
Datum at both edges of sheet					
Proposed SD mainline and lateral profiles with grade/slope indicated.					
Label existing ground (dashed line)					

DESCRIPTION	PLAN CHECK				COMMENTS
	1st	2nd	3rd	4th	
Label proposed finished surface (solid line)					
Show hydraulic grade line (HGL)					
Indicate pipe length, size, material, D-load, Q and V on profile below each pipe segment.					
Show location of utilities crossings.					
Street centerline and name where it crosses profile.					
Stationing to increase from left to right of sheets and noted at bottom of profile grid (100-ft interval) – align stationing for Plan and Profile.					
Elevation to be noted at each edge of profile grid (5- or 10-foot intervals)					
Station and Elevation <ol style="list-style-type: none"> 1. At all grade breaks and equations 2. At angle point 3. At beginning and ending of junction structures and at inlets. 4. Manhole rim 5. BC and EC of pipe 6. Inlet TC or TG 7. Utilities crossing 8. At joins 					
Elevation shown at SD and top of MH to ensure requirements are met for MH Landings per LDM.					
4. Inlets and Outlets from/to Natural Channel					
Depth at inlet per Hydraulic calculations					
Riprap to 1.5 ft above Q10 tailwater					
Riprap 10 feet upstream of inlet structure					
Scour Protection <ol style="list-style-type: none"> 1. Length per Table 8-2 of LDM, min. 25' 2. Height to match depth of flow 3. Gradation of riprap per SP 1809 or as designed 4. To be installed downstream of energy dissipater 					
Energy dissipaters per LDM, Ch. 8					
Provide boundary of inlets/outlets limits for feasibility of service roads to outer extent of maintenance responsibility.					

Reviewed By: _____

Printed Name: _____

Date: _____

Company: _____

Attachment 1

Deviations/Design Exception Requests

The Deviation/Design Exception Request (Request) documents engineering decisions leading to the approval of each exception to a design standard. It is essential that adequate records are prepared and preserved to document such decisions and approvals. The engineer of record must identify proposed nonstandard design features, prepare a Deviation/Design Exception Request for review and resolve all plan check comments to the satisfaction of County staff. If all comments are satisfied, the Request may then be circulated for approval by the Director of Public Works or the person to whom approval authority has been delegated. The Request must contain the following information:

- Cover Sheet (will contain approval signatures and engineer's stamp)
- Project Description
- Existing conditions (not applicable in this case)
- Proposed work and nonstandard features – describe work to be done and nonstandard design element that required the exception
- Standard for which the exception is required – be specific, name the source (County Standard from which the deviation is requested)
- Accidents (if applicable)
- Design year traffic volumes – 20 year forecast (if applicable)
- Description of any additional work to enhance safety – mention any additional work which would qualify for safety enhancement such as slope flattening, super correction, elimination of roadside obstacles, etc.
- Reasons for requesting exception- be thorough but brief (land form configurations, value engineering and character of the community are not acceptable engineering reasons)
- Provide scaled drawings, technical documents and/or other exhibits to assist in reviewing the request
- Provide cross sections and/or special details to clearly illustrate the proposed condition for each location that does not meet the standard
- Letters, resolutions, traffic study summaries, etcetera should only be attached if requested
- The Request shall be signed and stamped by the Engineer of Record

Attachment 2

	Consideration of County Maintenance of Storm Drains	300 N. Flower Street
		 714.667.8888  714.667.8885
 ocpCustomerCare@ocpw.ocgov.com www.ocplanning.net		

The following factors are typically used by County of Orange in consideration of request from developers/clients for County/public maintenance of drainage facilities:

- Facility must convey some public water.
- County of Orange maintenance does not include OCFCD facilities.
- Must meet the Flood Protection Goals, the County's Local Drainage Design criteria and County Standard Plans.
- Construction Plans must be approved by RDMD/PDS/Subdivision Manager/designee.
- Maintained by Road Funds so some water must come from public streets or related drainage.
- Device cannot exclusively drain private property.
- Drains must be in public roadway, within public property or in an area that has a public easement area dedicated to the County.
- Lateral or mainline that exclusively drain private areas should be privately maintained.
- County does not want systems with public inlets only at the upstream portion of the system.
- County must be able to maintain the device/facility, utilizing similar maintenance efforts expended for similar devices/facilities in other parts of the County and said device/facility must not create undue or unique burden on the County to maintain.
- Easements adequate for access and maintenance must be provided.
- Inclusion of a storm drain in a Master Plan of Drainage or the assignment of a facility designation (e.g., L02P13) does not guarantee the facility will be maintained by the County.