

City of Fontana
Public Works & Engineering Department
Grading Plan Checking Guidelines

A. INTRODUCTION

- ____ 1. Commencing on January 1, 2026, The Engineering Department (“Engineering”) will begin reviewing all new grading plans within the City of Fontana. Grading plans reviewed by Engineering will be issued permits by Engineering.
- ____ 2. Except as exempted in California Building Code (CBC) Section J103.2 (as amended by Fontana Municipal Code 5-62), grading shall not be performed without first having obtained a permit. A grading permit shall not be required for the following:
 - a. When approved by the building official, grading in an isolated, self-contained area, providing that the public is not endangered and that such grading will not adversely affect adjoining properties
 - b. Excavation for construction of a structure permitted under the CBC
 - c. Cemetery graves
 - d. Refuse disposal sites controlled by other regulations
 - e. Excavations for wells, or trenches for utilities
 - f. An excavation that does not exceed 50 cubic yards on any one lot and does not obstruct a drainage course that is:
 - i. Less than 2 feet in depth, or
 - ii. Does not create a slope greater than 5 feet in height and steeper than 1.5:1
 - g. A fill does not exceed 50 cubic yards on any one lot and does not obstruct a drainage course that is:
 - i. less than one in depth and placed on natural terrain with a slope flatter than 5:1, or
 - ii. less than 3 feet depth, not intended to support structures
- ____ 3. As required by FMC Section 5-62, all grading plans shall be prepared by a state licensed or registered design professional. Grading plans that grade in excess of 5,000 cubic yards of material shall be prepared by a state registered civil engineer.
- ____ 4. A geotechnical report shall be provided per CBC Section 104.3, except where the building official determines the nature of the work applied for is such that a report is not necessary. The report shall be prepared by a registered design professional.
- ____ 5. Grading within flood hazard zones shall conform to California Residential Code Section R306 (Flood-Resistant Construction) as amended by FMC Article II of Chapter 12.

- _____ 6. Grading plans can include construction of proposed private drainage devices. However, private sewer and water improvement plans will continue to be reviewed and inspected by the Building and Safety Department.
- _____ 7. Retaining walls and shoring should be shown on grading plans. However, the Building and Safety Department will review, and issue permits for wall and shoring plans. Both subsurface and surface drainage devices associated with retaining walls should be depicted on grading plans.
- _____ 8. Information provided on the plan related to Accessibility will not be reviewed by Engineering for compliance with State and federal regulations. Accessibility information on precise grading plans shall be reviewed by Building and Safety Department.

B. TYPES of GRADING PLANS

- _____ 1. Grading plans will typically be identified as:
 - a) **Rough Grading Plan** – Typically drawn at a scale of 1" =40', sometimes drawn at other scales. Focus is on building pad, street undercut, parking lot undercut and edge condition grading. Rough grading plans have existing ground topography shown in the background, existing and proposed property lines, and many “typical sections” (especially at the edge of grading). The focus is on moving large volumes of soil, remediating adverse soil conditions, compacting fill soils, over-excavation and compacting of cut soils, grading significant slopes, and grading building pads, subbase grading for streets, private community driveways, and parking lots. For hilly terrain, privately owned and maintained interceptor/brow ditches near project boundary lines (for overland run-on and run-off conditions), terrace drains in the middle of large slopes and other open ditches may be included. Rough grading plans are frequently used for residential and large industrial projects that will have multiple buildings constructed in multiple phases.
 - b) **Precise Grading Plan** – Typically drawn at a scale of 1" =20', sometimes drawn at a scale of 1" =30' (for large industrial projects), rarely at other scales. The focus is on the final building (floor) locations and elevations, drainage swales near buildings, drainage inlets type and elevations, walkways, drive aisles and parking lot grading. Precise grading plans often include other work besides grading, such as onsite (private) drainage systems, paving, and walkways. These can be called names such as “Precise Grading and Paving Plans” or “Precise Grading and Private Drainage Plans”. These plans do not include existing ground topography but do include the ultimate property lines.
 - c) **Mass Grading Plan** – Typically drawn at a scale of 1" =40'. The focus is on moving large volumes of soil, remediating adverse soil conditions, compacting fill soils, over-excavation and compacting of cut soils, grading significant slopes, but not grading building pads, undercutting streets nor undercutting parking lots. The plans are typically used for very large projects, with hilly terrain where the final placement of buildings, streets, etc. has not been determined. For hilly terrain,

privately owned and maintained interceptor/brow ditches near project boundary lines (for overland run-on and run-off conditions), terrace drains in the middle of large slopes and other open ditches may be included. These plans are rarely used in Fontana. Mass grading plans are a simpler version of a rough grading plan.

- d) **Stockpile Plan** – These may be drawn at scales between 1" =40' and 1" = 100'. The focus is on providing a location for soil that is imported to a site in advance of other grading operations. A stockpile plan will show the location and height of the stockpile together with routes for haul vehicles between the stockpile and a public street. Stockpiles may be placed far in advance of other grading operations, so erosion, sediment and dust control are also important considerations. The plan will show project boundary lines and existing ground topography for the site and surrounding properties.
- e) **Grading Plans** - Sometimes rough and precise grading work are combined into one plan. When this occurs, expect to see all the items listed above under Rough Grading Plans and Precise Grading Plans. Whatever the name, these are reviewed as a combination of two distinct processes, rough grading by heavy equipment that move large volumes of soil and provides for remediation of negative soil conditions in preparation of building construction plus fine grading that occurs after buildings are largely constructed. Review fees for both rough and precise grading plans will be incurred.

_____ 2. Grading plans may include provisions for the construction of onsite (private) drainage devices but shall not include provisions for the construction of private water, sanitary sewer, onsite septic systems and fire protection systems. These shall be submitted to the Building and Safety Department or the Fire Department for review. Existing public storm drain and sewer improvements shall be shown for reference only. These shall be constructed from separate improvement plans that are reviewed by the Engineering Department.

_____ 3. Grading design shall conform to the latest adopted version of the California Building Code (CBC) including Appendix J as amended by Fontana Ordinance 1975 and various sections of the Fontana Municipal Code (FMC), also as amended by Fontana Ordinance 1975.

C. GRADING PLAN SUBMITTAL

- _____ 1. Grading plans shall be submitted in a digital PDF format via the Build Fontana portal at: <https://www.fontanaca.gov/3589/Build-Fontana>.
- _____ 2. The design engineer should use the following guide to determine the items needed to be provided with the grading plan or are available to the City via Accela. Other issues raised during the entitlement phase of a project may warrant submittal of other items. Brackets indicate the Accela record type which includes the year submitted (YY) and assigned identification number (XXXXX)

| | Rough Grading | Precise Grading | Mass Grading | Stockpile Grading |
|--|------------------|--------------------|-----------------|----------------------|
| Grading/Erosion Control Plan * (EGPCYY-XXXXXX) | A | A | A | A |
| Drainage Study (EDSYY-XXXXXX) | U | N | U | N |
| Offsite Property Grading Permission (Submit with grading plan) | AO | AO | AO | N |
| Environmental Approval | A | A | A | A |
| Geotechnical Investigation/ Recommendation Report ((GEOTECHYY-XXXXXX)) | A | A | A | N |
| Approved Final WQMP (WQMPPCYY-XXXXXX) | A | A | A | N |

A - Always, U – Usually, AO – As Occurs, N- Not Usually, * - See exception under A.2, above

3. Grading plans reviews shall be initiated by submitting to the Engineering Department. Plans shall be routed within the City by the Engineering Department for review as follows:

| | Engineering Department | Planning Department | Building Department | Landscape Division | Fire Department |
|----------------------|---------------------------|------------------------|------------------------|-----------------------|--------------------|
| Rough Grading | X | X | X | X | |
| Precise Grading | X | X | X | X | |
| Mass Grading | X | X | X | X | |
| Stockpile Grading | X | X | X | | |

4. Plan review fees will be assessed after the initial submittal via the Build Fontana portal. Typical of the plan review processes throughout the City, the plan review process begins upon fee payment, not plan submittal. Additional review fees will be charged after the 3rd plan check cycle.

5. See the plans for additional comments.

6. Plan resubmittals shall include plan check comment responses to comments from all departments, either on the plan or separate memo.

7. If information is omitted or missing, the city may determine that a plan is lacking information that prevents a thorough review by the checker. Such instances are considered a partial plan check, possibly resulting in additional reviews. Plan reviews after the 3rd review will be charged additional review fees.

D. PLAN FORMAT and GENERAL INFORMATION

- ____ 1. Plans are reviewed for consistency with the appropriate sections of the California Building Code, the California Residential Code, Fontana Municipal Code and Fontana Standard Plans.
- ____ 2. Maximum drawing size is unlimited. An AutoCAD template file for a 24" x 36" drawing is available for download from the Fontana Grading Requirements webpage.
- ____ 3. Minimum text size 1/10 inch high
- ____ 4. Latest Engineering Department grading general notes dated _____.
- ____ 5. Vicinity Map
- ____ 6. Plan sheet index, if applicable
- ____ 7. Property legal description, address, and assessor's parcel number(s)
- ____ 8. Property owner and applicant contact information
- ____ 9. Design engineer's name, contact information, signature and stamp
- ____ 10. Geotechnical engineer's review statement, signature and stamp acknowledging the design is consistent with the geotechnical report requirements and recommendations and all required tests, inspections and reports will be conducted as necessary.
- ____ 11. Legend for lines, symbols, and abbreviations
- ____ 12. North arrow and scale
- ____ 13. Label all streets, public alley, and private community driveway by name, if applicable
- ____ 14. Volume of soil cut, fill, remedial grading, import and export
- ____ 15. Construction notes and quantities of proposed private drainage facilities
- ____ 16. Benchmark with description
- ____ 17. Provide the following note on the first sheet: Should grading shown hereon not commence within two years of plan approval and carried forth in a diligent manner, the city engineer may require revisions to the plans to bring them into conformance with standards in effect.
- ____ 18. Distinct boundary for the property, fully dimensioned
- ____ 19. Identify existing and proposed easements, covenants, and right of way, fully dimensioned. Provide county recorder's recording data or, "as proposed by" information.
- ____ 20. Existing utilities within the property and adjacent streets/easements labeled included owner's name
- ____ 21. Existing structures, fences, walls and other key manmade improvements, fully labeled including disposition. Removal/demolition of existing structure to be noted as separate Building Department permit.
- ____ 22. On proposed locations for water quality infiltration BMPs, provide notes, fencing and/or other means to notify all parties so that compaction of native soil is avoided. If

heavy equipment is allowed on these areas, retesting for infiltration rates will be required. An amendment to the WQMP and redesign of the infiltration system may be required.

- _____ 23. Conditions of Approval shall be made part of the plan.
- _____ 24. When City of Fontana and other agency standard plans are used, the agency's detail must be provided on the plan.
- _____ 25. For all projects, provide an Erosion, Dust and Sediment Control Plan including Engineering Department general notes.
 - a. Manage storm water during construction of residential projects in accordance to the California Green Building Standards Chapter 4 (Residential Mandatory Measures), Division 4.1 (Planning and Design), Section 4.106 (Site Development) to prevent flooding of adjacent property and prevent erosion and retain runoff on the site.
 - b. Manage storm water during construction of non-residential projects in accordance with the California Green Building Standards Chapter 5 (Non-Residential Mandatory Measures), Division 5.1 (Planning and Design), Section 5.106 (Site Development) to prevent the pollution of stormwater runoff due to construction activities. Use an effective combination of erosion and sediment control and good housekeeping BMPs.
- _____ 26. For projects with a total disturbed area of one acre or more, provide the State issued Waste Discharge Identification Number (WDID) on the title sheet. Verify WDID number on SMARTS.
- _____ 27. Existing buildings/structures (by separate permit) and drainage devices that are to be demolished. (Building demolition requires a permit from the Building & Safety Department. Clear and grub of vegetation is a grading activity that requires a grading permit.)

E. ROUGH/MASS GRADING PLAN REQUIREMENTS

- _____ 1. Provide a geotechnical report that conforms to CBC Section J104 (Permit Application and Submittals). Additionally, the report will provide preliminary pavement structural section based on predicted "R" values and, in the case of public streets, traffic indices based on the road classification per City of Fontana Standard Plan No. 1012 as verified by the city.
- _____ 2. Show remedial grading work as identified in the geotechnical report on the plan.
- _____ 3. Provide existing and proposed grade contours for the site and adjoining properties in conformance to CBC Section J104 (Permit Application and Submittals)
- _____ 4. Provide typical sections around the entire perimeter of the disturbed area. Include:
 - a. existing and proposed ground (showing proper direction of existing drainage)
 - b. existing and proposed features (walls, fences, etc.)

- c. horizontal distance from top/bottom of slope to property/right of way line
- d. maximum proposed slope ratio (2:1, etc.)
- e. maximum height of retaining walls and combination walls.
- f. drainage devices such as swales, openings in walls for drainage

_____ 5. Provide typical sections of prominent features within the site. Include items required for perimeter slopes, above.

_____ 6. Provide typical sections for all streets (private and public) adjacent to and within the project boundary.

_____ 7. Location of proposed slopes. Slopes adjacent to the project boundary shall be dimensioned from the property line and shall conform to CBC Section J108 (Setbacks.) Slopes adjacent to public right of way shall setback 2' minimum from the right of way.

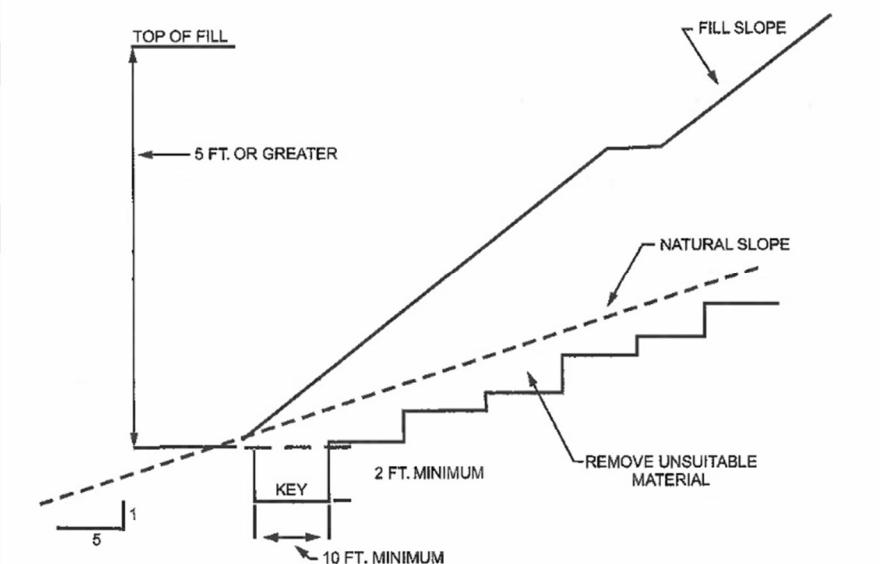
_____ 8. Slope of cut surfaces shall conform to CBC Section J106 (Excavations)

- a. 2:1 max cut slope unless authorized by a geotechnical report justifying steeper slope
- b. Steeper slopes allowed per CBC Section J106, supported by geotechnical study and allowed by building official

_____ 9. Slope of fill surfaces shall conform to CBC Section J107 (Fills) as amended by FMC Section 5-14. When existing ground is steeper than 5:1 and the depth of fill exceeds 5' high:

- a. Benching shall be provided in accordance with Fig. J107.3

FIGURE J107.3—BENCHING DETAILS



b. A keyway shall be provided that is not less than 10' wide and 2' in depth

c. Fill material shall not include organic, frozen, or other delirious materials. Rock or other irreducible material greater than 12 inches shall not be included in fills,

except the building official may permit placement of larger rock when the soils engineer properly devises a method of placement, and continuously inspects its placement and approves the fill stability. The following conditions shall also apply:

- i. Prior to issuance of the permit, potential rock disposal areas shall be delineated on the grading plan
- ii. Rock sizes greater than 12 inches and up to 24 inches in maximum dimension shall be three feet or more below grade, measured vertically. Rock sizes greater than 24 inches in maximum dimension shall be 10 feet or more below grade, measured vertically.
- iii. Rocks shall be placed so as to assure filling of all voids with well-graded soil
- d. Fill material shall be compacted to 90 percent of maximum density as determined by ASTM D1557, Modified Proctor, in lifts not exceeding 12 inches in depth
- e. 2:1 max fill slope unless authorized by a geotechnical report justifying steeper slope

10. Drainage facilities and terracing shall conform to CBC Section J109 (Drainage and Terracing) except where the ground slope is not steeper than 3:1. Provide construction details.

- a. Provide terraces no less than 6 feet wide with suitable access for cleaning where called for per CBC Section J109.2. Concrete paving shall be 3 inches thick minimum, sloped 5 percent minimum, with depth of 12 inches minimum and 5' wide. A single run of terrace drainage shall not collect runoff from a tributary area exceeding 13,500 square feet without discharging to a down drain.
- b. Interceptor drains across the top of cut slopes shall be provided when the tributary area width is greater than 40 feet. See CBC Section J109.3 for specific requirements.
- c. Drainage across property lines shall not exceed that which existed prior to grading. Excess or concentrated drainage shall be contained onsite or directed to an approved drainage facility. Erosion of the ground in the area of discharge shall be prevented by installation of nonerosive down drains or other devices.

11. Identification of all contaminated or unstable soils including disposition thereof
12. Identification of proposed building pad(s) including building or lot identification, and proposed elevation to one tenth of a foot elevation
13. Provide existing ground and proposed elevations for curbs, sidewalks, pavement, building pads, etc.
14. Show significant proposed retaining walls with appropriate elevations (top of footing, top of retaining, etc.). Retaining walls and/or combination walls required to complete the rough grading operations shall be shown on the plan.

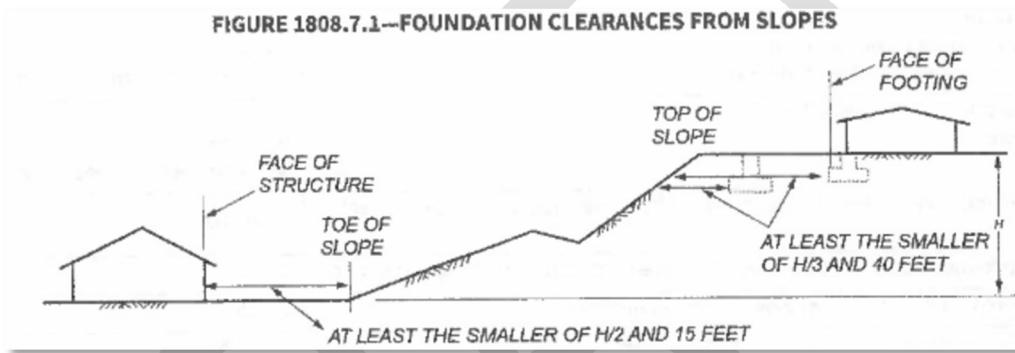
F. PRECISE GRADING PLAN REQUIREMENTS

- ____ 1. Provide a geotechnical report that conforms to CBC Section 1803 (Geotechnical Investigations)
- ____ 2. Construction note(s) and quantities for private parking lots and community driveways including curbs, gutters and paving
- ____ 3. Identification of all public roads and community driveways including appropriate dimensions
- ____ 4. Typical sections of community driveways including proposed pavement structural information
- ____ 5. Show surface and subsurface drainage devices including swales, berms, ditches, pipes, inlets, water quality BMPs, detention facilities (as applicable), etc.
 - a. Manage post construction storm water of residential projects in accordance with the California Green Building Standards Chapter 4 (Residential Mandatory Measures), Division 4.1 (Planning and Design), Section 4.106 (Site Development), subsection 4.106.3 (Grading and Paving), to prevent stormwater from entering buildings.
 - b. Manage post construction storm water of non-residential projects in accordance with the California Green Building Standards Chapter 5 (Non-Residential Mandatory Measures), Division 5.1 (Planning and Design), Section 5.106 (Site Development), subsection to prevent the pollution of stormwater runoff due to construction activities. Use an effective combination of erosion and sediment control and good housekeeping BMPs.
 - c.
- ____ 6. Location of all building outlines, including pedestrian and vehicular access points to the buildings, finished floor and pad elevations
- ____ 7. Provide sufficient finished surface, finished grade, top of curb and flow line elevations to properly show drainage patterns. Indicate locations of ridges, grade breaks and flow lines
- ____ 8. Provide proposed slope on parking spaces and residential driveways
- ____ 9. Excavation and fill near foundations shall conform with CBC Section 1804 (Excavation, Grading and Fill)
 - a. Preferred - Slope ground adjacent to foundations away from the building a minimum of 5-percent for 10 feet. Where constrained by setback dimensions to property lines or adjacent structures, the ground immediately adjacent to building foundations a minimum slope of 5-percent to an approved alternate method of diverting water from the foundation. Approved alternate methods include construction of a concrete drainage swales and underground area drain systems that drain to a gutter, or underground storm drain. Swales located within 10 feet of the building foundation shall be sloped not less than 2-percent.

- b. Allowed – Due to the arid climatic condition of Fontana and that, generally, rocky, and gravelly soils of the area percolate well, the slope of the ground away from the building foundation may be reduced to 2-percent.
- c. Impervious surfaces near building foundations may slope less than 2% where the surface serves as a door landing or ramp landing.
- d. Provide deepened footings to maintain 20% maximum slope adjacent to buildings.

_____ 10. Refer to CBC Section 1804.5 for grading and fill in flood hazard areas.

_____ 11. In general, building foundations shall be setback from tops and toes of slopes (steeper than 3:1) as required by CBC Figure 1808.7.1. As stipulated in CBC Section 1808.7.5, setbacks to slopes may be less if allowed by the building official. A geotechnical report supporting a lesser setback may be requested by the building official. See the code for other scenarios.



_____ 12. Pools shall be setback from slopes a minimum of one-half the setback distance required for building foundation setbacks per CBC Section 1808.7.3.

_____ 13. On graded sites, the top of any exterior foundation shall extend above the elevation of the street gutter at the point of discharge or the inlet of an approved drainage device not less than 12 inches plus 2-percent. Alternate elevations may be permitted upon approval of the building official.

G. STOCKPILE GRADING PLAN REQUIREMENTS

- _____ 1. Provide existing and proposed grade contours for the site and adjoining properties in conformance to CBC Section J104 (Permit Application and Submittals)
- _____ 2. Provide typical sections through the stockpile. Include existing ground (showing proper direction of existing drainage), existing features (walls, fences, etc.), distance from top/bottom of slope to property/right of way line and maximum proposed slope ratio (3:1, etc.)
- _____ 3. Location of proposed slopes. Slopes adjacent to the project boundary shall be dimensioned from the property line and shall conform to CBC Section J108 (Setbacks.) Slopes adjacent to public right of way shall setback 2' minimum from the right of way.

- ____ 4. Slope of cut surfaces that exceed 3:1 slope shall conform to CBC Section J106 (Excavations)
- ____ 5. Slope of fill surfaces that exceed 3:1 slope shall conform to CBC Section J107 (Fills)
- ____ 6. Drainage facilities and terracing shall conform to CBC Section J109 (Drainage and Terracing). Provide construction details for terrace drains, brow ditches, toe ditches, down drains, junction structures, etc.
- ____ 7. Identification of all contaminated or unstable soils including disposition thereof

H. EROSION CONTROL PLAN REQUIREMENTS

- ____ 1. Per CBC Section J106 (Erosion Control) The face of cut and fill slopes shall be prepared and maintained to control erosion. This control shall be permitted to consist of planting.
 - a. Erosion control need not be provided on cut slopes not subject to erosion due to the erosion-resistant character of the materials.
 - b. Erosion control for the slopes shall be installed as soon as practical and prior to calling for final inspection.
- ____ 2. Where necessary, check dams, cribbing, riprap and other devices or methods shall be employed to control erosion and provide safety.

I. PRIVATE DRAINAGE PLAN REQUIREMENTS

- ____ 1. Private storm water drainage systems shall be designed in accordance with Chapter 11 of the California Building Code (to the extent that the CPC addresses basic drainage pipe sizing) or as an engineered storm drainage system. Engineered storm drainage systems shall be designed by registered design professional. The design professional shall provide a hydrology/hydraulic study.
- ____ 2. The study shall reference and demonstrate compliance with the City of Fontana Master Storm Drain Plan (2025 edition), including when appropriate, the Fontana Detention Basin Policy and Design Criteria.
- ____ 3. An area drain system that serves a tributary area that is predominately covered in vegetation shall be assumed clogged and an appropriate outlet shall be provided such that buildings do not flood in a one-hundred-year rainfall event. An appropriate outlet may be a surface device that drains to a hardened drainage device (pavement, concrete ditch/swale) or an underground drainage system that includes a substantial inlet located in the tributary area. The significant inlet shall be made of a durable material, such as steel and concrete and shall be designed to resist clogging.
- ____ 4. Inlets located in sumps shall either have an emergency surface overflow which will be sized to convey a 100-year event rain event to protect buildings from flooding or a redundant inlet and outlet system.

- ____ 5. Onsite private drainage systems shall be designed to convey runoff from a ten-year rainfall event. Flooding of all onsite structures shall not occur in a one-hundred-year rainfall event.
- ____ 6. Drainage inlets located in vehicular traffic areas shall be rated for traffic loads.
- ____ 7. When onsite sump pumps are used, the operation and maintenance of such pump shall be the sole responsibility of the owner. The City of Fontana shall bear no liability for any damages from flooding, whether such damage is on- or off-site, as caused by an improperly operating pump. Provide a note on the plan, accordingly.
- ____ 8. Open water bodies such as detention basins that can exceed 18 inches in depth shall meet CBC Section 202 and FMC Section 30-178, swimming pool barrier fence requirements.
- ____ 9. Stormwater discharged to a public street shall be conveyed via an under sidewalk drain or another approved device.
- ____ 10. Minimum longitudinal slope of drain devices shall be sloped:
 - a. Concrete swale or ditch – 0.5%
 - b. Earthen swale or ditch – 1%
 - c. Provide energy dissipation devices to prevent scouring of soil
 - d. Justify sizing of these facilities in the drainage study
- ____ 11. Pervious pavers/concrete shall not be used for water quality infiltration BMP due to long range functionality concerns.