Appendix B

Best Management Practices for Construction

APPENDIX B
BEST MANAGEMENT PRACTICES FOR CONSTRUCTION
LDS RECTORY USE PERMIT AMENDMENT

Biological Resources

Construction Related Mitigation Measures.

The following are required during project construction in order to minimize impacts to adjacent habitat and wildlife during construction activities.

- Feeding of wildlife by project personnel is prohibited.
- To minimize harassment or killing or wildlife and to prevent the introduction of destructive animal diseases to native wildlife populations, project personnel are not allowed to bring pets into any project area.
- The contractor shall confine all activities to the project boundaries. All limits of construction shall be delineated with orange construction fencing. During and after construction, entrances to access roads shall be gated to prevent the unauthorized uses of these roads by the general public. Signs prohibiting unauthorized use of the access roads shall be posted on these gates.
- Sensitive areas identified by bird surveys or the biological monitor shall be delineated by construction fencing or similar materials prior to any clearing or grading activities.
- During project construction, all seeds and straw materials shall be certified weed free.
- Project personnel shall not deposit or leave any food or waste in the project site, and no biodegradable or non-biodegradable debris shall remain in the project site following completion of construction. All refuse shall be placed in appropriate wildlife-proof containers and removed from job sites daily.
- All steep-walled trenches or excavations used during construction shall be covered at all times except when being actively utilized. If the trenches or excavations cannot be covered, exclusion fencing (i.e., silt fencing) shall be installed around the trench or excavation, or it shall be covered to prevent entrapment of wildlife.
- Open trenches or other excavations that could entrap wildlife shall be inspected carefully before backfilling. Should a dead or injured listed species be found in a trench or excavation or anywhere in the construction zone or along an access road, the appropriate resource agencies shall be contacted within 48 hours of detection. Construction holes left open over night shall be covered.
- The contractor shall institute measures to prevent fire and leakage from vehicles during construction on the project site. Such measures shall include designated no smoking zones and parking areas. Construction equipment shall be restricted to designated areas and roads approved by the project biologist. A water truck shall be maintained at the project site during all construction activities in order to provide an emergency water source in case of fire.
- Fuel modification maintenance shall only occur under the supervision of a qualified biological monitor and access shall minimized to reduce the impact to wildlife within the ESA. The monitor shall flag sensitive and fire resistive plants so that the vegetation removal crew can avoid impacts to these species.

Geology

Grading Guide Specifications-Construction Related Mitigation Measures.

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.
- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner

nor is the Geotechnical Engineer to direct the grading equipment of personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.
- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed on the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.
- Canyon cleanouts, overexcavation areas, processed to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.
- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.
- The Earthwork Contractor is responsible for all clearing, grubbing, stripping, and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.
- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.
- Major vegetation should be stripped and disposed of off-site. This includes, trees, brush, heavy grasses, and any materials considered unsuitable by the Geotechnical Engineer.
- Underground structures such as basements, cesspools, or septic disposal systems, mining shafts, tunnels, wells, and pibpelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county, or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.
- Any topsoil, slopewash, colluviums, alluvium, and rock materials which re considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.
- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc. should be excavated and filled with compacted fill.
- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted.
- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.
- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as "contaminated," and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.
- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.
- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendation and in areas designated suitable by the Geotechnical Engineer. These materials should be placed in accordance with Place D-8 of these Grading Guide Specification and in accordance with the following recommendations:
    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.
    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.
    - Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous left of fill. A minimum 5-foot offset between rows is recommended.
    - To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities, or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.
- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.
- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.
- Density and moisture content testing should e performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.
- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.
- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to vertical) or steeper should be benched into bedrock or other suitable materials as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5 of the geotechnical report in Appendix E.
- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1 in the geotechnical report, Appendix E). as determined by the Geotechnical Engineer.
- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.
- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.
- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed

adjacent to below grade walls must be properly tested and approved by the Geotechncial Engineer with consideration of the lateral earth pressure used in the design.

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.
- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.
- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.
- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core.
- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.
- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.
- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5 in Appendix E).
- All fill keys should be cleared of the loose slough material prior to geotechnical inspection should be approved by the Geotechnical Engineer and governmental agencies prior to filling.
- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2 in Appendix E).
- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.
- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.
- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical fill detail is shown on Plate D-5 in Appendix E.
- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6 in Appendix E.
- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3 of Appendix E. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.
- Filter material for subdrains should conform to CALTRANS specification 68.1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations for longer runs. Four-inch pipe may be used in buttress and stabilization fills.

Fill Placement-Construction Related Mitigation Measures.

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditions to two to four percent above optimum moisture content, and compacted.
- On-site soils may be used for fill, provided that they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the recent IBC/CBC and the grading code requirements of the City of Newport Beach.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet job specifications.

Hydrology and Water Quality

Construction Related Mitigation Measures

- Disposal or temporary placement of excess fill, brush, or other debris shall not be allowed in waters of the United States or their banks.
- All equipment maintenance, staging, and dispensing of fuel oil, coolant, or any other such activities shall occur in designated areas outside of waters of the United States within the fenced project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering waters of the United States, and shall be shown on the construction plans.
- Fueling of equipment shall take place within existing paved areas or designated fueling areas away from waters of the United States. Contactor equipment shall be checked for leaks prior to operation and repaired as necessary. “No-fueling zones” shall be designated on construction plans and/or within the stormwater pollution prevention plan.
- Silt fencing, straw mulch, and straw bale check dams shall be installed as appropriate to contain sediment within construction work areas and staging areas. Where soils and slopes exhibit high erosion potential, erosion control blankets, matting, and other fabrics and/or erosion control measures shall be implemented.

Noise

Standard Condition

- Hours of noise-generating construction shall be limited to from 7 a.m. to 6:30 p.m. on weekdays and from 8:00 a.m. to 6:00 p.m. on Saturdays. No construction shall be permitted on Sundays or holidays. Adequate noise control measures at all construction sites shall be ensured through the provision of mufflers and the physical separation of machinery maintenance areas from adjacent uses.

Transportation and Traffic

Standard Conditions

- The Traffic Engineer will require during the plan check review phase that the applicant install a residential driveway approach per City Standard at the intersection of the proposed driveway and the internal roadway.
- Plantings at the intersection of the driveway and internal roadway shall be low growing, 24 inch maximum, to ensure adequate sight distance for vehicles existing the driveway area.