ROUGH GRADING, SURFACE DRAINAGE and EROSION CONTROL PLANS

Surface Drainage Plans includes all on-site improvements such as grading, planter curbs, sidewalk, pavement, gutters, drainage facilities, fences, gates, handicap ramp, etc.

Rough Grading Plans shows the grade that approximately conforms to the finish elevations.

Erosion Control Plan includes the means of preventing dirt, silt and other loose materials to spill out of the construction area into the streets and into the storm drain system. In case of conflict with the WQMP or SWPPP, the WQMP or SWPPP take precedent.

WQMP A WQMP is required if the there is more than 5,000 square feet of work on the surface.

Submittal Requirements for Plan Checking:

Number of prints – Six (6) sets

Plan check fees - $_____/hr, Initial deposit will be calculated at the time of submittal. The volume and complexity of the plans will determine the amount of the initial deposit.

Additional requirements as needed – One set of each of hydrology study and soils report,

Plan Check Process:

First submittal – All submittal shall be made at 20 Civic Center Plaza, Santa Ana, CA, 92702. Plans will be scheduled for plan checking in the order they are received. Plans must be stamped and signed by a registered Civil Engineer with registration number and date of expiration. Please note that these plans will be checked simultaneously by Public Works Agency and the Planning Department. Three sets are to be submitted. Also submit one copy of the soils report.

Prior to submitting to Public Works, go the Planning Counter to obtain the grading permit number and have it placed on the plans.

Subsequent submittals – Submit six (6) sets of revised prints, all previous redlined prints, and other items required to be submitted per plan check comments. For projects that are complex with multiple categories of plan checking, or for combined grading and street improvement plans, more than six (6) sets are needed. Check at the Public Works Counter.

Approval – Once the plans are returned "approved as noted", submit the required number of sets of prints along with the latest plan check comments. After approval, the Engineer or applicant will be notified.

Processing Time:
The processing time for plan check will depend on the complexity, completeness, and accuracy of the plans. Plan checkers backlog and schedule also affects the processing time.

Guidelines and General Notes: In order to meet City Standards, the following **Guidelines** and **General Notes** shall be used in the preparation of Grading and Erosion Control Plans.

Guidelines in preparing Grading, Surface Drainage, and Erosion Control Plan

1. Plan must be on paper size no less than 24'X 36" and no more than 36'X 48'.
2. Show project's name and address.
3. Owner's name and address.
4. Design Engineer's name, address, telephone number, signature and stamp.
5. Soil Engineer's name, address, and telephone number.
6. Complete and accurate legal description of the subject property.
7. Assessor's parcel number.
8. Vicinity map.
9. Scale, north arrow, and legends.
10. Name of street frontage and nearest street intersection.
11. City's Standard General Notes – attached.
12. Sections and details.
13. Bench mark reference - use Orange County BM's.
14. Existing and proposed elevations and contours.
15. Dimensions and bearings of property lines.
16. Dimensions of right-of-way line and curb in relation to the street centerline.
17. Cut and fill quantities - show haul routes if net import or export of dirt exceeds 100 cubic yards.
18. Show vehicle access in and out of the project area. Access must be paved with temporary AC or gravel a minimum distance of 100' to prevent dirt spillage in public streets coming from truck wheels.
19. Show existing topography within the project site and the immediate surroundings.
20. On-site easements [owner, location, and width]. No building or structure may encroach upon any easements.
21. Shoring details, if any. Any cut of 5' or more will require a CALOSHA permit. Obtain permit and provide copy prior to approval.
22. Show proposed building footprints with pad and finished floor elevations.
23. Temporary construction fence (erosion control).
24. Pedestrian protection, if any.
25. Details on how property drains. Show existing and proposed storm drain system. If there is no proposed storm drain system, drainage must be routed under sidewalk through curb. No drainage in the driveway approach is allowed.
26. Existing and proposed block walls, retaining walls, and building pads. This will need a separate plan check and approval by the Building Dept.
27. Drainage flow arrows and rate of slopes [in %]:
    a. Asphalt, concrete - 0.50% minimum
    b. Soil, grass - 1.00% minimum
    c. Concrete gutter - 0.25% minimum

28. Slopes for permanent fills and cuts shall not be steeper than 1 unit vertical in 2 units horizontal [50% slope]. Deviation from the foregoing limitations for cut slopes shall be permitted only upon presentation of a soil investigation report justifying steeper cut slopes.
29. Trash enclosures.
30. Security gates.
31. Monument sign.
32. Roof drains, truck well drains. Show sump pump details and pump specs.
33. Paving section is to be per soils report. Submit soils report for review and approval. In case of a section with layers smaller than these, the following minimum layers in the pavement sections apply:
    - 3”AC/6”AB - parking aisles
    - 4”AC/8”AB - drives [commercial]
    - 4”AC/12”AB - drives [industrial]
    - 3” A.C. over 4” A.B. - Parking Stalls [multi-family]
    - 3” A.C. over 8” A.B. - Drive aisles [multi-family]
34. Plan must show adequate sight distance at intersection, driveways, and curves.
35. Profiles of any ramps above or below grade level, with dimensions and slope percentages.
36. A run-off study is required for project with one [1] acre or more, or otherwise specified in Public Works Agency’s letter of conditions. Submit for review and approval.
37. If the plan is used from which to construct off-site improvements in the public right-of-way, it must show the existing and proposed improvements on plan. Separate street work permit is required for all off-site improvements.
38. As much as possible, avoid cross-lot drainage. If not avoidable, drainage easements issue must be addressed.
39. Show all on-site utility lines. A separate utility plan is also acceptable.
40. Industrial clarifier, filtration system, if any.
41. For Erosion Control Plan, show sand bagging at the project perimeter and around drainage inlets. Also show locations of temporary stabilized construction entrance.
42. Provide horizontal control, i.e. provide location of the building(s) within the site and all curb line length and location. Include table showing XY coordinates.

General Grading Notes:

1. All grading shall comply with the latest CBC Chapters 18 and 33, and Appendix J and the Santa Ana Municipal Code. A City grading permit is required for grading.

2. Grading shall not be started without first notifying the City Grading Inspector. A pre-grading meeting on the site is required before starting of grading with the following people present: Grading Contractor, Design Civil Engineer, Geotechnical Engineer, Grading Inspector and when required, the Archaeologist and Paleontologist. The required inspections for grading will be explained at this meeting.

3. An approved copy of the grading plans shall be on the permitted site while work is in progress.

4. The Design Civil Engineer shall be available during the grading to verify compliance with the plans, specifications, code and any special conditions of the permit within his purview.

5. The Geotechnical Engineer shall perform periodic inspections and submit a complete report and map upon completion of the rough grading. The compaction report and approval from the Geotechnical Engineer shall indicate the type of field testing performed. Each test shall be identified with the method of obtaining the in-place density, whether sand cone or drive ring, and shall be so noted for each test. Sufficient maximum density determinations shall be performed to verify the accuracy of the maximum density curves by the field technician.

6. Cut and fill slopes shall be no steeper than 2 foot horizontal to 1 foot vertical (2:1) except where specifically approved otherwise.

7. Fills shall be compacted throughout to a minimum of 90% relative density. Aggregate base for asphaltic areas shall be compacted to minimum of 95% relative density. Maximum density shall be determined by uniform building code standard No. 70-1 or approved equivalent, and field density by uniform code standard no. 70-2 or approved equivalent.

8. The Contractor shall not create any trench or excavation 5-feet or more without the necessary permit from the State of California Division of Industrial Safety.

9. All cut slopes shall be investigated both during and after grading by the Geotechnical Engineer to determine if any slope stability problem exists. Should excavation disclose any geological hazards or potential geological hazards, the Geotechnical Engineer shall submit a recommended treatment to the City Engineer for approval.

10. The permittee is responsible for dust control measures. Water active sites at least twice daily.

11. The locating and protection of all existing utilities is the responsibility of the permittee.

12. Grading operations, including maintenance of equipment, within one-half (1/2) mile of a structure of human occupancy shall not be conducted between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or any time on Sunday or a federal holiday. (City of Santa Ana Municipal Code Section 18-314)

13. The permittee shall give reasonable notice to the owner of adjoining lands and buildings prior to beginning excavations, which may affect the lateral and subjacent support of the adjoining

property. The notice shall state the intended depth of excavation and when excavation commences. The adjoining owner shall be allowed at least 30 days and reasonable access on the permitted property to protect his structure, if he so desires, unless otherwise protected by law.

14. All existing drainage courses through the site shall remain open to handle the storm water; however, in any case, the permittee shall be held liable for any damage due to obstructing natural drainage patterns.

15. Approved erosion protection devices shall be provided and maintained during the rainy season and shall be in place at the end of each day's work. Proper erosion control measures must be shown on the plans.

16. Construction sites shall be maintained in such a condition that an anticipated storm does not carry wastes or pollutants off the sites.

    Discharges of material other than storm water are allowed only when necessary for performance and completion of construction practices and where they do not: cause or contribute to a violation of any water quality standard; cause or threaten to cause pollution, contamination, or nuisance; or contain a hazardous substance in a quantity reportable under Federal Regulations 40 CFR 117 and 302.

    Potential pollutants include but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants, glues, limes, pesticides, herbicides, wood preservatives and solvents; asbestos fibers, paint flakes or stucco fragments; fuels, oils, lubricants, and hydraulic radiator or battery fluids; fertilizers, vehicles/equipment wash water and concrete wash water; concrete, detergent or floatable wastes; wastes from any engine/equipment steam cleaning or chemical degreasing; and superchlorinated potable water line flushings.

    During construction, disposal of such materials should occur in a specified and controlled temporary area on-site, physically separated from potential storm water run-off, with ultimate disposal in accordance with local, state, and federal requirements.

17. Dewatering of contaminated groundwater, or discharging contaminated soils via surface erosion is prohibited. Dewatering of non-contaminated groundwater requires a National Pollutant Discharge Elimination System (NPDES) permit from the respective State Regional Water Quality Control Board.

18. All dirt, sand, mud, or debris deposited or spilled upon public streets during any grading, hauling, or export operations shall be immediately cleaned up by the Developer, his Contractor, Subcontractors, or agents to the satisfaction of the City Engineer. Failure to do so will be cause for stopping all such grading, hauling, or export work by the City until such time as the streets are cleaned.

19. All trucks hauling dirt, sand, oil, or other loose materials are to be covered or should maintain a least two feet of freeboard in accordance with the requirements of CVC Section 23114.

20. Contractor is responsible for the repair of all damages to public properties that are caused by the work on-site. Repair must be completed to the satisfaction of the City Engineer.

21. Minimum asphalt pavement sections shall be:
    - 3”AC/6”AB - parking aisles
    - 4”AC/8”AB - drives [commercial]
    - 4”AC/12”AB - drives [industrial]
    - 3” A.C. over 4” A.B. - Parking Stalls [multi-family]
    - 3” A.C. over 8” A.B. - Drive aisles [multi-family]

22. Earthwork Volumes:

Cut	_____	cubic yards
Fill	_____	cubic yards
Net	_____	cubic yards

23. If the net volumes exceed 500 cubic yards, the Contractor must submit a haul truck route to the city for approval. Haul route shall include the location of borrow and/or dispersal site, all streets included in the route, the proposed staging area and the maximum gross weight of the trucks when loaded.

24. Submit an 8 ½” x 11” haul route map of appropriate scale which indicates the location of the project site, showing streets and direction of hauling up to and including the end of the route.

25. Pursuant to Assembly Bill 3019, no excavation permit is valid unless the contractor contacts and obtains an Inquiry I.D. number from “Underground Service Alert” (1-800-422-4133) at least two working days prior to commencing excavation.

26. Separate permits must be obtained from the City Building and Safety Division for the construction of retaining walls, light poles, trash enclosures, on-site plumbing and all building structures.

27. All fonts on plans should be a minimum of 0.1”.

EROSION AND SEDIMENT CONTROL GENERAL NOTES

1. All work shall be in accordance with the erosion control plans, the project's Storm Water Pollution Prevention Plan (SWPPP), and the recommendations of soils report.

2. Erosion control measures shall be in place at the end of each working day whenever the daily rainfall probability exceeds 40%.

3. Equipment and workers for emergency work shall be made available at all times during the rainy season. Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction of temporary erosion control devices at all time.

4. Controls shall be set up and maintained as construction proceeds. Adjustments to the erosion control plans are allowable as required and approved by city.

5. All erosion and sediment control measures shall implement structural and nonstructural Best Management Practices (BMPs) in conformance with the guidelines of the California Storm Water BMP Handbooks.

6. After a rainstorm, all sediment and debris shall be removed from streets, berms and desilting basins. Any graded slope surface protection measures damaged during a rainstorm shall be immediately repaired.

7. The permittee and contractor shall be responsible and shall take necessary precautions to prevent trespass onto areas where impounded water created a hazardous condition.