Calaveras County Water District
San Andreas Headquarters
Maintenance and Warehouse Project

ADDENDUM No. 2

Date Issued: April 7, 2020

***** Receipt of addenda must be acknowledged by Bidders on the BID FORM, Section 00410, Page 410-1; failure to acknowledge receipt may cause rejection of bid. *****

Reminder: Separate sealed Bids for the construction of the New Maintenance and Warehouse Building Project will be received **until 4:00 PM local time on Friday, April 17, 2020**. Sealed bids will be opened by the Engineer after the bid closing, an abstract of the bid amounts and alternates will be tabulated by the Engineer and posted on website.

PART A. BID PACKAGE / SPECIFICATIONS

1. Add, "Appendix A – Geotechnical Report, November 2010"

2. Section 00500 – Agreement, Article 1, Paragraph 2, Add "*In order to ensure competitiveness when comparing overall bids to individual schedules the lowest overall bidders' individual schedules will not be used to disqualify their price for the overall bid. If the overall lowest bidder has an individual schedule that is lowest in value on an individual schedule the next lowest bidders price on that schedule will be used to compare the lowest overall bid to the lowest combination of schedules.*"

3. Section 00410 – Bid Form, Page 00410-17, Add Bid Item Description for Plumbing and Interior Doors and Windows. Additionally, re-numbered the Bid Item Descriptions to match Bid Item Schedule C. See attached revised page 00410-17.

4. Section 15700 – HVAC, Page 15700-2, Section 2 Products, Paragraph 2.1, Add the following Subparagraph B, "*The estimated heating load is 40 BTU's per sq. ft. or 48 MBTUH. Heat pump alone (without supplemental electric heating elements) shall be sized for 36 MBTUH heating at 50-deg F outdoor temperature with heat load normally supplied via the heat pump under most winter conditions with minimal supplemental electric or hybrid gas heating. Heat pump shall have 2-stage scroll compressor for 2-state heating and 2-stage cooling, Carrier Performance 16 Heat Pump, 17 SEER Rating, Model 25HCB636 with FV4CNB006 two-speed air handler with factory installed accessory 15 KW intelligent staging capable heating elements. The cooling requirement is approximately 2.5 tons. In low and high stage cooling the system shall be capable of operating from 2.0 to 3.0 tons, respectively. Thermostat shall be by the same manufacturer as the HVAC unit, Wi-Fi enabled Carrier "Cor 7C Wi-Fi" with intelligent system staging or equal.*

5. Project Manual – Volume 2: Contract Drawings, Drawing Number E-2: Lighting Floor Plan. Replace existing drawing E-2 with attached Revised Drawing Number E-2.

PART B. PRE-BID MEETING QUESTIONS

1. Is a Notice of Intent (NOI) required for storm water SWPPP controls based on the Site Acreage?

   Reply: The Schedule A Contractor will be responsible for generating a Storm Water Pollution Prevention Plan (SWPPP) for the project. The SWPPP plan should be submitted to CCWD to confirm it is in general conformance with the project. Once review is completed by CCWD the SWPPP will be uploaded to SMARTs system by the Contractors Qualified Storm Water Developer (QSD). The Contractors QSD will assist CCWD with online Certification of the SWPPP. CCWD will pay fees to the Permitting Agency.

2. Is there a Soils Report?

   Reply: Condor Earth Technologies performed a Geotechnical Report in November 2010 for the New Operations Headquarters which included both the Main Office and Warehouse Building. The Main Office portion of the project has already been completed. Since the geotechnical report was originally completed the footprint of the Warehouse has been modified to include a combined Maintenance and Warehouse Building. The November 2010 Geotechnical Report has been included in Appendix A of this Addendum.

3. Has CCWD submitted an application to PG&E for Power Service?

   Reply: CCWD has not submitted an application to PG&E for Power Service. Schedule A Contractor is to submit service request application to PG&E within 14 Calendar Days of Notice to Proceed. The Service Connection shall be for 400 Amps, Single Phase 120/240 service that terminates within the building. The entire conduit system from PG&E service location to the Building shall be installed by Schedule A Contractor, the conduit shall be installed per PG&E Greenbook. PG&E is to provide Conductors from service location to indoor termination enclosure.

4. Does Schedule C include Electrical work? What electrical work is included in the different Schedules A, B, C?

   Reply: Schedule C includes all the Electrical Work for the project except for the following work which is included in Schedule A: Installation of buried conduit to building for PG&E service location, conduit to vehicle gates, conduit to septic pump tank, and communication conduit from building to radio tower.

5. What about site work to radio tower and building conduits? Which Schedules?

   Reply: Communication Conduits between Buildings and Radio towers will be in Schedule A. See Bid Form Item 21A - 2" Communication Conduits.

6. Is there an Engineer's estimate for each of the Bid Schedules?

Reply: No, there is only an Engineers Estimate for entire project, which is $700,000.

7. Will all documents be posted via the Public Purchase portal/website?

   Reply: CCWD will post documents to Public Purchase and ccwd.org website.

8. Is it possible to drop off bids in person?

   Reply: Yes, the bids can be dropped off at mail drop box at 120 Toma Court, San Andreas, CA 95249. Please email kevinw@ccwd and charlesp@ccwd when they are dropped off so we make sure we have picked them up.

9. There is a small error on finish schedule. Paint schedule, code off by a digit or something wrong?

   Reply: Yes, there is typos. Where finish schedule shows PEG it should be replaced with PES (One Coat of Sealer/Primer two coats of Eggshell Latex Enamel).

10. How will coordination occur between grading and foundation contractors on compaction testing?

    Reply: The grading contractor will complete the finish grading and compaction of all underlying layers including Class 2 A.B. Compaction Testing will be done during Schedule A contractor's work.

11. Who places subgrade, rock and vapor barrier?

    Reply: The Schedule A Contractor will place subgrade and Class 2 A.B. Schedule B Contractor will be responsible for vapor barrier and excavation of metal building column footings.

12. Who is responsible for problems with foundation subgrade and rock?

    Reply: The Schedule A Contractor will be responsible for compaction and fine grading of the Class 2 AB underneath the concrete building slab; the aggregate base grade is not to vary more than 0.05-Ft from grade established by the Engineer. Hand grading or small machine grading maybe required by Schedule B Contractor to ensure concrete slab thicknesses is no more than ¼" minus the thickness shown on the drawings.

13. Will CCWD be performing construction inspections, be main point of Contact?

    Reply: CCWD will be the main point of Contact for this Project, all submittals and shop drawings are to be reviewed by CCWD prior to submitting to Calaveras County Building Department. The Contractor is responsible for quality control on this project, CCWD will be performing periodic inspections and coordinating testing with the Contactor. The Contractor will be responsible for contacting Calaveras County Building Department for all required Building Inspections. The Contractor will be responsible for contacting

Calaveras County Public Works for all inspections required by their Grading Permit. The Contractor shall notify CCWD with the date and time of permitting agencies inspections and provide CCWD copies of all correction notices issued by permitting agencies.

14. Will normally have bi-weekly construction meetings?

Reply: Yes, the Project will have Bi-Weekly Construction Meetings held at the CCWD office in San Andreas. The Contractors Project Superintendent or Project Manager responsible for the project will be required to attend.

15. Will CCWD have a lab collect cylinders for concrete testing?

Reply: Yes, CCWD will have laboratory perform concrete strength testing on cylinders. The contractor will assist the laboratory in collection of concrete for sampling. CCWD may request the contractor to provide their own testing of concrete cylinders, the cost for this testing would be reimbursed to the Contractor.

PART C. REQUESTS FOR INFORMATION

Question #1: I didn’t see any Fire Alarm on the plans, is there not going to be any fire coverage inside the building?

Reply: Yes, a fire alarm system is required for the project, the system shall be installed as required by the fire code, San Andreas Fire Department and the Building Department. The fire alarm system shall include a control panel, smoke/heat detectors, pull stations, horns, strobes and other required accessories. A Contractor experienced in the installation of Fire Alarm systems shall design the system. Fire Sprinklers are not required. The Fire Alarm System shall be Honeywell Fire-Lite or Equal. Fire alarm system is included in Bid Item 9C Electrical.

Question #2: Sheet SP-1 indicates locations of chain link fences with iron gates but there is no detail or spec for fence or gates. Same sheet also indicates a 30' mech. gate but sheet C-4 indicates electrical for the same gate. Is this gate automated?
Please provide clarity for what is needed for fence and gates scope of work.

Reply: The Ornamental Man Gates and Vehicle Gates should comply with Specification Section 02445 – Gates, Part 2 Materials. The Vehicle Gates should be wrought iron colored, 6-FT tall by 30-FT wide opening, motorized, decorative spear top and have double track guides. The vehicle gate should be operated with Key Fob, Remote Control and Sensor for exiting vehicles. In the event of power outage, the vehicle gate should be operable by mechanical hand crank. The Ornamental Man gates shall be single swing wrought iron colored, 6-FT tall with flat top, panic hardware, self-closer and have Key Fob access controls.

Question #3: I will be submitting a bid to GC for the electrical work. I am wanting to do slab on grade electrical conduit for electrical conduits throughout the maintenance building. Is CCWD ok with that?

In the electrical specs under "raceways" A. My interpretation is that we can used rigid 90 degree elbows wrapped in rubber tape. Is this a acceptable method. It says 3M or Pabco wrap. Im not sure if Pabco is spelled incorrectly?

> *Reply: Slab on electrical conduits are not acceptable. All conduits shall be concealed in building structure, in walls or ceilings, underground below floor slab or shall exposed in mechanical and electrical room. Conduits to individual fixtures where walls are metal building maybe exposed rigid conduit, the raceways shall be below the floor slab.*

Question #4: Are there going to be details on the electrical service as far as voltage, phase and amperage or is this a design build?

> *Reply: The drawings show approximate locations of equipment, outlets, switches, lighting, etc. The Contractor is responsible for designing complete fully functioning electrical system. The Electrical Service to the building and to Main Electrical Panel shall be 400 Amp, Single Phase 120/240. Switch gear shall be manufactured by Square D to match switchgear at out main office.*

2. The plans do not show a lighting control system, but the specs say to "furnish, install and test a complete lighting system". Is there to be a lighting control system other than what is shown on the plans?

> *Reply: The approximate locations of all lighting fixtures and switches are shown on the Lighting Floor Plan. Lighting control system shall be designed by the Contractor and submitted to the District for approval. All work reasonably inferred as required to provide a fully functioning lighting system shall be included in Bid Item 8C for Lighting.*

3. A sanitary system is mentioned in the specs, but no electrical information is given. Please provide information on the sanitary system.

> *Reply: The sanitary system includes sewer pump tank. The schedule A Contractor will be responsible for installation of Orenco Pumps, DSI DAX-1 Duplex Control Panel, and installation of electrical conduit and conductors from Building to the Sewer Pump Tank. The Schedule C Contractor will be responsible of making electrical connections to the Sanitary Sewer System inside the building.*

4. The plans do not show a lighting fixture schedule. Will a lighting fixture schedule be provided in an addendum?

> *Reply: Yes, see lighting fixture schedule below:*

LIGHTING SCHEDULE				
LIGHTING FIXTURE	**QUANTITY**	**GE CURRENT #**	**SYLVANIA #**	**NOTES**
LINEAR LED LIGHT FIXTURE -SURFACE MOUNTED	6	ALC6-1-8T-08-T-S-Q	74775	8-FT LONG STRIP LIGHTS W/ COVER
HIGH BAY LED LIGHT FIXTURES - 14" ROUND SUSPENDED	14	LPS-0-22-10-8-40-V-R1-WHITE	74232	ACRYLIC REFRACTOR DROP LENS
WALL BRACKET LIGHT FIXTURE - EXTERIOR	12	EWN-B-1-A2-7-40-1-N-GRAY	60110	DUSK TO DAWN OPERATION, BUILDING MOUNTING BRACKET
LED CAN LIGHT - RECESSED 6" ROUND	14	LRX-R6-10-8-40-PH	72530	WITH NEW CONSTRUCTION FRAME KIT
TWO HEAD WALL MOUNT EMERGENCY LIGHT WITH BATTERIES	10	-	60763/60759	PROVIDE INTEGRATED EXIT SIGN AT EXIT LOCATIONS

5. When is the anticipated construction start date for the project in the subject line?

Reply: Section 00900 provides the Project Schedule and Milestones from Notice to Proceed. Typically, the Notice to Proceed is issued between 30 to 60 calendar days from the bid date. This timeframe depends on when bid is approved by CCWD Board of Directors and how quickly contract and insurance documents are received back from the Contractor.

END

Appendix A Geotechnical Report

Appendix A

GEOTECHNICAL INVESTIGATION
NEW OPERATIONS HEADQUARTERS
CALAVERAS COUNTY WATER DISTRICT
NORTHEAST CORNER OF
GEORGE REED DRIVE AND TOMAS COURT
SAN ANDREAS, CALIFORNIA

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November 24, 2010
Condor Project No. 5132M

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GEOTECHNICAL INVESTIGATION
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CALAVERAS COUNTY WATER DISTRICT
NORTHEAST CORNER OF
GEORGE REED DRIVE AND TOMAS COURT
SAN ANDREAS, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of the geotechnical investigation performed by Condor Earth Technologies, Inc. (Condor) for the proposed operations building for the Calaveras County Water District (CCWD). The approximate location of the proposed building is shown on Figure 1, Vicinity Map.

The purpose of this report is to present the results of Condor's investigation and geotechnical recommendations for earthwork and foundations for use by your other design professionals and contractors.

2.0 PROJECT DESCRIPTION

The proposed and existing improvements are shown on Figure 2, Site Plan. The project will consist of constructing an operations building, one storage building, a parking lot, driveways, exterior pedestrian pavement, and underground utilities. The buildings will be light metal-framed structures with concrete slab-on-grade lower floors situated slightly above the adjacent exterior ground surface. The operations building will have two stories, and the storage building will have one story.

The finish lower floor elevations will be about 989 feet for the operations building and 987 feet for the storage building. Building pad grading will include cuts of up to about 2 feet and fills of up to about 1 foot. The maximum dead plus live building loads will be column loads of 50 kips.

Condor based this project description on our review of preliminary plans and our discussions with the project team. If the plans change or the geotechnical aspects of our project description are significantly different from those described, then Condor should re-evaluate our recommendations.

3.0 SCOPE OF SERVICES

Condor's scope included the following:

- Researching the site geology;
- Observing and evaluating pertinent site conditions;
- Performing a subsurface investigation which included supervising the excavation and logging of test pits and performing laboratory tests on selected soil samples;
- Performing engineering evaluation;
- Developing geotechnical conclusions and recommendations for design and construction of the proposed improvements described in Section 2.0.

4.0 SITE CONDITIONS

Figure 2 shows the existing site features and topography. The ground surface is covered with high and thick weeds and slopes down gradually to the southwest. There is a southwesterly flowing drainage swale that crosses the site. The swale is about 15 feet wide (at its top) and up to about 5 feet deep, and flows to a small pond at the southwest corner of the site. The existing roads that border the site are paved. There are seven trees and five utility vaults at the site, which are all beyond the proposed buildings and parking lot.

Gold mining was previously performed in the vicinity of the site; however, no such features are shown at the location of the proposed building. It is possible that underground workings from nearby mines extend beneath the building. These workings may include but are not limited to service shafts present at the ground surface that extend to the underground workings. The locations of these ancillary features are not typically included in the published data.

5.0 SITE GEOLOGY

Figure 3 shows the site location on a geologic map. The site is mapped as having undifferentiated metamorphic rock (pre-Cretaceous), which typically consists of amphibolite, schist, greenstone, quartz, feldspar porphyry, marble and phyllite. The rock encountered in our test pits consists of marble and highly weathered phyllite. The subsurface conditions encountered in our test pits are described in Section 7.0.

Geologic evidence indicates that the Sierra Nevada Range is a westward-tilted bedrock block with late-Quaternary (active) faulting and uplift occurring along its eastern edge on the Frontal Fault System and comparatively little faulting, deformation, or local tilting occurring within the block itself (Wakabayashi and Sawyer, 2000). The cumulative vertical offset and slip rates of individual faults within the Sierra Nevada block are estimated to be 1 to 3 orders of magnitude lower than those of the Frontal Fault System to the east (Wakabayashi and Sawyer, 2000).

The site is mapped within the Foothills Fault System zone. The Foothills Fault System includes the Melones Fault zone and the Bear Mountains Fault zone. Portions of the Foothills Fault System between Oroville and Folsom (north of the project site) were called active (Cramer and others, 1978). They cite rare historical accounts of ground shaking and micro-seismic activity, attributed by others to filling of reservoirs. More recently, the Foothills Fault System was not classified as an "active" fault by the California Geological Survey. In the statewide seismic hazard assessment (1996), the Foothills Fault System is modeled as a distributed earthquake source, that is, a broad region where earthquakes may not be associated with a particular fault trace. To quantify its contribution to seismic hazard potential, seismologists have assigned the Foothill Fault Zone a slip rate of 0.05 mm/yr and a maximum earthquake magnitude of M6.5 (Petersen and others, 1996). While these parameters are well below the minimum level of seismic activity generally considered for the state seismic hazard assessment, the Foothills Fault System is included as a "Type C" seismic source due to its significance to major public policy and engineering decisions for projects in the Sierran foothills. The potential for surface rupture along this zone is low.

6.0 SUBSURFACE INVESTIGATION METHODS

Condor investigated subsurface conditions at the site in November 2010 by logging conditions exposed in six exploratory test pit (TP) excavations. Figure 2 shows the approximate locations of these test pits, and Appendix A contains the test pit logs. CCWD personnel excavated the test pits to depths between about 2.5 to 11 feet using their backhoe. Condor selected the locations of the test pits and the excavation depths, and retrieved samples of soil and rock exposed. Relatively undisturbed samples were obtained by handhammering relatively thin-walled brass tubes (approximately 2 and 2.5-inch-diameter) into the test pit sidewalls. One bulk sample of near-surface soil was also retrieved. A Condor Geotechnical Engineer logged the conditions encountered along with other pertinent data. We classified soil using the Unified Soil Classification System and the visual-manual procedure, and characterized the engineering properties of the rock using the rock property terms presented in Appendix A.

Condor delivered the samples to our laboratory and subcontracted laboratory for further examination and testing. Selected samples were tested for liquid and plastic limits, moisture content, dry density and R-value. Appendix B contains laboratory test reports.

The logs in Appendix A summarize the pertinent field data and laboratory test results. Condor based the reported soil and rock classifications and descriptions on field data, further observation of the samples in the laboratory, and the laboratory test results. Contacts shown on the logs are approximate, and subsurface conditions may vary gradually at the contacts shown.

7.0 SUBSURFACE CONDITIONS

The subsurface data obtained during our investigation indicates that the site is underlain by about 1.5 to over 8 feet of soil over rock. The soil encountered is lean clay with sand, which is generally medium stiff to stiff to a depth of about 1.5 feet and then very stiff to hard below this depth. The rock encountered in TP-1, TP-2, TP-4, and TP-6 consists of phyllite, which is moderately weathered, closely fractured with tight and slightly rough fracture surfaces, moderately strong, and moderately hard. Marble was encountered in TP-3, which is slightly weathered, occasionally fractured with tight and slightly rough fracture surfaces, strong, and hard.

Groundwater was not encountered in the test pits to the depths explored, at the time of our exploration. However, during and after periods of prolonged rainfall, temporary perched ground water can occur within the upper 5 feet of the surface.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Condor anticipates that the soil subgrade beneath the building will consist of up to about 1 foot of new engineered fill over a variable thickness of natural soil underlain by rock. At the north side of the proposed operations building, the natural soil will mostly be removed, and relatively hard rock should be exposed within about 1 foot of the soil subgrade. We anticipate that hard rock will be encountered in excavations for footings. Hard rock may also be encountered in excavations for underground utilities.

The primary geotechnical issues to address include evaluating the potential for geologic hazards as well as the difficulty of excavating hard rock for foundations, and underground utilities. The geologic hazards that require evaluation include the potentials for ground surface rupture from earthquake faulting and the presence of near-surface mine features that could collapse beneath foundations.

Because the rock beneath the site may be relatively difficult to excavate using a backhoe, we recommend overexcavating rock, where it exists within depths of proposed excavations normally made using a backhoe (such as those for footings and underground utilities) and using larger grading equipment (such as a dozer with rippers and/or hoe rams) or blasting. The overexcavations should then be backfilled with compacted engineered fill. This way, excavations made to construct underground improvements using a backhoe will extend through engineered fill, which is easier to excavate using a backhoe. Condor believes that this overexcavation may be appropriate for the footings at the north side of the proposed operations building where hard and shallow rock is anticipated, and possibly for underground utility trenches (depending on the locations and depths of underground utilities).

Based on the data and our evaluations, Condor concludes that the improvements described in Section 2.0 may be constructed as proposed when the general intent of the recommendations that follow are implemented for design and during construction. Conventional spread footings designed and constructed according to our recommendations may be used to support the proposed buildings.

8.1 SEISMIC AND GEOLOGIC HAZARDS

The subsurface data indicate that there is no saturated, relatively loose, cohesionless soil beneath the proposed improvement sites. Therefore, Condor considers the potential for liquefaction to be nonexistent.

The site is not located within an Alquist-Priolo Earthquake Fault Zone (Hart and Bryant, 1997). The Alquist-Priolo Earthquake Fault Zone boundaries are typically within about ⅛-mile (660 feet) of a mapped active fault trace. The subject project site is within 660 feet of two inferred (dashed) pre-Quaternary faults traces (one mapped approximately 425 feet southwest, and one mapped approximately 280 feet northeast of the project site), which appear on published geologic mapping by the California Division of Mines and Geology (2002), as approximately shown on our Figure 3. Geologic contacts are not offset by the fault traces, indicating no historical fault movement was detected. The Quaternary Period began approximately 2.5 million years ago, so these features are not considered active. There are no local ordinances requiring special studies related to buildings proximal to these ancient inferred geological features. The threat of fault rupture is low.

Mines in rock can collapse after they are abandoned from progressive deterioration of the support system and weathering of exposed rock. Collapse of mines can occur rapidly as an isolated cave-in after periods of heavy rain. The magnitude of surface subsidence resulting from collapse would depend on the depth and size of the collapse. Mines collapsing beneath foundations could cause significant foundation settlement, structural damage, and unsafe conditions.

Although there are no known mines beneath or adjacent to the proposed building location, underground mining did occur in the vicinity that could have extended to beneath the site and potentially collapse, and cause building damage and hazardous conditions. Available sources show nearby mines to be oriented away from the site (Clark and Lydon, 1962). For this reason, we do not recommend any additional subsurface investigation work be performed at the site. If anomalies suggesting the potential for openings such as ground settlement and closed drainage patterns are discovered, then additional subsurface investigation work may be warranted, and our recommendations should be re-evaluated.

8.2 SEISMIC DESIGN

Condor recommends using the following values for seismic design according to the 2007 CBC:

• Site Class	B
• Spectral Response Acceleration, S_s, (0.2 second Period)	0.369
• Spectral Response Acceleration, S_1, (1.0 second Period)	0.184
• Site Coefficient, F_a	1.0
• Site Coefficient, F_v	1.0

In accordance with the 2007 CBC, C_s may be calculated using a value of S_s equal to 1.5 for regular structures with five or less stories and periods (T) of 0.5 seconds or less (American Society of Civil

Engineers 7-05, Minimum Design Loads for Buildings and Other Structures Section 12.8.1.3 – as referenced in the CBC).

8.3 EARTHWORK

8.3.1 Site Preparation

The existing ground surface should be prepared as described in this section in all areas to receive fill, and improvements. Site preparation includes demolition/removal of existing surface and subsurface improvements (such as the existing pavement), and removal of debris, organics, organic topsoil, and any other unsuitable material. Site preparation operations should extend at least 5 feet beyond the limits of new fill or improvements (where possible). We anticipate that stripping to a depth of about 2 to 4 inches will be required to remove the organics and topsoil. Deeper stripping may be locally required to remove concentrations of vegetation, such as brush and tree roots. No debris, thick layers of organic topsoil, or other unsuitable material was encountered in our test pits. The cleared vegetation and debris should be removed from the site, but the strippings can be stockpiled for reuse in landscape areas.

Any vegetation and organic topsoil with more than 2 percent organic material by dry weight should be removed. Debris, foundations, pavements, utilities to be abandoned, and other underground facilities should also be removed. The exposed ends of pipes that have been removed should be capped. The Geotechnical Engineer should observe and approve the prepared site prior to any excavation, subgrade preparation, and placement of fill or improvements.

8.3.2 Excavations

The contractor shall be responsible for the stability of all temporary excavations and should comply with applicable CalOSHA regulations (California Construction Safety Orders). All open cuts should be regularly monitored for evidence of incipient stability failures.

As discussed in Section 8.0, overexcavation of rock using larger grading equipment or blasting may be appropriate. The contractor should review the grading, underground utility, and foundation plans, any other plans for excavations, and subsurface data and evaluate the excavation equipment and procedures that will be required and appropriate. Condor suggests that the contractor should be prepared to use a hydraulic hammer and possibly blasting. It is likely that excavated materials will include rocks that require processing or crushing in order to use as fill.

8.3.3 Subgrade Preparation

Soil loosened during site preparation and excavation, or any other soft or loose soil remaining after excavation and beneath proposed fills should be removed and replaced with properly compacted engineered fill. Subgrades should be approved by the Geotechnical Engineer prior to compacting and covering them.

After approval by the Geotechnical Engineer, subgrades or excavated surfaces beneath fill or improvements, and that consist of soil as opposed to rock, should be scarified to a depth of 8 inches (where possible), uniformly moisture conditioned to facilitate compaction, as necessary, and compacted to at least 90 percent relative compaction (ASTM Test Method D-1557). Soil subgrades beneath vehicular pavement areas should be moisture conditioned to slightly over optimum and compacted to at least 95 percent relative compaction (ASTM Test Method D-1557).

Subgrades should be kept moist and free of disturbance until they are covered. Scarification, moisture conditioning, and recompaction of subgrades that become dry and/or disturbed should be performed. The Geotechnical Engineer should approve all subgrades before they are covered by fill or improvements.

8.3.4 Engineered Fill

Engineered fill should have less than 2 percent by dry weight of vegetation and deleterious material and should meet the gradation requirements presented in the following table:

Sieve Designation	Minimum Percent Passing by Dry Weight
4-inch square	100
0.75-inch square	70
US No. 4	60

Fine-grained soil with a liquid limit greater than 40 and a plasticity index greater than 15 should not be used as engineered fill. Imported fill placed within 1 foot of pavement soil subgrades should have an R-value of at least 15. Our observations indicate that the soils excavated from this site should meet the plasticity requirements for fill. However, crushing and/or removal of bedrock particles greater than 4 inches in size could be required. Fill within one foot of pavement soil subgrades should have an R-Value of at least 15. The Geotechnical Engineer should approve all fill for use prior to placement.

Fill placed in swales and drainage channels should be benched into firm soil along the bottom and sides to provide a firm level surface on which to place new compacted fill.

Engineered fill meeting the requirements given in the preceding paragraphs should be uniformly moisture conditioned to over optimum and compacted to at least 90 percent compaction (ASTM Test Method D-1557). Trench backfill may be compacted to at least 85 percent relative compaction (ASTM Test Method D-1557), if the trenches are more than 5 feet beyond the edges of structures, pavements, slabs-on-grade, or other improvements. Engineered fill should be placed in horizontal lifts that are less than 8 inches in uncompacted thickness, and each lift should be compacted to the above requirements prior to placing subsequent lifts.

8.3.5 Utility Trenches

Utility trenches excavated parallel to shallow foundations and edges of pavement should be set back so the trench bottoms lie outside a 1.5 horizontal to 1 vertical plane extending down from the footing bottom or pavement edge.

Below-grade utilities should be bedded and backfilled according to the requirements of the service provider (utility company) and the County and/or City. Where no specific requirements are imposed, we recommend placing free-draining bedding sand from 6 inches below to 1 foot above the conduit or pipe. Bedding sand should have a sand equivalent of at least 30.

Bedding sand and backfill should not be jetted or ponded into place but should be mechanically compacted in accordance with the recommendations in Section 8.3.4.

8.4 SURFACE DRAINAGE AND EROSION CONTROL

Surface drainage should be provided to reduce ponding and drain surface water away from foundations, slabs-on-grade, and edges of pavements. Surface runoff should be directed toward suitable collection or discharge facilities. We recommend that within 10 feet of buildings, a surface gradient of at least 2 to 4 percent be used for paved and unpaved surfaces, respectively. Elsewhere, we recommend using a positive surface drainage of 2 percent. Pavements should be designed with gradients of 2 percent in their principal direction of drainage, unless drainage reaches are less than 20 feet.

We recommend that approved temporary and permanent erosion control measures be implemented to reduce erosion and comply with applicable County and/or City requirements. Soil on graded or cut slopes should be fertilized, mulched, and planted as soon as possible after grading with erosion-resistant vegetation. These plants should be watered lightly at appropriate intervals until growth is established.

8.5 FOOTINGS

Footings should be embedded at least 18 inches below the lowest adjacent soil subgrade. We define soil subgrade as the prepared soil beneath floor slabs, aggregate layers, and landscape soil.

Footings bearing on undisturbed natural soil, rock, or compacted engineered fill may be designed using an allowable bearing capacity of 3,000 pounds per square foot (psf) for dead plus normal duration live loads. This allowable bearing capacity value may be increased by one-third for total load conditions, including wind and seismic.

For resistance to lateral loads, base friction resistance may be calculated using an ultimate friction coefficient of 0.35. Passive resistance may be calculated using a uniform pressure of 1,300 psf (rectangular distribution) for transient loads, such as seismic loads, and an equivalent fluid unit weight (triangular distribution) of 250 pcf for sustained loads. Passive resistance contributed by the top 12 inches of soil should be neglected unless a concrete slab-on-grade or pavement covers the ground. We reduced these allowable passive pressures by a factor of 1.5 from the ultimate value to limit the foundation movement required to mobilize passive pressure. The recommended passive pressure and base friction may be combined without reduction in calculating total lateral resistance.

We anticipate that bedrock excavation will result in some overexcavation because excavated rock has relatively large particle sizes. Any overexcavations may be backfilled with engineered fill consisting of on-site material, provided no more than 1 foot of fill beneath footings is required. Overexcavations beneath and on the sides of footings may be backfilled with lean cement slurry or concrete with a 28-day unconfined compressive strength of at least 100 pounds per square inch (psi).

The Geotechnical Engineer should check all footing excavations prior to placing steel and casting concrete. Any unsuitable, loose, or soft soil encountered at footing bottoms, as determined by the Geotechnical Engineer during construction, should be removed and replaced by concrete or lean cement slurry.

Condor estimates that settlement of footings designed and constructed according to our recommendations should settle less than ½ inch, and differential settlement should be less than ½ inch in 30 horizontal feet.

8.6 SLABS-ON-GRADE

Subgrade soil beneath slabs-on-grade should be prepared and maintained moist and undisturbed until they are covered according to the recommendations presented in Section 8.3. Soil subgrades should not be covered until the Geotechnical Engineer approves them.

To reduce water vapor transmission upward through floor slabs, they should be constructed on a minimum 4-inch thick layer of capillary break material covered with a vapor retarder. The capillary break material should be free-draining, clean gravel or rock, such as No. 4 by ¾-inch pea gravel or permeable aggregate complying with Caltrans Standard Specification, Section 68, Class 1, Type B Permeable Material. The vapor retarder should be at least 10-mil in thickness and meet the material requirements for Class C vapor retarders presented in ASTM Standard Specification E1745, and should be installed according to ASTM E1643. These installation requirements include overlapping seams by 6 inches, taping seams, and sealing penetrations in the vapor retarder.

Condor does not practice in the field of moisture vapor transmission and we suggest that qualified experts be contacted to assist in the design and construction of measures related to moisture transmission through slabs-on-grade. The American Concrete Institute (ACI) Committee document "Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials" (ACI 302.2R-06) does provide guidelines for reducing moisture migration through slabs-on-grade. This document advises that concrete slabs be cast directly on the vapor retarder (ACI 302.2R-06, Section 9.3) and provides guidelines for selecting vapor permeance, tensile strength and puncture resistance. When casting the slab directly on the vapor retarder, a reduced joint spacing, low shrinkage mix design, or other appropriate measures should be used to control slab curl. The ACI guide also notes that a maximum water-cement ratio of 0.5 has yielded satisfactory performance on many slab-on-grade projects. Water-reducing admixtures may be useful in achieving workability at low water-cement ratios. Control joints should be provided at appropriate intervals to control the location of shrinkage cracks. After proper curing, the slab should be allowed to dry and then should be tested to check that the moisture transmission rate is appropriate for the intended floor covering.

To minimize shrinkage cracking, concrete slabs should be reinforced with No. 3 rebar spaced 18 inches on center each way.

Where moisture transmission through slabs-on-grade such as pedestrian exterior concrete pavements is tolerable, then the slabs may be cast directly on the soil subgrade. We suggest, however, that 4-inch thick layers of aggregate base be placed beneath exterior slabs to protect the soil subgrades from disturbance during construction activity, such as placement of reinforcing steel, or from drying of the subgrade soil.

8.7 PAVEMENT

Soil subgrades beneath pavement areas should be prepared and maintained moist and undisturbed until covered in accordance with the recommendations in Section 8.3.3. The Geotechnical Engineer should approve subgrades immediately before they are covered.

Based on the results of our R-value tests and our evaluation, we recommend using an R-value of 15 for design. Condor should evaluate the actual R-value during construction after pavement subgrades are prepared. The R-value of imported material should be at least as high as the design value.

Class 2 aggregate base (AB) beneath pavement areas should comply with the minimum requirements specified in Caltrans Standard Specifications, Section 39 for 19 mm (0.75-inch) Type B aggregate and should be compacted to a minimum of 95 percent relative compaction (ASTM Test Method D-1557). AB that becomes disturbed after compaction should be re-compacted and re-tested prior to paving. The Geotechnical Engineer should approve the AB surface for proper compaction immediately prior to paving.

Paved areas should be sloped and adequately drained to prevent surface water or subsurface seepage from saturating and weakening the pavement subgrade soil. Where adjacent landscape or vacant areas slope down to pavement, provisions should be made to reduce seepage of subsurface water beneath pavements. Curbs that extend at least 2 inches below the soil subgrade could be used to reduce seepage. For better performance, especially where swales descend down towards pavement edges, we recommend that adequate surface drainage be provided and that subdrains (edge drains) be considered.

The subsections that follow contain additional recommendations for design of asphalt concrete (AC) and concrete pavements.

8.7.1 Asphalt Concrete Pavement

We based our design recommendations for new AC pavement on the Caltrans Flexible Pavement Design Method as presented in Chapter 600 of the California Department of Transportation Highway Manual, and an R-value of 15. The designs include a 0.2 factor added to the required gravel equivalent (GE) of the AC layer. The table that follows presents the resulting recommended pavement design sections.

Traffic Index	Recommended AC Thickness (inches)	Recommended AB Thickness (inches)
4 (and below)	2.5	6
5	2.5	9.5
6	3	11.5

AC = Asphalt Concrete
AB = Class 2 Aggregate Base (minimum R-Value = 78)

AC should comply with the Caltrans material property requirements.

8.7.2 Concrete Pavement

Exterior concrete pavement design should conform with County and/or City standards. A modulus of subgrade reaction, k_v (30-inch circular plate) of 150 psi, may be used for design of vehicular concrete pavement. We recommend that exterior concrete pavements consist of at least 6 inches of AB beneath at least 6 inches of concrete.

The concrete used for pavement areas should have a 28-day compressive strength of at least 3,000 psi, and should have entrained air to resist damage from freezing.

Expansion/contraction joints should be constructed at a maximum spacing of 15 feet. Where the outer edge of a concrete pavement meets asphalt pavement, the concrete slab should be thickened by 50 percent at a taper not to exceed a slope of 1 in 10.

9.0 CONSTRUCTION CONSIDERATIONS

If earthwork operations are performed during the rainy season or where wet soils are encountered regardless of season, measures such as drying of soil, excavation and replacement, chemical treatments of the soil, or use of stabilization fabric and rock may be useful to stabilize "pumping" soils and facilitate compaction.

As discussed in Section 8.3.2, excavations extending more than a few feet below the top of bedrock may be difficult to excavate using a backhoe.

10.0 ADDITIONAL SERVICES

Condor should review project plans and specifications to check that our recommendations apply, and that the intent of our recommendations is incorporated in the design.

Because subsurface conditions vary, it is not possible to include all construction details related to the geotechnical aspects of the project in plans and specifications. Geotechnical recommendations depend on the possible need for adjustment in the field during construction. The adjustments depend on conditions revealed during construction that could only be anticipated based on available subsurface information at the time we issued this report. Therefore, Condor, or another qualified representative, should perform geotechnical observation and testing services during grading and construction of foundations and pavements to check that the intent of our recommendations were followed during construction and that the geotechnical aspects of the work are performed in accordance with the approved plans and specifications. In addition, we should check for any subsurface conditions that vary from the conditions encountered during our subsurface investigation, and we should develop supplemental geotechnical recommendations, as necessary.

11.0 LIMITATIONS

The geotechnical conclusions and recommendations presented in this report are intended for planning and design of the proposed operations headquarters building as described in Section 2.0. These conclusions and recommendations may not apply if:

- The report is used for a different site or project.
- The recommendations presented in this report are not followed.
- Any other change is made that materially alters the proposed project.

We based the conclusions and recommendations presented in this report on the data obtained from the test pits shown on Figure 2. Subsurface conditions may, and usually do, vary between and around these locations. Should varied conditions be discovered during construction, additional exploration, testing, analysis, and development of supplemental recommendations may be required. Any person associated with this project who observes conditions or features of the site or its surrounding areas that are different from those described in the report should report them immediately to Condor for evaluation.

Implementation of our recommendations requires an adequate testing and observation program during construction. If Condor does not perform this testing and observation, as discussed in various sections of this report, then the Geotechnical Engineer responsible for observation and testing should thoroughly review this report and should agree with its conclusions and recommendations or, otherwise, provide alternative recommendations. If Condor is not retained for these services, then the client and their consultant that performed the services assumes the responsibility for any potential claim during and after construction because of misinterpretation of recommendations in this report. Condor will no longer be the Geotechnical Engineer of Record when another consultant performs any additional geotechnical services.

This report was prepared in accordance with the generally accepted standards of geotechnical engineering practice that exist in Calaveras County at the time Condor issued it. No other warranty, express or implied, is made. It is the Owner's responsibility to see that all parties to the project, including the designers, contractors, and subcontractors, are made aware of this report in its entirety.

Changes in the standards of practice in the field of geotechnical engineering, changes in site conditions such as new excavations or fills, new agency regulations, or modifications to the proposed project warrant professional review of this report. Because of this, there is a practical limit to the usefulness of this report without critical professional review. It is suggested that 2 years be considered a reasonable time for the validity of this report.

Respectfully submitted,

CONDOR EARTH TECHNOLOGIES, INC.

ANDREW S. KOSITSKY
GE2532
EXP. 12/31/10

Andrew S. Kositsky
Geotechnical Engineer No. 2532

Reviewed by:

JOHN H. DAILEY
No. 256
Exp. 3/31/12

John H. Dailey
Geotechnical Engineer No. 256

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REFERENCES

Clark, William B., Lydon, Philip A., 1962, Mines and Mineral Resources of Calaveras County, California, California Division of Mines and Geology, County Report Number Two.

Cramer, Chris H., Toppozada, Tousson R., and Parke, David L., 1978, Seismicity of the Foothills Fault System between Folsom and Oroville, California, Caifornia Geology publication, pp. 182 – 185.

Hart, E.W., and Bryant, W.A., 1997 (Updated through 1998), Fault Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps, California Division of Mines and Geology, Special Publication 42.

Jennings, C.W., Fault Activity Map of California and Adjacent Areas, California Geological Survey (formerly California Division of Mines and Geology), 1994.

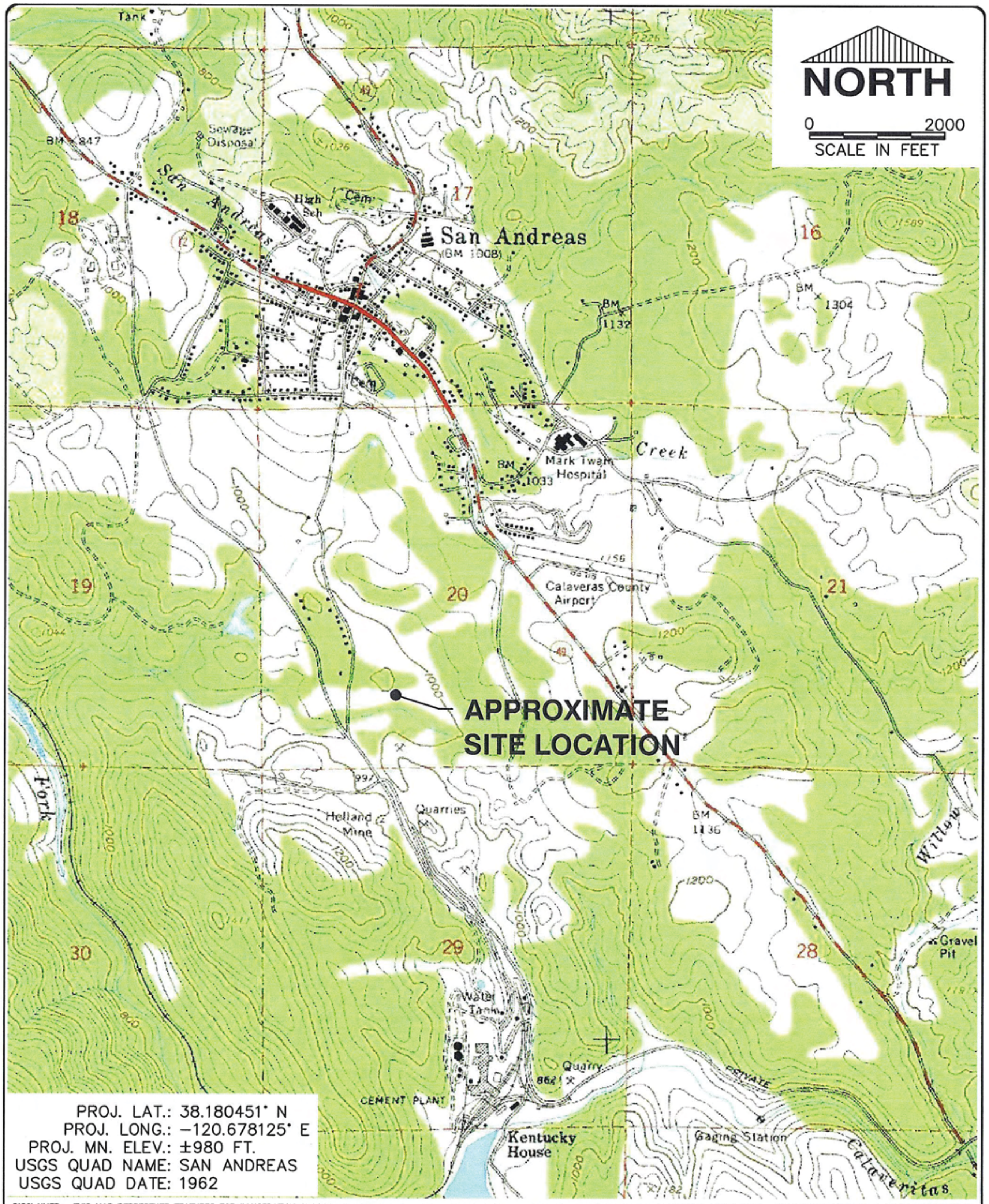
Petersen, M.D., Bryant, W.A., Cramer, C.H., Cao, T., Reichle, M.S., Frankel, A.D., Lienkaemper, J.J., McCrory, P.A., Schwartz, D.P., 1996, Probabilistic Seismic Hazard Assessment for the State of California, California Division of Mines and Geology Open-File Report 96-08 and U.S. Geological Survey Open-File Report 96-706, 33pp.

Wakabayashi, J., and Sawyer, T.L., 2000, Neotectonics of the Sierra Nevada and the Sierra Nevada-Basin and Range Transition, California, with Field Trip Stop Descriptions for the Northeastern Sierra Nevada, in Field Guide to the Geology and Tectonics of the Northern Sierra Nevada, National Association of Geoscience Teachers, Far-Western Section, Fall Conference – 2000, California Division of Mines and Geology Special Publication 122, pp. 173 – 212.

Appendix A

FIGURES

Appendix A



PROJ. LAT.: 38.180451° N
PROJ. LONG.: −120.678125° E
PROJ. MN. ELEV.: ±980 FT.
USGS QUAD NAME: SAN ANDREAS
USGS QUAD DATE: 1962

DISCLAIMER: THIS MAP REPRESENTS FEATURES FOR ILLUSTRATION PURPOSES ONLY. IT IS NOT A LEGAL SURVEY AND IS NOT INTENDED FOR USE IN DETERMINING BOUNDARIES. ANY USE OF THIS MAP FOR PURPOSES OTHER THAN FOR APPROXIMATE LOCATION OF FEATURES IS DONE SO AT THE USER'S RISK AND WITHOUT THE CONSENT OF CONDOR EARTH TECHNOLOGIES, INC.

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Published Date 11/23/10
Scale AS SHOWN
Drawn DJT
Chk'd ASK

VICINITY MAP
PROPOSED OPERATIONS HEADQUARTERS
CALAVERAS COUNTY WATER DISTRICT
SAN ANDREAS, CALAVERAS COUNTY, CA

FIGURE 1

File No. 5132M-F1

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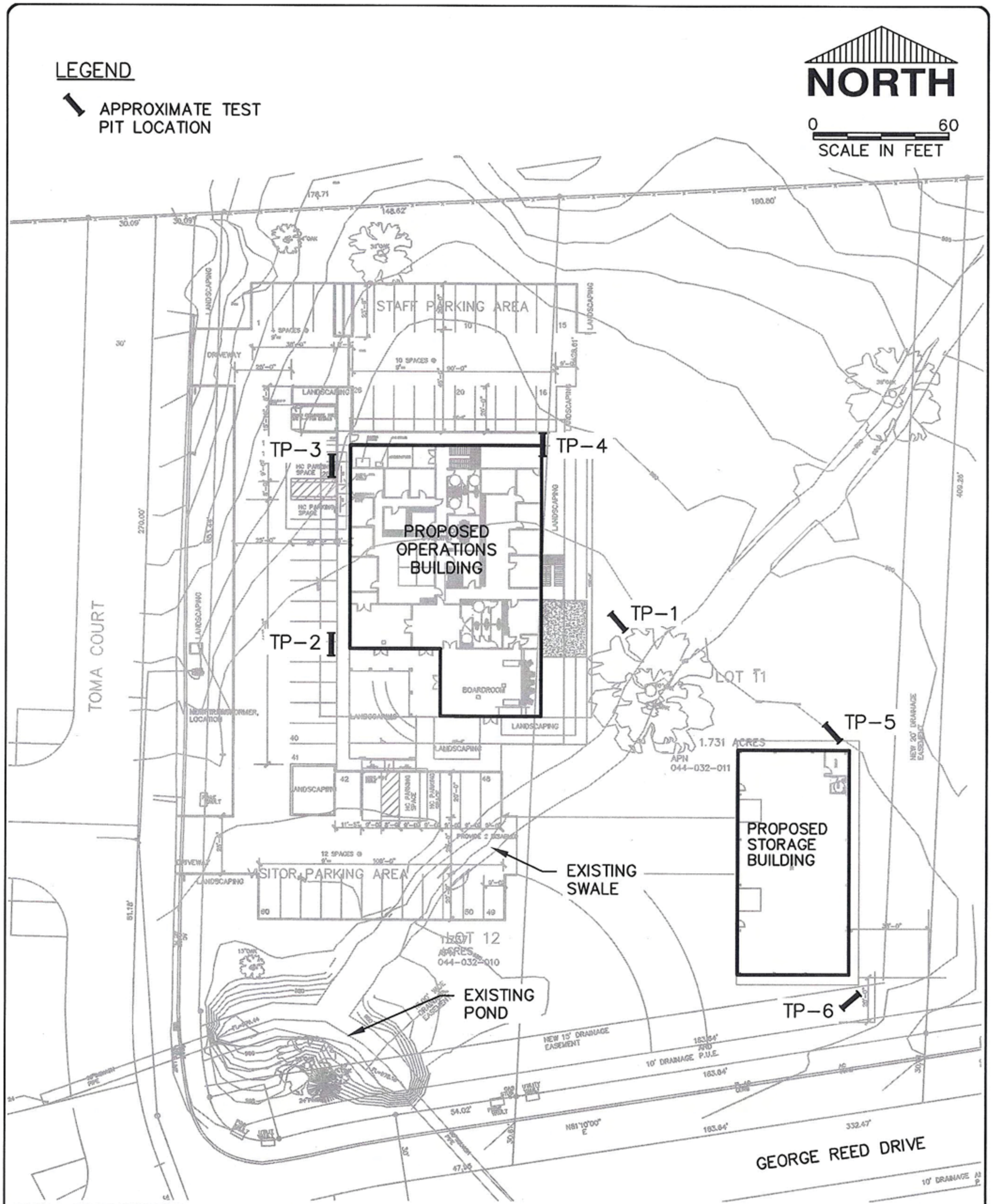
Appendix A



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SITE PLAN
PROPOSED OPERATIONS HEADQUARTERS
CALAVERAS COUNTY WATER DISTRICT
SAN ANDREAS, CALAVERAS COUNTY, CA

FIGURE 2

File No. 5132M-F1

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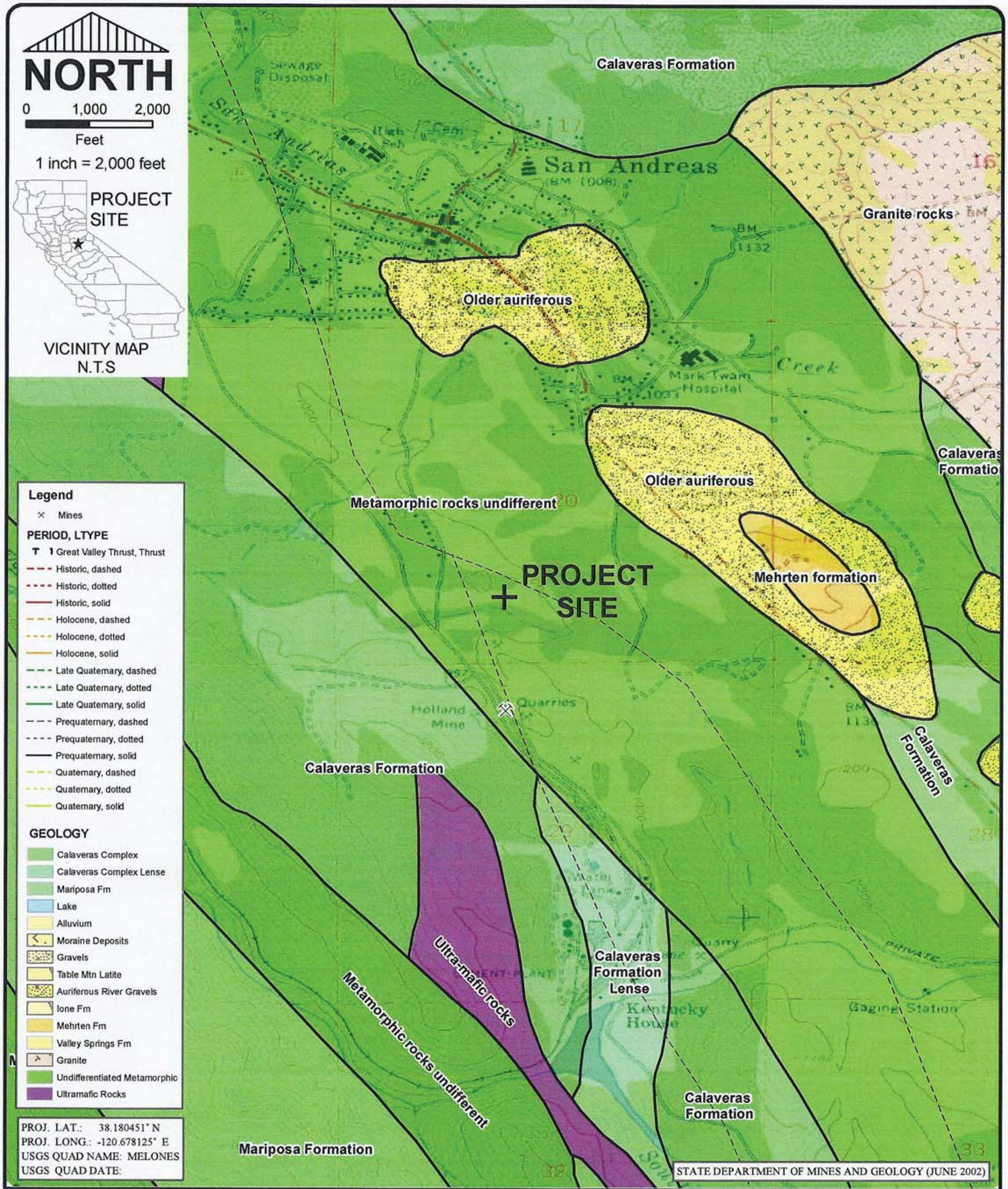
Appendix A



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Job No.	5132
Published Data	23 NOV. 2010
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SURFACE GEOLOGY MAP
NEW OPERATIONS HEADQUARTERS
CALAVERAS COUNTY WATER DISTRICT

FIGURE
3

File No.
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APPENDIX A

Test Pit Logs

Appendix A

CONDOR EARTH TECHNOLOGIES, INC.

LOG OF TEST PIT - TP-1

Project:	New Operations Headquarters - Calaveras County Water District Northeast Corner of George Reed Drive/Toma Court Intersection San Andreas, California	**Location:**	See Figure 2
		Approx. Coord.:	
		Approx. Elev. (ft):	988.5
Project No.:	5132M	**Approx. Depth (ft):**	5
Logged By:	A. Kositsky	**Approx. Length (ft):**	10
Date:	11/15/10	**Orientation:**	
		Equipment:	Rubber-tired backhoe with 2-foot-wide bucket

Depth (ft): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

NATURAL SOIL - LEAN CLAY WITH SAND (CL): brown, moist, stiff, fine-grained sand

0.5 feet: w = 14.8, γ_d = 90

1 foot: dry to moist, hard

2.5 feet: w = 7.8, γ_d = 103

LEAN CLAY WITH SAND (CL): brown, dry to moist, hard, fine-grained sand, some coarse and subrounded gravel consisting of strong and hard marble

5 feet: pyllite

GROUNDWATER: Not encountered at time of excavation

SAMPLE: Tube samples at 0.5 feet and 2.5 feet

NOTES:

LEGEND:

PP = Pocket Penetrometer Resistance - Unconfined Compressive Strength (tons per square foot)

F = Percent Passing No. 200 Sieve by Dry Weight, LL = Liquid Limit, PI = Plasticity Index

w = Moisture Content (percent), γ_d = Dry Unit Weight (pounds per cubic foot)

q_u = Unconfined Compressive Strength - Laboratory (pounds per square foot)

S_u = Undrained Shear Strength (pounds per square foot)

Drained Shear Strength Parameters: c' = Cohesion (pounds per square foot), ϕ' = Internal Friction Angle (deg)

Appendix A

CONDOR EARTH TECHNOLOGIES, INC.

LOG OF TEST PIT - TP-2

Project: New Operations Headquarters - Calaveras County Water District
Northeast Corner of the George Reed Drive/Toma Court Intersection
San Andreas, California
Project No.: 5132M
Logged By: A. Kositsky
Date: 11/15/10

Location: See Figure 2
Approx. Coord.:
Approx. Elev. (ft): 988
Approx. Depth (ft): 3.5
Approx. Length (ft): 10
Orientation:
Equipment: Rubber-tired backhoe with 2-foot-wide bucket

Depth (ft)		
0		**NATURAL SOIL - LEAN CLAY WITH SAND (CL):** brown, moist to wet, medium stiff, fine-grained sand
1		1 foot: dry to moist, very stiff to hard
2		**CALAVERAS FORMATION - PHYLLITE:** Moderately weathered, closely fractured, tight and slightly rough fractures, moderately strong, moderately hard
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

GROUNDWATER: Not encountered at time of excavation
SAMPLE:
NOTES:

LEGEND:
PP = Pocket Penetrometer Resistance - Unconfined Compressive Strength (tons per square foot)
F = Percent Passing No. 200 Sieve by Dry Weight, LL = Liquid Limit, PI = Plasticity Index
w = Moisture Content (percent), γ_d = Dry Unit Weight (pounds per cubic foot)
q_u = Unconfined Compressive Strength - Laboratory (pounds per square foot)
S_u = Undrained Shear Strength (pounds per square foot)
Drained Shear Strength Parameters: c' = Cohesion (pounds per square foot), ϕ' = Internal Friction Angle (deg)

Appendix A

CONDOR EARTH TECHNOLOGIES, INC.

LOG OF TEST PIT - TP-3

Project: New Operations Headquarters - Calaveras County Water District
Northeast Corner of the George Reed Drive/Toma Court Intersection
San Andreas, California
Project No.: 5132M
Logged By: A. Kositsky
Date: 11/15/10

Location: See Figure 2
Approx. Coord.:
Approx. Elev. (ft): 990
Approx. Depth (ft): 2.5
Approx. Length (ft): 10
Orientation:
Equipment: Rubber-tired backhoe with 2-foot-wide bucket

Depth (ft)		
0		
1		**NATURAL SOIL - LEAN CLAY WITH SAND (CL):** brown, moist , very stiff to hard, fine-grained sand LL = 28, PI = 9, R-Value = 23
2		**CALAVERAS FORMATION - MARBLE:** Slightly weathered, Occasionally fractured, tight and slightly rough fractures, strong, hard
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

GROUNDWATER: Not encountered at time of excavation
SAMPLE: Bulk Sample: 0.5 to 1.5 feet
NOTES:

LEGEND:

PP = Pocket Penetrometer Resistance - Unconfined Compressive Strength (tons per square foot)
F = Percent Passing No. 200 Sieve by Dry Weight, LL = Liquid Limit, PI = Plasticity Index
w = Moisture Content (percent), γ_d = Dry Unit Weight (pounds per cubic foot)
q_u = Unconfined Compressive Strength - Laboratory (pounds per square foot)
S_u = Undrained Shear Strength (pounds per square foot)
Drained Shear Strength Parameters: c' = Cohesion (pounds per square foot), ϕ' = Internal Friction Angle (deg)

Appendix A

CONDOR EARTH TECHNOLOGIES, INC.
LOG OF TEST PIT - TP-4

Project:	New Operations Headquarters - Calaveras County Water District Northeast Corner of the George Reed Drive/Toma Court Intersection San Andreas, California	**Location:**	See Figure 2
		Approx. Coord.:	
		Approx. Elev. (ft):	989.5
Project No.:	5132M	**Approx. Depth (ft):**	4
Logged By:	A. Kositsky	**Approx. Length (ft):**	10
Date:	11/15/10	**Orientation:**	
		Equipment:	Rubber-tired backhoe with 2-foot-wide bucket

Depth (ft)		
0		NATURAL SOIL - **LEAN CLAY WITH SAND (CL):** brown, moist , stiff , fine-grained sand
1		
2		1.5 feet: dry to moist, very stiff to hard
3		CALAVERAS FORMATION - **PHYLLITE:** Moderately weathered, closely fractured, tight and slightly rough fractures, moderately strong, moderately hard
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

GROUNDWATER: Not encountered at time of excavation

SAMPLE:

NOTES:

LEGEND:

PP = Pocket Penetrometer Resistance - Unconfined Compressive Strength (tons per square foot)

F = Percent Passing No. 200 Sieve by Dry Weight, LL = Liquid Limit, PI = Plasticity Index

w = Moisture Content (percent), γ_d = Dry Unit Weight (pounds per cubic foot)

q_u = Unconfined Compressive Strength - Laboratory (pounds per square foot)

S_u = Undrained Shear Strength (pounds per square foot)

Drained Shear Strength Parameters: c' = Cohesion (pounds per square foot), ϕ' = Internal Friction Angle (deg)

Appendix A

CONDOR EARTH TECHNOLOGIES, INC.

LOG OF TEST PIT - TP-5

Project:	New Operations Headquarters - Calaveras County Water District Northeast Corner of the George Reed Drive/Toma Court Intersection San Andreas, California	**Location:**	See Figure 2
		Approx. Coord.:	
		Approx. Elev. (ft):	988.5
Project No.:	5132M	**Approx. Depth (ft):**	5
Logged By:	A. Kositsky	**Approx. Length (ft):**	10
Date:	11/15/10	**Orientation:**	
		Equipment:	Rubber-tired backhoe with 2-foot-wide bucket

Depth (ft)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

NATURAL SOIL - LEAN CLAY WITH SAND (CL): brown, moist, medium stiff to stiff, fine-grained sand

1.5 feet: dry to moist, hard

LEAN CLAY WITH SAND (CL): brown, dry to moist, hard, fine-grained sand, some fine to coarse and subangular gravel consisting of phyllite, which is highly weathered, friable, and ha low hardness

GROUNDWATER: Not encountered at time of excavation

SAMPLE: Tube samples at 2 feet (partial)

NOTES:

LEGEND:

PP = Pocket Penetrometer Resistance - Unconfined Compressive Strength (tons per square foot)

F = Percent Passing No. 200 Sieve by Dry Weight, LL = Liquid Limit, PI = Plasticity Index

w = Moisture Content (percent), γ_d = Dry Unit Weight (pounds per cubic foot)

q_u = Unconfined Compressive Strength - Laboratory (pounds per square foot)

S_u = Undrained Shear Strength (pounds per square foot)

Drained Shear Strength Parameters: c' = Cohesion (pounds per square foot), ϕ' = Internal Friction Angle (deg)

Appendix A

CONDOR EARTH TECHNOLOGIES, INC.

LOG OF TEST PIT - TP-6

Project: New Operations Headquarters - Calaveras County Water District
Northeast Corner of the George Reed Drive/Toma Court Intersection
San Andreas, California
Project No.: 5132M
Logged By: A. Kositsky
Date: 11/15/10

Location: See Figure 2
Approx. Coord.:
Approx. Elev. (ft): 988.5
Approx. Depth (ft): 5.5
Approx. Length (ft): 11
Orientation:
Equipment: Rubber-tired backhoe with 2-foot-wide bucket

Depth (ft)

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

NATURAL SOIL - LEAN CLAY WITH SAND (CL): brown, moist , medium stiff to stiff, fine-grained sand
1 foot: w = 17.1, γ_d = 98

1.5 feet: dry to moist, very stiff to hard

CALAVERAS FORMATION - PHYLLITE: Moderately weathered, closely fractured, tight and slightly rough fractures, moderately strong, moderately hard

GROUNDWATER: Not encountered at time of excavation
SAMPLE: Tube sample at 1 foot
NOTES:

LEGEND:

PP = Pocket Penetrometer Resistance - Unconfined Compressive Strength (tons per square foot)
F = Percent Passing No. 200 Sieve by Dry Weight, LL = Liquid Limit, PI = Plasticity Index
w = Moisture Content (percent), γ_d = Dry Unit Weight (pounds per cubic foot)
q_u = Unconfined Compressive Strength - Laboratory (pounds per square foot)
S_u = Undrained Shear Strength (pounds per square foot)
Drained Shear Strength Parameters: c' = Cohesion (pounds per square foot), ϕ' = Internal Friction Angle (deg)

BID ITEM NO.6C – PLUMBING (*AMMENDED PER ADDENDUM 2)*

Contractor shall provide all labor, equipment and materials to furnish and install all plumbing, piping and fixtures per plumbing drawings including gas, water and sanitary sewer systems required for a complete building. Payment for this item will be made as a lump sum.

BID ITEM NO.7C – INTERIOR DOORS AND WINDOS *(AMMENDED PER ADDENDUM 2)*

Contractor shall provide all labor, equipment and materials to furnish and install interior windows and interior fire-rated steel doors. Payment for this item will be made as a lump sum.

BID ITEM NO.8C – LIGHTING *(AMMENDED PER ADDENDUM 2)*

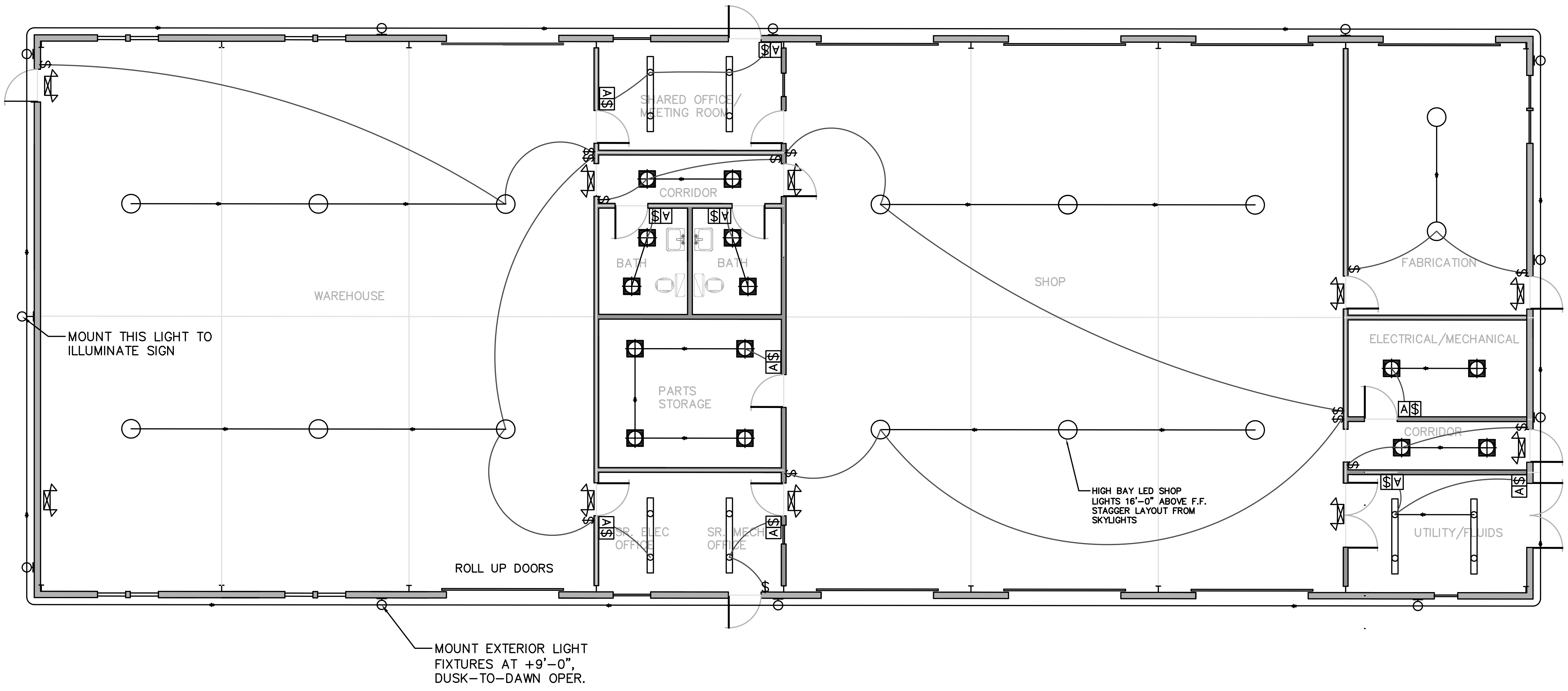
Contractor shall provide all labor, equipment and materials to design, furnish, install and test a complete lighting system for the building. All lighting fixtures to be Commercial Quality LED Lighting fixtures manufactured by Sylvania, General Electric or Philips. Payment for this item will be made as a lump sum.

BID ITEM NO.9C – ELECTRICAL *(AMMENDED PER ADDENDUM 2)*

Contractor shall provide all labor, equipment and materials to design, furnish, install, and test a complete electrical system for the project. The contractor will be responsible for coordinating with PG&E to schedule field meetings, inspections and installation of meters. Work includes installing Fire Alarm System. Payment for this item will be made as a lump sum.

BID ITEM NO.10C – HVAC *(AMMENDED PER ADDENDUM 2)*

Contractor shall provide all labor, equipment and materials to design, furnish, install and test the heating, ventilation and air conditioning system needed for a complete building as shown on the drawings and described in the specifications. The heating and air conditioning system shall be split system with a combination furnace, heat pump and air conditioning. Payment for this item will be made as a lump sum. Ridge mounted vents are not included in this item.



LIGHTING FLOOR PLAN

Revised Per Addendum 2.

PRINT DATE: ##/##/## FILE: ???????????

REVISIONS				
REV.	DESCRIPTION	DATE	BY	CHKD.

NOT TO SCALE

DESIGNED:
DRAWN:
CHECKED:
DATE:

CALAVERAS COUNTY WATER DISTRICT
120 TOMA COURT
P.O. BOX 846
SAN ANDREAS, CA 95249
(209) 754-3543 FAX: (209) 754-1069

MAIN CAMPUS EXPANSION - SHOP

LIGHTING FIXTURE PLAN

DRAWING NUMBER
E-2
SHEET NUMBER
23 OF 24
FILENAME
CCWD FILE NO.