# DIVISION 31
# EARTH WORK

| SECTION # | SECTION NAME | COMMENTS/CHANGES | DATE |
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## 312000 - EARTHWORK

### PART 1 – GENERAL

A. Summary - Section includes:

1. Grading
2. Excavation/fill
3. Erosion and sediment control
4. Topsoil

B. Referenced Standards/Minimum Criteria:

1. Compaction standards per Geotechnical Report (standard proctor density, ASTM D698 or modified proctor density, ASTM C1557.)
2. Materials and operations under this Section shall be per the recommendations of a Geotechnical Engineer employed by the Owner who will place qualified personnel on the site during earthwork operations.

C. Submittals Required:

1. Soil samples per Geotechnical Engineer.
2. Reports of soil testing during construction to be distributed by the testing laboratory to the Owner, Architect, and Contractor.

D. Restrictions/Critical Criteria:

1. Balance, cut and fill to the extent possible without compromising maximum and minimum scope criteria. 4:1 maximum slope typical, 3:1 maximum slope only as approved by Owner.
2. It shall be the responsibility of the Contractor to take measures and furnish equipment and labor necessary to control the flow, drainage and accumulation of water as required to permit completion of the work under this Section to avoid damage to the work.
3. Contractor shall export and dispose of debris, organic matter and soil that does not meet the criteria of the Geotechnical Engineer.
4. Provide erosion and sediment control plan and supporting drainage data as required by the local jurisdiction.
5. Where sufficient existing topsoil exists on site, replace at a minimum depth of 4" in all areas to be landscaped after rough grading is completed.
6. Rock Excavation: Material capable of removal using the equivalent of D-10 caterpillar tractor with a hydraulic single tooth ripper is considered as normal excavation and no extra will be allowed
7. Rough grade shall be subject to verification by Owner-provided survey firm.

### PART 2 – PRODUCTS

A. Materials are unrestricted provided they meet specification requirements of the geotechnical engineer.

## 316326 – DRILLED CONCRETE PIERS

### PART 1 – GENERAL

A. Summary - Section includes:

1. Drilling, casing (if necessary) and dewatering (if necessary) of drilled pier holes.

B. Referenced Standards/Minimum Criteria:

1. Concrete per ACI 336.1. Slump tests per ASTM C143.

C. Submittals Required:

1. Quality Control Submittals: Geotechnical Engineer Daily Reports (Drilling Log), daily reports filed by the Geotechnical Engineer during drilling shall contain as a minimum the following information:

   a. Identification mark.
   b. Shaft diameter.
   c. Design bottom elevation.
   d. Actual bottom elevation.
   e. Top elevation.
   f. Overrun or under-run.
   g. Bearing strata description and condition of bearing strata.
   h. Length and location of casing used.
   i. Nature and location of obstructions.
   j. Water conditions during drilling and at time of concrete placement.
   k. Unusual occurrences during drilling, reinforcement, concrete placement or casing removal.

D. Restrictions/Critical Criteria:

1. Unit Prices: Bid proposals for piers shown on the drawings shall be on the basis of elevations given. If actual site conditions differ from those indicated by the soils investigation, the unit cost overrun and under-run figures indicated on the bid form will be applied to establish any extra due the Contractor or credit due the Owner due to changes in depths of piers. Unit prices for pier overruns shall not exceed under-runs by more than 20%.
2. Casings shall be available in sufficient length to case the entire depth of each pier hole if necessary. The use of mud slurry to lubricate casing or seal off water will be allowable only with the prior approval of the Geotechnical Engineer.
3. Reinforcing steel shall be full length of pier without splices. In reinforced piers, completed installation of concrete reinforcement must be approved by the Geotechnical Engineer before placement of concrete.
4. Allowable Tolerances: Accurately locate piers as shown on the plans. No pier shall deviate from its true location by more that 1-1/2" at the top nor shall it be out of plumb by more than 1-1/2% of its length.

PART 2 – PRODUCTS

A. Materials are unrestricted provided they meet specification requirements.