

## COUNTY OF SANTA BARBARA

### **STANDARD CONDITIONS FOR PROJECT PLAN APPROVAL –WATER QUALITY BMPS**

1. All new residential, commercial, industrial, and transportation development projects, including redevelopment projects, must address water quality through the use of best management practices (BMPs) as determined by the Director of Planning & Development and/or the Public Works Director. BMPs shall be applied in the following order of priority: site design, source control, and treatment control. Examples of good site design include reducing directly connected impervious areas and incorporating drainage system elements into site design. Examples of source control include covered parking or use of Integrated Pest Management techniques in landscape maintenance. Examples of treatment control include systems that either detain or filter water to remove pollutants prior to discharge. Furthermore, projects will seek to reduce post-development runoff volumes from pre-development volumes through such measures as infiltration, evapotranspiration, and storage/reuse.
2. Treatment control BMPs shall meet the following specific design requirements unless otherwise approved by the Public Works Director.
3. At a minimum, these specific design requirements for treatment control BMPs apply to all new or redevelopment projects of the following sizes: residential 1 acre or greater in disturbance; and commercial industrial , and transportation / vehicle facilities which are 0.5 acres or greater in disturbance. Treatment control BMPs may be required on new development or redevelopment projects at the discretion of the Public Works Director, based upon the categories listed in Attachment A. The selection of BMPs shall be based upon the ultimate use of the drainage area, unless the facility will be re-built/sized during subsequent phases of construction.
4. Projects cannot be subdivided or phased to avoid complying with these requirements. Development and redevelopment of the same or adjacent property(ies) permitted within 5 years may be considered together for purposes of assessing the above criteria..
5. All water quality facilities will require regular maintenance. Applicants are required to enter a maintenance agreement with the District to ensure adequate performance and to allow County emergency access. Maintenance of the basin is the responsibility of the development, unless otherwise agreed upon.

6. **Detention Basins.** Detention of storm water runoff allows for the settling of fine particles and associated pollutants. Detention times for water quality control are longer than for flood control. Although a detention system for water quality control could be combined with a flood control system, the volume assigned for water quality control must meet minimum detention times. The required design volume for detention-based storm water quality treatment facilities is equal to the runoff volume that would occur from the contributing area from a 1.2-inch rainstorm event.

a) The volume calculation will be computed as follows:

$$WQDV = (.05 + 0.9 \times IMP) \times 1.2'' \times A \times 3630$$

where,

- WQDV = water quality design volume (cubic feet)
- IMP = total impervious area, expressed as a percentage
- A = tributary area (acres)
- 3630 = factor to convert units from acre-inch to cubic feet

b) The draw-down (or draining) time for the detention volume, which is intended to drain down completely (vs. permanent wet volume), shall be greater than or equal to 36 hours. For the top half of the detention volume, the drawdown time shall be greater than or equal to 12 hours. The remaining bottom-half of the detention volume must drain in no less than 24 hours. The outlet shall be sized using Figure 1 to achieve the required detention times and shall be large enough that clogging is unlikely to occur. Pipes less than 4 inches in diameter should not be used. Perforated risers are acceptable for controlling the flow rate. However, potential clogging of the perforations should be addressed in the maintenance plan.

c) The detention system shall be designed to maximize the distance between the inlet and outlet, and to minimize "dead spaces" (areas where little or no exchange occurs during a storm event), thereby limiting short-circuiting. A minimum flow-path length to width ratio of 3 is recommended and can be achieved using internal berms or other means to prevent short-circuiting.

d) For ponds designed to be permanently wet, the applicant must show a water balance that demonstrates that there will be sufficient dry weather flows to maintain the planned pool volume, without creating stagnate conditions. A Mosquito Management Plan or Service Contract must be approved or waived by the Santa Barbara Coastal Vector Control District for any facility that maintains a pool of water for 72 hours or more.

e) For dry extended detention ponds, the applicant must show that the pond will be able to handle dry-weather flows (such as irrigation return flows) without causing a nuisance (visual eye sore, stagnate water, etc.).

f) Detention based water quality systems are recommended to be off-line from flood conveyance. If they are to be on-line or combined with a flood detention facility, then the facility must be designed to pass the appropriate flood without damage to the facility, as well as to minimize re-entrainment of pollutants.

7. **Flow-through Facilities.** Flow-through based storm water quality facilities are ones where either the flow is passed with little or no storage through a filtration media or infiltrated into a subsurface soil matrix. The purpose is to remove, through filtration, the smaller sized fraction of particles. Examples of these BMPs include vegetated swales, infiltration facilities, bioretention filters, and some types of commercial filters.

a) The required flow rate for flow-through based storm water quality treatment facilities is the runoff that would be produced from a rainfall intensity of 0.3 inches per hour. Water quality treatment shall be maintained at this rate for a minimum of four hours. Flows above this rate can either be by-passed, or routed through the facility if it can be demonstrated that velocities will not re-entrain captured pollutants.

b) The flow-through based facility must be able to completely treat the flow rate based upon the following:

$$WQFR = (0.05 + 0.9 \times IMP) \times 0.3 \times A$$

where,

- WQFR = water quality flow rate in cubic feet per second
- IMP = total impervious area, expressed as a fraction
- A = area of the site in acres

c) Infiltration facilities shall only utilize highly permeable soils with significant pollutant removal capacities. The applicant must demonstrate that slope stability, groundwater quality, and depth to groundwater are suitable for infiltration facilities. Infiltration facilities will require periodic maintenance to maintain permeability.

d) Vegetated (wetland/native plants and/or grass) swales shall be designed so that at the water quality flow rate (WQFR), the swale width is such that the flow depth is no greater than 4 inches and the hydraulic grade line is no greater than 2 percent (unless drop structures are employed) between structures. The inflow should be directed towards the upstream end of the swale as much as possible, but should at a minimum occur evenly over the length of the swale. The length of flow in the swale should be a minimum of 100 feet or the bioswale should provide 10 minutes of contact time with the vegetation.

e) Bioretention filters are vegetated (landscaped) areas where runoff is directed through vegetation and soils for filtration. In most cases, unless there is shown to be

adequate infiltration capacity, underdrains and overflow drains should be included to collect filtered runoff to discharge to the storm drainage system. The ponding depth should be 6 inches or less with a stabilized mulch layer of 2 to 3 inches. A sandy planting soil of 2 to 3 inches should be used. Each facility should have no more than 1 acre of tributary area, and shall be designed to convey larger flows in a manner that does not cause re-entrainment of trapped materials.

f) Commercial (media) filters or such devices shall be accompanied by a certification from a licensed civil engineer that the filter/device will maintain an effluent quality of 10-30 mg/L of total suspended solids with no visible oily sheen under design operating conditions.

8. Combination facilities, or treatment trains, are encouraged to provide better treatment capability. For example, short-term detention may be placed upstream of a flow-through facility to reduce the size of the flow-through facility. In such cases, each facility will be reduced in size accordingly based upon demonstrated water quality effectiveness for the pollutants of concern.
9. These are minimum requirements. If the County determines that additional controls and/or lower thresholds for developments are required to meet specific water quality regulatory requirements (NPDES, TMDL, etc.) in watersheds that drain to sensitive receiving waters (as defined by the Central Coast Regional Water Quality Control Board), additional requirements may be imposed. These may include design requirements that result in larger or more effective facilities as well as additional types of structural or non-structural controls. The design solution will be contingent upon the pollutants that are found to be impacting such water bodies and the regulatory status of the water body.
10. Easements, fencing, grading, access roads, ramps, etc. for water quality facilities shall be provided in accordance with current policies of the Flood Control District. Easements, if required, shall be dedicated on the Final Map or dedicated by a separate instrument. The Developer will pay the cost for easement acceptance by the County and processing through County Real Property Agents.
11. A Surety Bond for structural improvements will be posted with the Public Works Department in an amount approved by the Public Works Director prior to recordation of the Final Map or Zoning Clearance. Bond amounts will be based on the submitted cost estimates of proposed drainage improvements to be constructed outside the Public Road right-of-way.
12. The Flood Control District shall be notified 5 working days in advance of storm drain and attendant auxiliary construction. The District may provide periodic inspection during construction at the developers cost. A note shall be placed on the plans to this effect.

13. During the construction process, the County will review and approve in writing any significant design revisions to the approved Plans prior to construction of the proposed revisions.
14. Prior to occupancy clearance, the "As-Built" Plans shall be submitted to the Santa Barbara County Public Works Department.
15. A Flood Control Encroachment Permit is required for improvements in the Flood Control District right-of-way. An Encroachment Permit shall be executed prior to the start of construction within District right-of-way. District notification shall be required 5 working days prior to the start of construction. An Encroachment Permit fee is required. A note shall be placed in the plans to this effect.
16. Review by the Public Works Department of plans and granting of encroachment permits does not relieve the applicant, developer, contractor and/or owner from the responsibility to obtain all other required permits and approvals required by law, including but not limited to grading permits, building permits, environmental review for CEQA/NEPA requirements, Fish & Game permits, Army Corps of Engineers permits and other City, CalTrans or other County department approvals and the approval of the underlining property owner(s) of record
17. The County reserves the right to modify these conditions as site conditions warrant.

**STANDARD CONDITIONS OF APPROVAL FOR WATER QUALITY  
RECOMMENDED BY:**

Signed copy on file Flood Control

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Robert Almy  
Water Agency Manager

**STANDARD CONDITIONS OF APPROVAL FOR WATER QUALITY  
APPROVED AND ADOPTED BY:**

Signed copy on file Flood Control

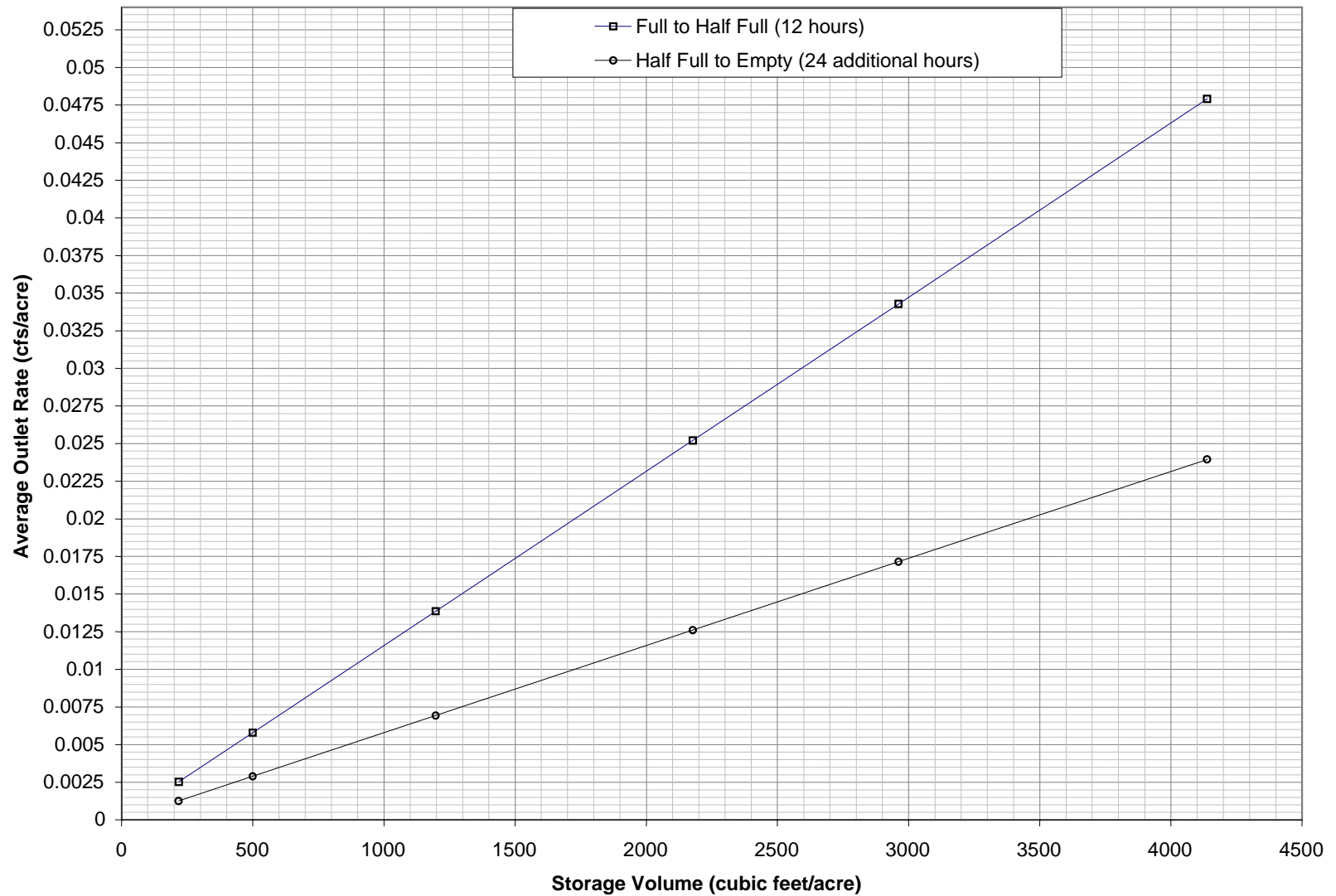
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Thomas D. Fayram, P.E.  
Deputy Public Works Director

## **Attachment A**

All discretionary development and redevelopment projects that fall into one of the following categories are subject to these conditions of approval:

- Single-Family Hillside Residences
- 100,000 Square Foot Commercial Developments
- Automotive Repair Shops
- Retail Gasoline Outlets
- Restaurants
- Home Subdivisions with 10 or more housing units
- Parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to storm water runoff



**FIGURE 1. REQUIRED AVERAGE OUTLET DISCHARGE RATES FOR DETENTION BASED FACILITY**

**SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT  
STANDARD CONDITIONS OF PROJECT PLAN APPROVAL**

1. Hydrologic studies shall be made of the entire watershed area contributing drainage to the project. Both calculations and clearly marked watershed maps shall be submitted at the plan check submittal for approval by the Flood Control Engineer. Contributing areas are based on natural contours or an accepted master drainage plan. Drainage quantities shall be derived from considerations of expected future development of the watershed, soil types, historical storm data, gradient of terrain, etc. These considerations must receive approval by the Flood Control Engineer. For most major channels, flow quantities may be supplied by the Flood Control Engineer if available. The Hydrologic studies shall provide pre-development and post development analysis for 5 through 100 year storm events. New development shall mitigate for increased runoff by directing drainage to an acceptable watercourse, improving downstream facilities, or by mitigating the increased runoff on-site at the discretion of the Flood Control Engineer.

2. Improvements may be required to intercept and convey off-site and on-site runoff through the project site to a District approved water course or drainage facility.

3. Watercourses shall be placed in closed conduits where the flow requires pipe diameter of 48 inches or less. Artificial water courses which convey runoff generated within the tract shall be in a closed conduit regardless of size.

4. Storm drains and drainage inlets shall be sized for a peak 25-year runoff event with a positive overland escape design for a 100-year storm. Minimum size for Storm Drains shall be 18 inches unless otherwise approved by the Flood Control Engineer.

5. Storm drains and drainage inlets in sump conditions shall be sized for a 100-year storm and shall provide positive overland escape.

6. Drainage inlets shall be designed and located in a manner which will assure adequate travel lanes with no more than 10 cfs conveyed per gutter, within the curbs, in a 10-year storm. A 25-year storm flows should be contained within the curbs; 100-year storm flows should be contained within the right-of-way or private street easement.

7. Development located within the limits of floodplain/floodway as shown on the current Federal Insurance Rate Maps (FIRM) may be required to process a FIRM map revision/amendment prior to land use clearance and/or recordation of a final map. Development within the floodplain/floodway as shown on the current FIRM maps shall meet all requirements in the County's Floodplain Management Ordinance No. 3898 and the County's Setback Ordinance No. 3095.

8. Grading and improvement plans for drainage improvements signed by a civil engineer shall include the following information:

a) The Design energy and hydraulic grade lines shall be on the Improvement or Underground Storm Drain profiles. Junction losses are to be calculated by a momentum analysis.

b) The 100-year Energy and Hydraulic Grade Line shall be shown on plans and profiles for open channel designs.

c) Hydraulic data shall be included on engineering plans for all drainage channel, pipes, etc. as required by the Flood Control Engineer.

d) Storm drain center lines and drainage inlet locations shall be identified on the Grading Plans.



e) Hydraulic/hydrologic studies shall be prepared and signed by the California Registered Engineer who signs the improvement plans. The use of District computer programs for designing drainage improvements and retention basins is encouraged.

9. Projects shall be designed with a clearly defined permanent overland escape path (preferably a street) for storm runoff. The escape path should be free of obstructions such as fencing, sound walls, etc. Downhill sump cul-de-sacs shall have an improved dedicated overland escape.

10. Pursuant to County Ordinance 3898, the lowest finish floor elevation of all new structures shall be at least 2 feet above the 100 year water surface elevation. Graded lot pads with slab on grade foundations shall be at least 1.5 feet above the 100-year water surface elevation, with finish floor 2' above 100 year elevation. Finish floor elevations may be increased if deemed necessary by the Flood Control Engineer. Finish floor elevations shall be higher than overland escape of adjacent streets, bridges and other obstructions.

11. Retention basins are required by the District in the Orcutt/Santa Maria area to reduce peak runoff generated from the development site. Basins are also required for Greenhouse Development. Basins may be required in other areas of the County if downstream facilities are determined to be inadequate by the Flood Control Engineer. Basins shall be designed to meet the following standards:

a) Greenhouses: Retention Basins are required for greenhouse development. Basins shall provide retardation for the 5 through 100 year storm events, where appropriate. Post-development runoff shall not exceed 75 percent of the calculated pre-development runoff.

b) Hydraulic Analysis: The hydraulic analysis of retention basins shall be performed by a Registered Civil Engineer using the Santa Barbara Urban Hydrograph Computer Program or District approved equivalent. The Santa Barbara Urban Hydrograph (SBUH) computer program is available from the District under a license agreement.

c) Volume: Retention Basins shall be sized to provide capacity for a 25 year storm event (minimum) and to meet the outflow requirements listed below. Generally, the minimum volume provided should not be less than .07 acre feet per acre for residential developments, or .10 acre feet per acre for commercial developments for sites that are 3 acres or less. Sites greater than 3 acres shall be designed with the SBUH computer program. The volume capacity for retention basins may be increased as determined by the Flood Control Engineer based upon downstream conditions.

d) Outflow Device: All retention basins are to be designed to be free draining. Inlet structures shall be located next to the outlet structure where feasible. Terminal basins (i.e. pumped basins) are not allowed. Outlet pipes shall be oversized (18 inch minimum) with an orifice restriction to limit outflow to .07 cubic feet per second per acre of developed land or as determined by the Flood Control Engineer. Orifice restriction plates shall be removable for emergency situations. A removable trash rack shall be provided at the outlet. Orifice plates and trash racks shall be galvanized. Mounting hardware shall utilize stainless steel bolts.

e) Slopes: Maximum side slopes shall be four horizontal to one vertical on interior slopes and two horizontal to one vertical on exterior slopes. A District-approved soil cement core mix design, or a two sack slurry trench shall be required on all filled levee sections. A soils engineering and geotechnical engineering report shall be provided for all fill levee sections. The report shall address remedial grading, benching, and slope stability of the level sections.

f) Emergency Overflow: An emergency overflow spillway shall be sized for the peak 100 year storm runoff. The spillway shall be engineered and shall be reinforced concrete. The spillway should be designed with a minimum of 1'0" of freeboard above the 100 year spill water surface elevation.

g) Low flow drainage: The bottom of the basin shall have a minimum gradient of 2% draining to the outlet; or a low flow reinforced concrete swale shall be provided with a minimum gradient of .5% draining to the basin outlet.

h) Access Ramp: A graded 16' wide maintenance access ramp shall be provided down into the basin near the outlet. A 16' wide commercial driveway approach shall be provided where curb and gutter front the maintenance ramp.

i) Fencing: Perimeter fencing (minimum height of 42 inches) shall be required on all basins exceeding two feet in depth or where interior side slopes are steeper than six horizontal to one vertical. A double eight foot wide swing gate (16 feet total) shall be provided at the access ramp.

j) Landscaping: The Flood Control District shall require review and approval of any proposed basin landscape plan. Landscape planting shall be selected to be as maintenance free as possible. No trees and /or shrubs are to be planted within 15 feet of the basin outlet. Floating objects such as railroad ties and landscape bark are not permissible.

k) Maintenance: Prior to recordation of the final map or final development approval, the applicant shall enter into a maintenance agreement with the District to assure perpetual maintenance of the basin and related on-site private drainage improvements and to allow the County emergency access. A copy of the CC&R's shall be submitted to the District for approval. Maintenance of the basin is the responsibility of the development.

12. A Plan Check fee deposit made payable to the Santa Barbara County Flood Control and Water Conservation District shall accompany the initial Grading and/or Improvement plan submittal. The plan check fee deposit shall be the amount as shown in the current District fee schedule.

13. Where drainage waters are discharged from the project site in a concentrated manner, e.g. streets, channels, culverts, such drainage shall be conveyed to established water courses in a non-erosive manner. Easements for off-site drainage conveyances shall be acquired and presented to the Flood Control office prior to recordation or zoning clearance. A title report shall accompany these easements.

14. Easements, fencing, grading, etc. for Flood Control facilities, access roads and ramps shall be provided in accordance with current policies of the Flood Control District. Easements shall be dedicated on the Final Map or dedicated by a separate instrument. The cost for easement acceptance by the District and processing with the Real Property Department will be paid by the Developer.

15. A Surety Bond for drainage improvements will be posted with the Public Works Department in an amount approved by the Flood Control Engineer prior to recordation of the Final Map or Zoning Clearance. Bond amounts will be based on the submitted cost estimates of proposed drainage improvements to be constructed outside the Public Road right-of-way.

16. One copy of District approved Grading and/or Drainage Plans, and Improvement Plans and Final Map shall be submitted on aperture cards as well as one copy of signed prints of the same shall be furnished to the District prior to recordation or zoning clearance.

17. The Flood Control District shall be notified 5 working days in advance of storm drain and attendant auxiliary construction. The District may provide periodic inspection during construction. A note shall be placed on the plans to this effect.

18. The California Registered Civil Engineer that signs the Grading and/or Improvement Plans shall be responsible for the inspection of drainage improvements located outside the Public Road right-of-way. When required, special inspection will be performed for construction of drainage facilities. An inspection fee deposit agreement along with an inspection fee deposit will be required. Inspections will be charged at an hourly rate against the deposit. A note shall be placed on the Grading and/or Improvement Plans to this effect.

19. A Drainage Improvement Certification will be required prior to occupancy clearance. The District certification form requires that the California Registered Engineer certify that all drainage improvements (i.e. ditches, swales, channels, storm drains, drainage inlets, junctions, retention basins, revetment, etc.) were constructed in substantial conformance with the approved Plans. A note shall be placed on the plans to this effect.

20. During the construction process, the District will review and approve in writing any significant design revisions to the approved Plans prior to construction of the proposed revisions.

21. Prior to occupancy clearance, the "As-Built" Plans shall be submitted to the Santa Barbara County Flood Control and Water Conservation District.

22. A Flood Control Encroachment Permit is required for improvements in the Flood Control District right-of-way. An Encroachment Permit shall be executed prior to the start of construction within District right-of-way. District notification shall be required 5 working days prior to the start of construction. An Encroachment Permit fee is required. A note shall be placed in the plans to this effect.

23. Review by the District of plans and granting of encroachment permits does not relieve the applicant, developer, contractor and/or owner from the responsibility to obtain all other required permits and approvals required by law, including but not limited to grading permits, building permits, environmental review for CEQA/NEPA requirements, Fish & Game permits, Army Corps of Engineers permits and other City, CalTrans or other County department approvals and the approval of the underlining property owner(s) of record.

24. The District reserves the right to modify these conditions as site conditions warrant.