NOTICE TO BIDDERS
ADDENDUM #1
Bid #102-18 T Building - New Storage Buildings Project
DSA # 04115420 DSA FILE # 37-C1

Palomar Community College District

The following changes, additions, deletions, clarifications or corrections shall become part of the Bid & Contract Documents for the above listed project. This Addendum #1 forms a part of the contract document and modifies the original bidding documents. Acknowledge receipt of Addendum #1 in the space provided on the bid form. Failure to do so may subject bidder to disqualification.

CHANGE TO BID DOCUMENTS

Item No AD-1.1:

- Specifications - Geotechnical Evaluation
  Attached is the complete Geotechnical Evaluation for Proposed Improvements Adjacent to the T-Building at Palomar College by Ninyo & Moore dated July 18, 2014 and dated August 23, 2017.

- Specifications - General Conditions, Article 46 - Inspector's Field Office, p. 71. Remove Strikethrough on this Article.

SPECIFICATIONS

Item No. AD-1.2: Reference Deleted Sections

A. The following specification section is hereby deleted:

01 32 16.13, Network Analysis Schedules

01 57 23, Storm Water Pollution Control

Item No. AD-1.3: Reference Revised Sections

A. The following revised specification sections are hereby issued:

01 10 00, Summary of Work

01 30 00, Administrative Requirements

01 40 10, Quality Requirements

01 50 00, Temporary Facilities and Controls

01 60 00, Product Requirements

01 70 00, Execution and Closeout Requirements

01 74 19, Construction Waste Management

22 13 16, Sanitary Waste and Vent Piping

31 23 15, Site Earthwork Preparation

Item No. AD-1.4: Reference New Sections

A. The following new specification section is hereby issued:

26 01 00, Electrical General Provisions

Item No. AD-1.5: Reference Section 02 41 19, Selective Demolition

A. Delete Subparagraph 1.05.C.4.

Item No. AD-1.6: Reference Section 05 12 00, Structural Steel

A. Delete Paragraph 1.6B, substitute therefor:

"B. Provide and install 5 tons or 2% of structural steel in addition to quantities shown on the drawings at no additional cost to Owner. This additional steel shall be installed during construction, in sizes and locations as directed."

Item No. AD-1.7: Reference Section 05 40 00, Cold-Formed Metal Framing

A. Delete Subparagraph 2.2.A.1, substitute therefor:

"1. Grade: Grade 20, U.N.O on plans."

Item No. AD-1.8: Reference Section 07 21 13, Rigid Thermal Insulation

A. Delete Subparagraph 2.02.A.3, substitute therefor:

"3. Thickness: 5.5 inches."

B. Delete Paragraph 3.03.A, substitute therefor:

"A. Notify Project Inspector before work is covered. Approval by Project Inspector shall be received before any work is concealed in manner that will make the inspection difficult."

Item No. AD-1.9: Reference Section 08 71 00, Door Hardware

A. Delete Subparagraph 1.1.B.3, substitute therefor:

"3. Division 08 - Metal Doors and Frames, Specialty Doors."

B. Delete Subparagraphs 1.01.B.2.c and 1.01.B.2.d.

C. Delete Subparagraph 1.10.F.2.

Item No. AD-1.10: Reference Section 09 06 00, Schedules for Finishes

A. Delete Article 3.01, substitute therefor:

"3.01 SCHEDULE OF EXTERIOR FINISHES

A. 07 41 13 - Metal Roofing Panel

1. "MR1" - Metal Wall Panel

a. Finish: Semi-Gloss

b. Manufacturer: Vista Paint

c. Color: 0534 Subtle Shadow. Match adjacent (e) building - t metal wall panels."

B. 07 42 13 - Form Metal Wall Panels

1. "MWP" - Metal Wall Panel

a. Finish: Semi-Gloss

b. Manufacturer: Vista Paint

c. Color: 0534 Subtle Shadow. Match adjacent (e) Building - T metal wall panels."

Item No. AD-1.11: Reference Section 26 27 26, Switches and Receptacles

A. Delete Article 2.1, substitute therefor:

"2.1. All switches shall be of the quiet mechanical type, Specification Grade, 20 amp, 120/277 volt AC as follows:

	HUBBELL	LEVITON	PASS & SEYMOUR
Single Pole	CS120	CS1202	CS20AC1"

Item No. AD-1.12: Reference Section 32 31 13, Fences and Gates

A. Delete Subparagraph 3.01.A.1, substitute therefor:

"1. Install base plate per drawings. Plate shall be galvanized."

DRAWINGS

Item No. AD-1.13: Reference Revised Drawings

A. The following revised Drawings are hereby issued:

A2.1, Storage Building 1 - Plans, Elevations, and Sections

A2.2, Storage Building 2 - Plans, Elevations and Sections

A2.3, Fabrication Building 3 - Plans, Elevations and Sections

A4.1, Bldgs 1, 2 & 3 - Schedules

A10.01, Site and Fence Details

Item No. AD-1.14: Reference Drawing P1.1, Plumbing Overall Site Plan

A. In the Building Label 3, delete the following text:

"... (N) Fabricating ..."

Substitute therefor:

" ...(N) Fabrication ..."

Item No. AD-1.15: Reference Drawing P2.3, Plumbing Fabrication Building 3 Floor and Roof Plans

A. Delete Note #1, substitute therefor:

"1. For air compressor anchorage DTLS, refer to Detail 24/A10.81 and 12/S1.2."

Item No. AD-1.16: Reference Drawing P10.01, Plumbing Details

A. On Detail No. 2, revise callout note to read:

"For "Design" of conduit support trapezes see Structural Detail 13/S1.5 SIM. and Typ."

END OF ADDENDUM #1

Date Issued: January 16, 2018

1/18/18

Ron Ballesteros-Perez, Assistant Superintendent
Vice President Finance & Administrative Services
Palomar Community College District

LICENSED ARCHITECT
KENNETH SALYER
NO. C-19082
REN. 11-30-19
STATE OF CALIFORNIA

By _____
(Kenneth Salyer)

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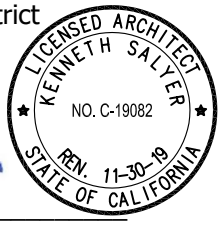
Ron Ballesteros-Perez, Assistant Superintendent
Vice President Finance & Administrative Services
Palomar Community College District



By _____
(Kenneth Salyer)

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

GEOTECHNICAL EVALUATION
PROPOSED IMPROVEMENTS
ADJACENT TO THE T-BUILDING
PALOMAR COLLEGE
SAN MARCOS, CALIFORNIA

PREPARED FOR:
Palomar College
1140 West Mission Road, Suite A-4A
San Marcos, California 92069

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
5710 Ruffin Road
San Diego, California 92123

July 18, 2014
Project No. 106088027

July 18, 2014
Project No. 106088027

Mr. Ralph Johnson
Construction Project Manager
Palomar College
1140 West Mission Road, Suite A-4A
San Marcos, California 92069

Subject: Geotechnical Evaluation
Proposed Improvements Adjacent to the T-Building
Palomar Community College
San Marcos, California

Dear Mr. Johnson:

In accordance with your request and our proposal dated April 24, 2014, we have performed a supplemental subsurface evaluation for the proposed improvements adjacent to the T-Building at Palomar College in San Marcos, California. The proposed improvements will include the construction of two 2,400 square foot, steel warehouse storage buildings on the north side of the existing T-Building. We issued geotechnical evaluation reports for the adjacent "IT" and T-Buildings in 2008 through 2010 (Ninyo & Moore, 2008, 2009a, 2009b, 2009c, and 2010). Subsequently, additional improvements not addressed in our previous reports are now proposed. This report presents the results of our supplementary subsurface exploration and laboratory testing, and provides an update of our conclusions and recommendations regarding geotechnical aspects at the site for the additional improvements.

We appreciate the opportunity to be of service on this project.

Sincerely,
NINYO & MOORE

Christina Tretinjak, PG
Project Geologist

Jeffrey T. Kent, PE, GE
Senior Engineer

Ronald D. Hallum, PG, CEG
Chief Geologist

Kenneth H. Mansir, Jr., PE, GE
Principal Engineer

CAT/JTK/RDH/KHM/gg

Distribution: (1) Addressee

TABLE OF CONTENTS

1. INTRODUCTION

In accordance with your request and our proposal dated April 24, 2014, we have performed a supplemental subsurface evaluation for the proposed improvements adjacent to the T-Building at Palomar College in San Marcos, California. The proposed improvements will include the construction of two 2,400 square foot steel warehouse storage buildings on the north side of the existing T-Building. We issued geotechnical evaluation reports for the adjacent IT- and T-Buildings in 2008 through 2010 (Ninyo & Moore, 2008, 2009a, 2009b, 2009c, and 2010). Subsequently, additional improvements not addressed in our previous reports are now proposed for the site. This report presents the results of our supplementary subsurface exploration and laboratory testing, and provides an update of our conclusions and recommendations regarding geotechnical aspects at the site for the additional improvements.

Our geotechnical evaluation was performed in general conformance with Chapter 18A of Title 24, Part 2, Volume 2 of the 2013 California Building Code (CBC) and California Geological Survey (CGS) Note 48. This report presents the results of our field exploration and laboratory testing, our conclusions regarding the geotechnical conditions at the additional construction sites, and our recommendations for the design and earthwork construction of this project.

2. SCOPE OF SERVICES

The scope of services for this study included the following:

- Performing a field reconnaissance to observe site conditions and to locate and mark the exploratory borings.
- Coordinating and mobilizing for the supplemental subsurface exploration. Mark-out of the existing underground utilities was conducted through Underground Service Alert.
- Drilling, logging, and sampling two exploratory borings with a truck mounted drill rig. Bulk samples of the encountered soils were collected and transported to our in-house geotechnical laboratory for testing purposes.
- Performing geotechnical laboratory testing on representative samples to evaluate soil characteristics and design parameters.

- Compiling and performing an engineering analysis of the data obtained.
- Preparing this letter report providing our findings and conclusions regarding the geotechnical aspects of the proposed improvements.

3. SITE AND PROJECT DESCRIPTION

The existing T-Building is located in the northwestern portion of the Palomar College campus in San Marcos, California. The T-Building and surrounding improvements are located on a relatively flat pad the ascending granitic rock slopes to the north and east and descending fill slopes to the south and west. The site coordinates are approximately 33.1532°N latitude and 117.1848°W longitude. The elevation at the site of the additions to T-Building is approximately 615 feet above mean sea level (MSL). Based on our review of project plans (HMC, 2014), we understand that the proposed improvements will include the construction of two 2,400 square foot steel warehouse storage buildings on the north side of the existing T-Building.

4. SUBSURFACE EXPLORATION AND LABORATORY TESTING

Our recent supplemental subsurface exploration was conducted on June 5, 2014, and consisted of the drilling, logging, and sampling of two exploratory borings (BB-1 and BB-2) in the locations shown on Figure 2. The other explorations depicted on Figure 2 were performed during our previous evaluations (Ninyo & Moore, 2008, 2009a, 2009b, 2009c, and 2010). The recent borings were drilled to depths up to 5.5 feet below the existing grade with a truck-mounted, hollow-stem auger drill rig. Drive and bulk soil samples were obtained from the borings. The samples were then transported to our in-house geotechnical laboratory for testing. The approximate locations of the previous and recent exploratory borings and test pits are shown on Figure 2. Logs of the supplemental and previous borings and test pits in the area of these additions are included in Appendix A.

Geotechnical laboratory testing of representative soil samples included shear strength of a remolded sample, modified Proctor density, and soil corrosivity. The results of the geotechnical laboratory tests performed as a part of this study are presented in Appendix B.

5. GEOLOGY AND SUBSURFACE CONDITIONS

Our findings regarding regional and site geology, including faulting and seismicity, landslides, rippability (excavatability), and groundwater conditions at the subject site are provided in the following sections. Geologic and fault location maps are presented as Figures 3 and 4, respectively.

5.1. Regional Geologic Setting

The project area is situated in the coastal foothill section of the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California (Norris and Webb, 1990; Harden, 1998). The province varies in width from approximately 30 to 100 miles. In general, the province consists of rugged mountains underlain by Jurassic metavolcanic and metasedimentary rocks, and Cretaceous igneous rocks of the southern California batholith.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest. Several of these faults, which are shown on Figure 4, are considered active faults. The Elsinore, San Jacinto and San Andreas faults are active fault systems located northeast of the project area and the Rose Canyon, Coronado Bank, San Diego Trough, and San Clemente faults are active faults located west of the project area. The Rose Canyon fault and the Newport-Inglewood fault has been mapped approximately 12 miles west of the project site. Major tectonic activity associated with these and other faults within this regional tectonic framework consists primarily of right-lateral, strike-slip movement. Further discussion of faulting relative to the site is provided in the Faulting and Seismicity section of this report.

5.2. Site Geology

Geologic units encountered during our subsurface evaluation included fill and granitic rock. These conditions are similar to those encountered during our previous evaluations (Ninyo & Moore, 2008, 2009a, 2009b, 2009c and 2010). Generalized descriptions of the earth units

encountered during our field reconnaissance and subsurface exploration are provided in the subsequent sections. Additional descriptions of the subsurface units are provided on the boring and test pit logs in Appendix A. Due to the near surface and shallow presence of granitic rock materials, a geologic cross section is not being presented.

5.2.1. Fill

Fill materials, placed and compacted previously under our observation, were encountered in our exploratory borings underlying the pavements and extending to depths up to approximately 3 feet. As encountered, these materials generally consisted of light brown and dark brown, moist, medium dense to dense, silty sand. Scattered gravel and cobbles were encountered in the fill materials.

5.2.2. Granitic Rock

Granitic rock was encountered in our exploratory borings underlying the fill materials and extending to the total depths explored. As encountered, these materials generally consisted of brown and gray, moist, granitic rock. Refusal to further drilling was encountered in the granitic rock in each of our borings. In addition, outcrops of granitic rock are present on the slopes to the north and east of the T-Building.

5.3. Rippability

Based on our site reconnaissance and subsurface exploration, the on-site fill material is expected to be rippable with heavy-duty earthmoving equipment. The granitic rock is not expected to be rippable. The use of rock breaking equipment and/or blasting should be anticipated to excavate granitic rock.

5.4. Groundwater

Groundwater was not encountered in our exploratory borings or test pits. Fluctuations in the groundwater level and local perched conditions may occur due to variations in ground surface topography, subsurface geologic conditions and structure, rainfall, irrigation, and other factors.

5.5. Flood Hazards

As shown on reviewed Federal Emergency Management Agency (FEMA) flood insurance rate maps (FIRM) the site is considered to be outside of the 500-year floodplain. The site is at approximate elevation of 615 feet MSL, higher than nearby delineated floodplains. Based on this review, the potential for significant flooding of the site is considered to be low.

5.6. Faulting and Seismicity

Based on our review of the referenced geologic maps and stereoscopic aerial photographs, as well as on our geologic field mapping, the subject site is not underlain by known active or potentially active faults (i.e., faults that exhibit evidence of ground displacement in the last 11,000 years and 2,000,000 years, respectively). However, the site is located in a seismically active area, as is the majority of southern California, and the potential for strong ground motion is considered significant during the design life of the proposed structure. Table 1 lists selected principal known active faults that may affect the subject site, the maximum moment magnitude (M_{max}) as published for the CGS by Cao et al. (2003). The approximate fault-to-site distances were calculated using the USGS Fault Database (USGS, 2014).

Table 1 – Principal Active Faults

Fault	Approximate Fault-to-Site Distance miles (kilometers)[1]	Maximum Moment Magnitude (Mw)[2]
Rose Canyon	12 (19)	7.2
Newport-Inglewood (Offshore)	12 (19)	7.1
Elsinore (Glen Ivy Segment)	16 (26)	6.8
Elsinore (Julian Segment)	16 (26)	7.1
Elsinore (Temecula Segment)	16 (26)	6.8
Coronado Bank	28 (45)	7.6
Palos Verdes	28 (45)	7.3
Earthquake Valley	35 (56)	6.5
San Joaquin Hills	42 (67)	6.6
San Jacinto (Anza Segment)	42 (67)	7.2
San Jacinto (Coyote Creek Segment)	43 (69)	6.8
Elsinore (Coyote Mountain Segment)	51 (82)	6.8
Chino Central Avenue (Elsinore Segment)	51 (82)	6.7

Table 1 – Principal Active Faults

Fault	Approximate Fault-to-Site Distance miles (kilometers)[1]	Maximum Moment Magnitude (Mw)[2]
Whittier	52 (84)	6.8
Newport-Inglewood (L.A. Basin)	54 (87)	7.1
San Jacinto (Borrego Segment)	57 (92)	6.6

Notes:
[1] USGS (2014)
[2] Cao, et al. (2003)

In general, hazards associated with seismic activity include strong ground motion, ground surface rupture, liquefaction, seismically induced settlement, and tsunamis. These hazards are discussed in the following sections.

5.6.1. Strong Ground Motion

Based on our review of background information, data pertaining to the historical seismicity of the project area are summarized in Table 2 below. This table presents historic earthquakes within a radius of approximately 62 miles (100 kilometers) of the site with a magnitude of 6.0 or greater.

Table 2 – Historical Earthquakes that Affected the Site

Date	Magnitude (M)	Approximate Epicentral Distance miles (kilometers)
November 22, 1800	6.5	12 (20)
December 8, 1812	6.9	55 (89)
February 9, 1890	6.3	53 (86)
February 24, 1892	6.7	60 (96)
May 28, 1892	6.3	57 (92)
December 25, 1899	6.6	45 (73)
May 15, 1910	6.0	39 (63)
April 21, 1918	6.8	42 (68)
July 23, 1923	6.3	58 (94)
March 11, 1933	6.3	55 (88)
March 25, 1937	6.0	56 (90)
March 19, 1954	6.2	58 (94)
April 9, 1968	6.4	61 (98)

The 2013 California Building Code (CBC) recommends that the design of structures be based on spectral response accelerations in the direction of maximum horizontal response (5 percent damped) having a 1 percent probability of collapse in 50 years. Such spectral response accelerations represent the Risk-Targeted Maximum Considered Earthquake (MCE_R) ground motion. The horizontal peak ground acceleration (PGA) that corresponds to the MCE_R for the site was calculated as 0.38g using the United States Geological Survey (USGS, 2014) seismic design tool (web-based). The mapped and design PGA were estimated to be 0.38g and 0.27g, respectively, using the USGS (2013) calculator and the American Society of Civil Engineers (ASCE) 7-10 Standard.

5.6.2. Ground Surface Rupture

Based on our review of the referenced literature and our site reconnaissance, no active faults are known to cross the project vicinity. Therefore, the potential for ground rupture due to faulting at the site is considered low. However, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

5.6.3. Liquefaction and Seismically Induced Settlement

Liquefaction of cohesionless soils can be caused by strong vibratory motion due to earthquakes. Research and historical data indicate that loose granular soils and non-plastic silts that are saturated by a relatively shallow groundwater table are susceptible to liquefaction. Based on the relatively dense nature of the underlying granitic materials, it is our opinion that liquefaction and seismically induced settlement at the subject site are not design considerations.

5.6.4. Tsunamis

Tsunamis are long wavelength seismic sea waves (long compared to the ocean depth) generated by sudden movements of the ocean bottom during submarine earthquakes, landslides, or volcanic activity. Based on the inland location and elevation of the site, the potential for a tsunami is not a design consideration.

5.7. Landsliding

Based on our review of published geologic literature and aerial photographs and our subsurface evaluation, no landslides or related features underlie or are adjacent to the subject site.

6. SEISMIC DESIGN PARAMETERS

Design of the proposed improvements should be performed in accordance with the requirements of governing jurisdictions and applicable building codes. Table 3 presents the seismic design parameters for the site in accordance with the CBC (2013) guidelines and adjusted MCE spectral response acceleration parameters (USGS, 2014).

Table 3 – Seismic Design Factors

Factors	Values
Site Class	B
Site Coefficient, F_a	1.000
Site Coefficient, F_v	1.000
Mapped Short Period Spectral Acceleration, S_S	1.020g
Mapped One-Second Period Spectral Acceleration, S_1	0.4g
Short Period Spectral Acceleration Adjusted For Site Class, S_{MS}	1.020g
One-Second Period Spectral Acceleration Adjusted For Site Class, S_{M1}	0.4g
Design Short Period Spectral Acceleration, S_{DS}	0.680g
Design One-Second Period Spectral Acceleration, S_{D1}	0.266g

7. CONCLUSIONS

Based on our review of the referenced background data, subsurface evaluation, and laboratory testing, it is our opinion that the proposed improvements to the T-Building are feasible from a geotechnical standpoint provided the recommendations presented in this report are incorporated into the design and construction of the project. In general, the following conclusions were made:

- The project site is underlain by fill and granitic bedrock. The granitic bedrock is considered suitable for support of foundations and structural fill. Although previously placed fill soils are competent, to mitigate cut/fill transition conditions, recommendations to deepen foundations to bear on competent granitic rock materials are presented herein.

- An allowable bearing capacity of 3,000 psf may be used if the foundations are founded on granitic rock.

- The geotechnical conditions encountered during this supplemental subsurface exploration are similar to those observed during our earlier evaluations (Ninyo & Moore, 2008, 2009a, 2009b, 2009c and 2010). Accordingly, the recommendations presented in the referenced geotechnical reports are considered valid and remain applicable to the project.

- Excavations in granitic rock are anticipated to encounter difficult ripping conditions and the use of rock breakers, a rock wheel, and/or blasting will be needed. This is particularly the case if utility trenches are to be installed. Excavation in granitic rock will produce oversize material which will require special handling.

- Based on the results of our soil corrosivity tests and Caltrans corrosion guidelines (2012), the site would not be classified as a corrosive site.

- Based on the findings from this report, the conclusions from our earlier evaluation (Ninyo & Moore, 2009c) are still considered applicable unless superseded herein.

8. RECOMMENDATIONS

Based on our understanding of the project, the following recommendations are provided for the design and construction of the proposed improvements to the T-Building at Palomar Community College. The proposed site improvements should be constructed in accordance with the requirements of the applicable governing agencies.

8.1. Earthwork

In general, earthwork should be performed in accordance with the recommendations presented in this report. The geotechnical consultant should be contacted for questions regarding the recommendations or guidelines presented herein.

8.1.1. Site Preparation

Site preparation should begin with the removal of asphalt, concrete, utility lines, vegetation, and other deleterious debris from areas to be graded. Tree stumps and roots should be removed to such a depth that organic material is generally not present. Clearing and grubbing should extend to the outside of the proposed excavation and fill areas. The debris and unsuitable material generated during clearing and grubbing should be removed from areas to be graded and disposed of at a legal dumpsite away from the project area.

8.1.2. Excavation Characteristics

Based on our field exploration and experience, we anticipate that excavations within the fill materials may be accomplished with heavy earthmoving equipment in good working condition. As noted, where excavations are planned in granitic rock, difficult ripping, the use of rock breakers, a rock wheel, and/or blasting should be anticipated.

8.1.3. Subgrade Preparation (Interior Slabs-on-Grade)

Prior to placement of the interior warehouse slabs-on-grade, the upper 12 inches of existing soil/bedrock should be scarified 12 inches, moisture conditioned, and recompacted to 95 percent relative compaction as evaluated by the ASTM International (ASTM) D 1557. The extent and depths of scarification should be evaluated by Ninyo & Moore's representative in the field based on the materials exposed.

8.1.4. Materials for Fill

In general, on-site earth materials that exhibit a low expansion potential (i.e., an expansion index [EI] of 50 or less based on ASTM D 4829) should be suitable for reuse as fill which are in provided they are in general compliance with the recommendations presented in this report. Fill material should not contain asphalt, rocks or lumps over approximately 6 inches, and not more than approximately 30 percent larger than ¾-inch. Excavations in granitic rock are anticipated to generate oversize materials which may not be suitable for reuse as fill without special handling. Larger fragments may be crushed into acceptably sized pieces or disposed of off site. Imported fill material, if needed for the project, should generally be granular soils with a very low to low expansion potential, with an organic content of less than approximately 3 percent by volume (or 1 percent by weight). Import material should also be non-corrosive in accordance with the Caltrans (2012) corrosion guidelines and ACI 318. Materials for use as fill should be evaluated by Ninyo & Moore's representative prior to filling or importing. To reduce the potential of importing contaminated materials to the site, prior to delivery, soil materials obtained from off-site sources should be sampled and tested in accordance with standard practice (Department of Toxic Substances Control [DTSC], 2001). Soils that exhibit a known risk to human health, the environment, or both, should not be imported to the site.

8.1.5. Compacted Fill

Prior to placement of compacted fill, the contractor should request an evaluation of the exposed ground surface by Ninyo & Moore. Unless otherwise recommended, the exposed ground surface should then be scarified to a depth of approximately 6 inches and watered or dried, as needed, to achieve moisture contents generally above the optimum moisture content. The scarified materials should then be compacted to a relative compaction of 90 percent as evaluated in accordance with the ASTM D 1557. The evaluation of compaction by the geotechnical consultant should not be considered to preclude any requirements for observation or approval by governing agencies. It is the contractor's responsibility to notify the geotechnical consultant and the appropriate governing agency when project areas are ready for observation, and to provide reasonable time for that review.

Fill materials should be moisture conditioned to generally above the laboratory optimum moisture content prior to placement. The optimum moisture content will vary with material type and other factors. Moisture conditioning of fill soils should be generally consistent within the soil mass.

Prior to placement of additional compacted fill material following a delay in the grading operations, the exposed surface of previously compacted fill should be prepared to receive fill. Preparation may include scarification, moisture conditioning, and recompaction.

Compacted fill should be placed in horizontal lifts of approximately 8 inches in loose thickness. Prior to compaction, each lift should be watered or dried as needed to achieve a moisture content generally above the laboratory optimum, mixed, and then compacted by mechanical methods, to a relative compaction of 90 percent as evaluated by ASTM D 1557. Successive lifts should be treated in a like manner until the desired finished grades are achieved. The upper 12 inches of subgrade soils beneath pavements and the interior warehouse slabs-on-grade should be compacted to 95 percent relative compaction as evaluated by ASTM D1557.

8.1.6. Temporary Excavations, Braced Excavations, and Shoring

For temporary excavations, we recommend that the following Occupational Safety and Health Administration (OSHA) soil classifications be used:

Fill	*Type C*
Granitic Materials	*Type B*

Upon making the excavations, the soil classifications and excavation performance should be evaluated in the field by the geotechnical consultant in accordance with the OSHA regulations. Temporary excavations should be constructed in accordance with OSHA recommendations. For trench or other excavations, OSHA requirements regarding personnel safety should be met using appropriate shoring (including trench boxes) or by laying back the slopes to no steeper than 1.5:1 in fill materials and 1:1 for granitic bedrock materials. Temporary excavations that encounter seepage may be shored or stabilized by placing sandbags or gravel along the base of the seepage zone. Excavations encountering seepage should be evaluated on a case-by-case basis. On-site safety of personnel is the responsibility of the contractor.

8.1.7. Utility Trench Backfill

We recommend that trench backfill materials be in conformance with the "Greenbook" (Standard Specifications for Public Works) specifications for structure backfill. Granitic rock excavated for utility trenches may contain oversize materials and may not be suitable from reuse as fill or backfill without special handling. Soils classified as silts or clays should not be used for backfill in the pipe zone. Fill should be moisture-conditioned to generally above the laboratory optimum. Trench zone backfill should be compacted to a relative compaction of 90 percent as evaluated by ASTM D 1557 except for the upper 12 inches of the backfill beneath pavements and interior warehouse slabs-on-grade should be compacted to a relative compaction of 95 percent as evaluated by ASTM D 1557. Lift thickness for backfill will depend on the type of compaction equipment utilized, but fill should generally be placed in lifts not exceeding 8 inches in loose thickness. Special care should be exercised to avoid damaging the pipe during compaction of the backfill.

8.2. Foundations

We recommend that the proposed warehouse buildings be supported on shallow, spread footings bearing on compacted fill materials. Foundations should be designed in accordance with structural considerations and the following recommendations. In addition, requirements of the appropriate governing jurisdictions and applicable building codes should be considered in the design of the structures.

8.2.1. Shallow Footings

Shallow, spread or continuous footings, founded in competent granitic bedrock materials may be designed using an allowable bearing capacity of 3,000 pounds per square foot (psf). These allowable bearing capacities may be increased by one-third when considering loads of short duration such as wind or seismic forces. Spread footings should be founded 18 inches below the lowest adjacent grade. Continuous footings should have a width of 15 inches and isolated footings should be 24 inches in width. The spread footings should be reinforced in accordance with the recommendations of the project structural engineer. If required by the topography of the site and due to existing fill thickness, portions of the foundations are anticipated to be deepened to bear on granitic bedrock. For this alternative, footings may bear on a controlled low strength material (CLSM) backfill with a compressive strength of 500 pounds per square inch (psi) according to "Greenbook," Section 201-6 specifications. CLSM backfill should extend to competent granitic bedrock.

8.2.2. Lateral Resistance

For resistance of footings to lateral loads, we recommend an allowable passive pressure of 250 psf per foot of depth be used with a value of up to 2,500 psf. This value assumes that the ground is horizontal for a distance of 10 feet, or three times the height generating the passive pressure, whichever is greater. We recommend that the upper 1 foot of soil not protected by pavement or a concrete slab be neglected when calculating passive resistance.

For frictional resistance to lateral loads, we recommend a coefficient of friction of 0.35 be used between soil and concrete. The allowable lateral resistance can be taken as the sum of the frictional resistance and passive resistance provided the passive resistance does not exceed one-half of the total allowable resistance.

8.2.3. Static Settlement

We estimate that the proposed structures, designed and constructed as recommended herein, will undergo total settlement on the order of 1/2 inch. Differential settlement on the order of 1/2 inch over a horizontal span of 40 feet should be expected.

8.3. Slabs-on-Grade

We recommend that the warehouse, slab-on-grade floors, underlain by compacted fill materials of generally very low to low expansion potential, be 6 inches in thickness and be reinforced with No. 3 reinforcing bars spaced 18 inches on center each way. The reinforcing bars should be placed near the middle of the slab. As a means to help reduce shrinkage cracks, we recommend that the slabs be provided with expansion joints at intervals of approximately 12 feet each way. The slab reinforcement and expansion joint spacing should be designed by the project structural engineer.

If moisture sensitive floor coverings are to be used, we recommend that slabs be underlain by a vapor retarder and capillary break system consisting of a 10-mil polyethylene (or equivalent) membrane placed over 4 inches of medium to coarse, clean sand or pea gravel and overlain by an additional 2 inches of sand to help protect the membrane from puncture during placement and to aid in concrete curing. The exposed subgrade should be moistened just prior to the placement of concrete.

8.4. Concrete Flatwork

Exterior concrete flatwork should be 4 inches in thickness and should be reinforced with No. 3 reinforcing bars placed at 24 inches on-center both ways. No vapor retarder is needed for exterior flatwork. To reduce the potential manifestation of distress to exterior concrete flatwork

due to movement of the underlying soil, we recommend that such flatwork be installed with crack-control joints at appropriate spacing as designed by the structural engineer. Exterior slabs should be underlain by 4 inches of clean sand. The subgrade soils should be scarified to a depth of 8 inches, moisture conditioned to generally above the laboratory optimum moisture content, and compacted to a relative compaction of 90 percent as evaluated by ASTM D 1557. Positive drainage should be established and maintained adjacent to flatwork.

8.5. Corrosion

Laboratory testing was performed on a representative sample of the on-site earth materials to evaluate pH and electrical resistivity, as well as chloride and sulfate contents. The pH and electrical resistivity tests were performed in accordance with California Test (CT) 643 and the sulfate and chloride content tests were performed in accordance with CT 417 and CT 422, respectively. These laboratory test results are presented in Appendix B.

The results of the corrosivity testing indicated an electrical resistivity of 6,500 ohm-cm, a soil pH of 8.9, a chloride content of 75 parts per million (ppm) and a sulfate content of 0.003 percent (i.e., 30 ppm). Based on the Caltrans corrosion (2012) criteria and ACI 318, the on-site soils would not be classified as corrosive, which is defined as soils with more than 500 ppm chlorides, more than 0.1 percent sulfates, or a pH less than 5.5. However, soil corrosivity tests from a previous study for the student union building addition indicated a chloride content of 633 ppm which would be considered corrosive. We recommend that the corrosivity of site soils be further evaluated by a corrosion engineer.

8.6. Concrete

Concrete in contact with soil or water that contains high concentrations of soluble sulfates can be subject to chemical deterioration. Laboratory testing indicated a sulfate content of 0.003 percent for the tested sample, which is considered to represent a negligible potential for sulfate attack (ACI, 2010). Although the results of the sulfate tests were not significantly high, due to the variability in the on-site soils and the potential future use of reclaimed water at the site, we recommend that Type V cement be used for concrete structures in contact with

soil or the formational materials. In addition, we recommend a water-to-cement ratio of no more than 0.45. We also recommend that 3 inches of concrete cover be provided over reinforcing steel for cast-in-place structures in contact with the on-site earth materials.

In order to reduce the potential for shrinkage cracks in the concrete during curing, we recommend that for slabs-on-grade, the concrete be placed with a slump in accordance with Table 5.2.1 of Section 302.1R of *The Manual of Concrete Practice*, "Floor and Slab Construction," or Table 2.2 of Section 332R in *The Manual of Concrete Practice*, "Guide to Residential Cast-in-Place Concrete Construction." If a higher slump is needed for screening and leveling, a super plasticizer is recommended to achieve the higher slump without changing the water-to-cement ratio. The slump should be checked periodically at the site prior to concrete placement. We also recommend that crack control joints be provided in slabs in accordance with the recommendations of the structural engineer to reduce the potential for distress due to minor soil movement and concrete shrinkage. We further recommend that concrete cover over reinforcing steel for slabs-on-grade and foundations be in accordance with CBC 1907.7. The structural engineer should be consulted for additional concrete specifications.

8.7. Pre-Construction Conference

We recommend that a pre-construction meeting be held prior to commencement of grading. The owner or his representative, the agency representatives, the architect, the civil engineer, Ninyo & Moore, and the contractor should attend to discuss the plans, the project, and the proposed construction schedule.

8.8. Plan Review and Construction Observation

The conclusions and recommendations presented in this report are based on analysis of observed conditions in widely spaced exploratory borings and test pits. If conditions are found to vary from those described in this report, Ninyo & Moore should be notified, and additional recommendations will be provided upon request. Ninyo & Moore should review the final project drawings and specifications prior to the commencement of construction. Ninyo & Moore should perform the needed observation and testing services during construction operations.

The recommendations provided in this report are based on the assumption that Ninyo & Moore will provide geotechnical observation and testing services during construction. In the event that it is decided not to utilize the services of Ninyo & Moore during construction, we request that the selected consultant provide the client with a letter (with a copy to Ninyo & Moore) indicating that they fully understand Ninyo & Moore's recommendations, and that they are in full agreement with the design parameters and recommendations contained in this report. Construction of proposed improvements should be performed by qualified subcontractors utilizing appropriate techniques and construction materials.

9. LIMITATIONS

The field evaluation, laboratory testing, and geotechnical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Please also note that our evaluation was limited to assessment of the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report is intended for design purposes only. It does not provide sufficient data to prepare an accurate bid by contractors. It is suggested that the bidders and their geotechnical consultant perform an independent evaluation of the subsurface conditions in the project areas. The independent

evaluations may include, but not be limited to, review of other geotechnical reports prepared for the adjacent areas, site reconnaissance, and additional exploration and laboratory testing.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified, and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no controls.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

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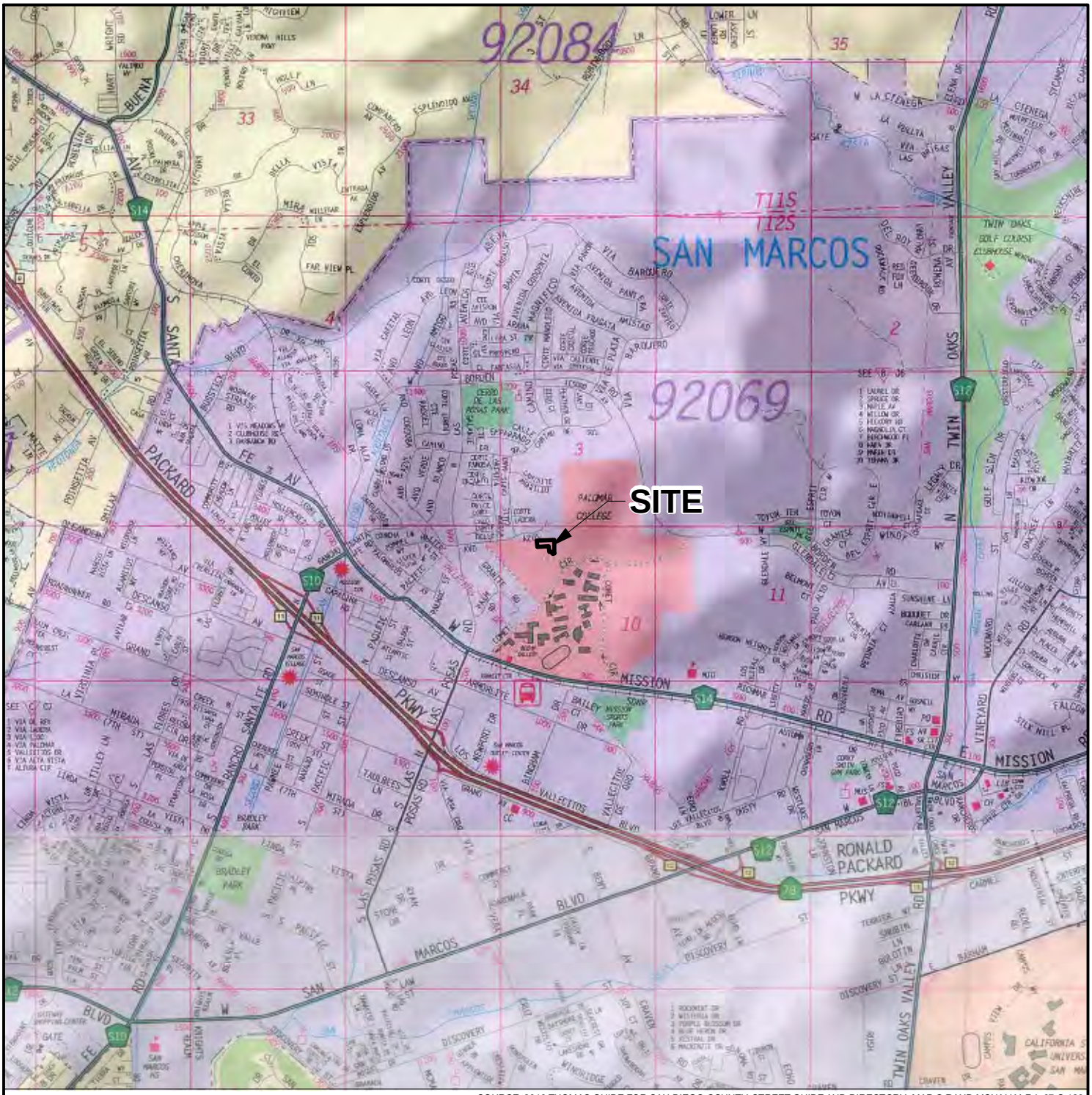
Source	Date	Flight	Numbers	Scale
USDA	March 31, 1953	AXN-4M	25 and 26	1:20,000



SOURCE: 2013 THOMAS GUIDE FOR SAN DIEGO COUNTY, STREET GUIDE AND DIRECTORY; MAP © RAND MCNALLY, R.L.07-S-129

SCALE IN FEET

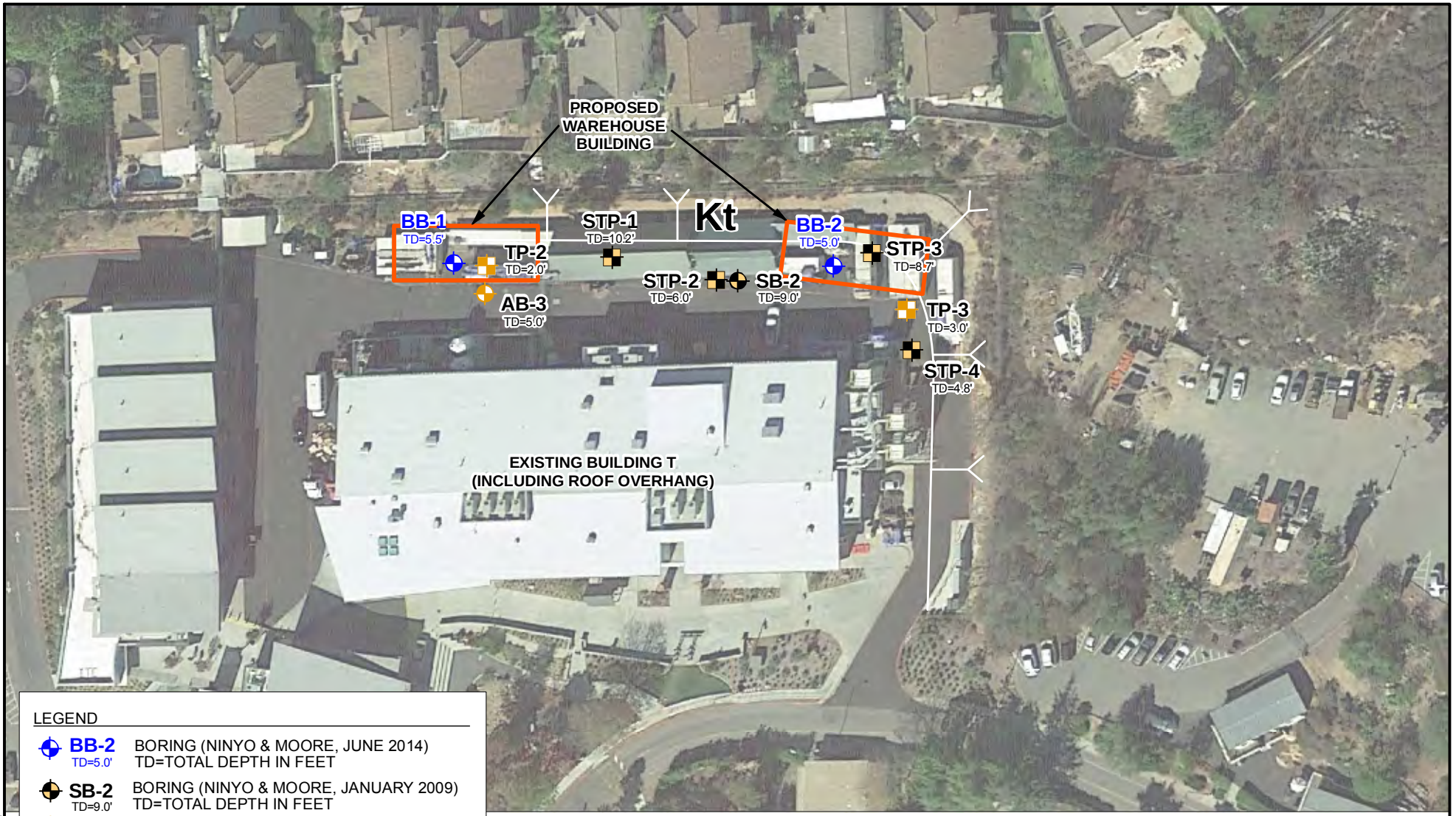
0 2,200 4,400

N

NOTE: ALL DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

Ninyo & Moore	SITE LOCATION	FIGURE
PROJECT NO. 106088027 / DATE 7/14	PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING PALOMAR COLLEGE SAN MARCOS, CALIFORNIA	1

Figs 7.14/1_106088027_SL.mxd AOB



SOURCE: AERIAL IMAGERY - GOOGLE EARTH, NOV 2013

LEGEND

BB-2 TD=5.0'	BORING (NINYO & MOORE, JUNE 2014) TD=TOTAL DEPTH IN FEET
SB-2 TD=9.0'	BORING (NINYO & MOORE, JANUARY 2009) TD=TOTAL DEPTH IN FEET
AB-3 TD=5.0'	BORING (NINYO & MOORE, JUNE 2010) TD=TOTAL DEPTH IN FEET
STP-4 TD=4.8'	TEST PIT (NINYO & MOORE, OCTOBER 2009) TD=TOTAL DEPTH IN FEET
TP-3 TD=3.0'	TEST PIT (NINYO & MOORE, JANUARY 2009) TD=TOTAL DEPTH IN FEET
Kt	TONALITE

N

APPROXIMATE SCALE

0 80 160 FEET

NOTE: ALL DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

Ninyo & Moore

PROJECT NO.	DATE
106088027	7/14

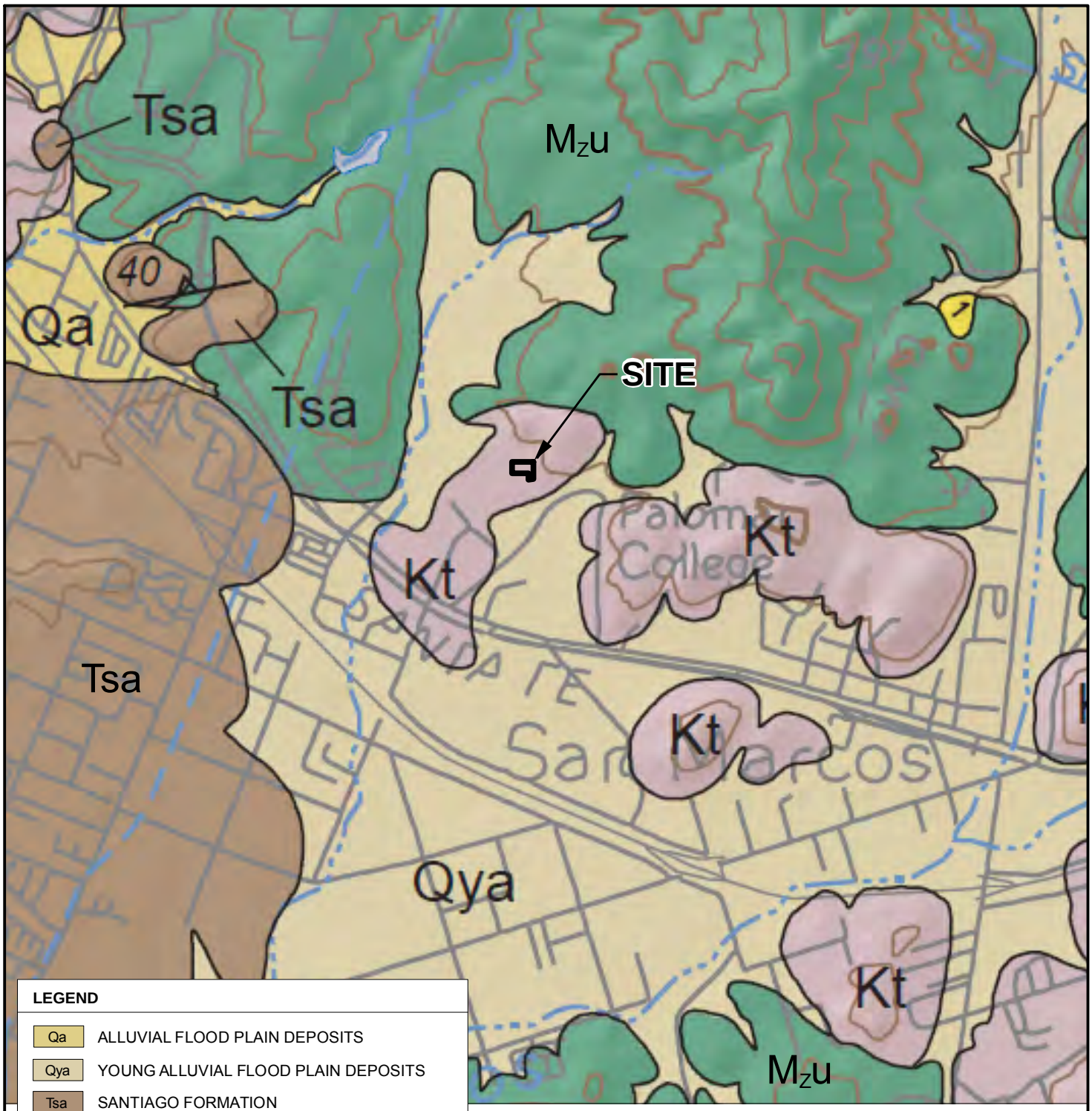
GEOTECHNICAL MAP

PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING
PALOMAR COLLEGE
SAN MARCOS, CALIFORNIA

FIGURE

2

2_106088027_GM.mxd AOB



LEGEND

Qa	ALLUVIAL FLOOD PLAIN DEPOSITS
Qya	YOUNG ALLUVIAL FLOOD PLAIN DEPOSITS
Tsa	SANTIAGO FORMATION
Kt	TONALITE UNDIVIDED
Mzu	METASEDIMENTARY AND METAVOLCANIC ROCKS UNDIVIDED
Qls?	LANDSLIDE - ARROWS INDICATE PRINCIPAL DIRECTION OF MOVEMENT, QUERIED WHERE EXISTENCE IS QUESTIONABLE
40	STRIKE AND DIP OF BEDS, INCLINED

SOURCE: KENNEDY, M.P., AND TAN, S.S., 2007, GEOLOGIC MAP OF THE OCEANSIDE 30' X 60' QUADRANGLE, CALIFORNIA

N

SCALE IN FEET

0 1,800 3,600

NOTES: ALL DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

3_106088027_G.mxd AOB

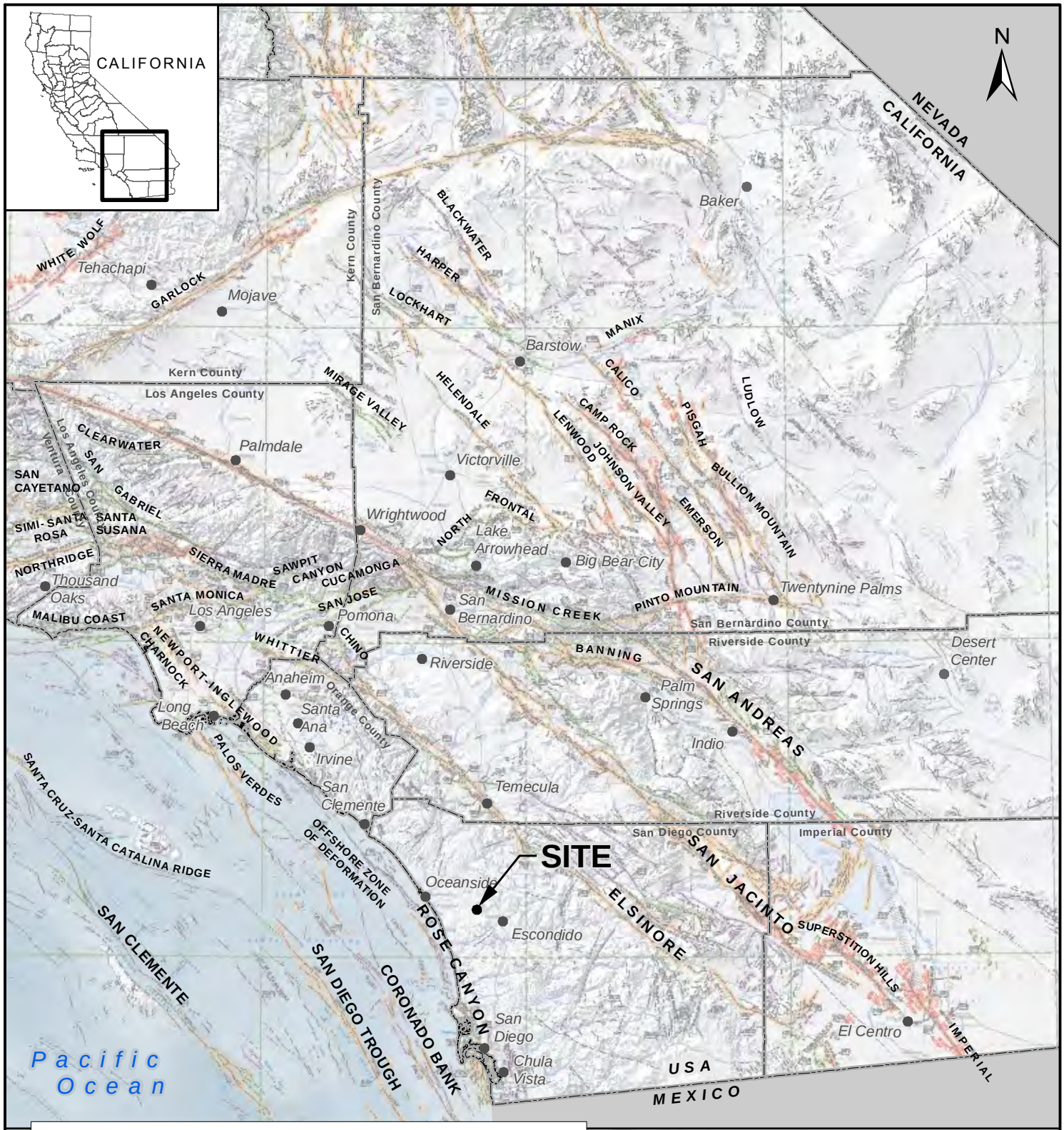
Ninyo & Moore

GEOLOGY

FIGURE 3

PROJECT NO.	DATE
106088027	7/14

PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING
PALOMAR COLLEGE
SAN MARCOS, CALIFORNIA



LEGEND

CALIFORNIA FAULT ACTIVITY

- HISTORICALLY ACTIVE
- HOLOCENE ACTIVE
- LATE QUATERNARY (POTENTIALLY ACTIVE)
- QUATERNARY (POTENTIALLY ACTIVE)
- STATE/COUNTY BOUNDARY

SOURCE: JENNINGS, C.W., AND BRYANT, W.A., 2010, FAULT ACTIVITY MAP OF CALIFORNIA, CALIFORNIA GEOLOGICAL SURVEY.

SCALE IN MILES

0 30 60

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

FAULT LOCATIONS

FIGURE 4

PROJECT NO.	DATE
106088027	7/14

PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING
PALOMAR COLLEGE
SAN MARCOS, CALIFORNIA

4_106088027_F.mxd AOB

APPENDIX A

EXCAVATION LOGS

Field Procedure for the Collection of Disturbed Samples

Disturbed soil samples were obtained in the field using the following methods.

Bulk Samples

Bulk samples of representative earth materials were obtained from the exploratory excavations. The samples were bagged and transported to the laboratory for testing.

The Standard Penetration Test (SPT) Spoon

Disturbed drive samples of earth materials were obtained by means of a Standard Penetration Test spoon sampler. The sampler is composed of a split barrel with an external diameter of 2 inches and an unlined internal diameter of 1-3/8 inches. The spoon was driven into the ground 12 to 18 inches with a 140-pound hammer free-falling from a height of 30 inches in general accordance with ASTM D 1586. The blow counts were recorded for every 6 inches of penetration; the blow counts reported on the logs are those for the last 12 inches of penetration. Soil samples were observed and removed from the spoon, bagged, sealed and transported to the laboratory for testing.

Field Procedure for the Collection of Relatively Undisturbed Samples

Relatively undisturbed soil samples were obtained in the field using the following method.

The Modified Split-Barrel Drive Sampler

The sampler, with an external diameter of 3.0 inches, was lined with 1-inch long, thin brass rings with inside diameters of approximately 2.4 inches. The sample barrel was driven into the ground with the weight of a 140-pound hammer, in general accordance with ASTM D 3550. The driving weight was permitted to fall freely. The approximate length of the fall, the weight of the hammer, and the number of blows per foot of driving are presented on the boring logs as an index to the relative resistance of the materials sampled. The samples were removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

BORING LOG EXPLANATION SHEET

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	
0	■							Bulk sample.
		■						Modified split-barrel drive sampler.
		⊠						2-inch inner diameter split-barrel drive sampler.
		⊠						No recovery with modified split-barrel drive sampler, or 2-inch inner diameter split-barrel drive sampler.
		▮						Sample retained by others.
5		◪						Standard Penetration Test (SPT).
		⁄						No recovery with a SPT.
		▯	XX/XX					Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.
		⁄						No recovery with Shelby tube sampler.
		▯						Continuous Push Sample.
10				⚲				Seepage.
				▽				Groundwater encountered during drilling.
				▼				Groundwater measured after drilling.
						▨	SM	MAJOR MATERIAL TYPE (SOIL): Solid line denotes unit change.
						▨	CL	Dashed line denotes material change.
15						▨		Attitudes: Strike/Dip b: Bedding c: Contact j: Joint f: Fracture F: Fault cs: Clay Seam s: Shear bss: Basal Slide Surface sf: Shear Fracture sz: Shear Zone sbs: Shear Bedding Surface
								The total depth line is a solid line that is drawn at the bottom of the boring.
20								

Ninyo & Moore

BORING LOG

Explanation of Boring Log Symbols

PROJECT NO.	DATE	FIGURE

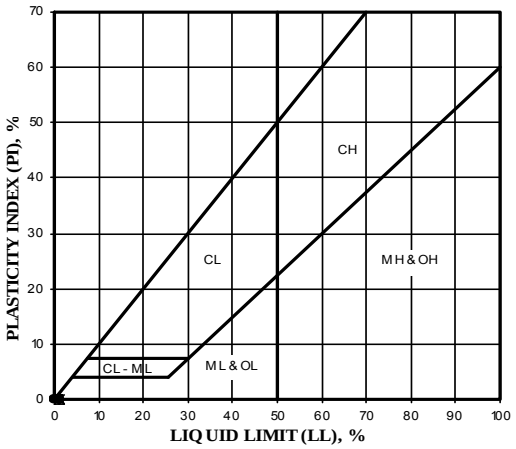
U.S.C.S. METHOD OF SOIL CLASSIFICATION

MAJOR DIVISIONS		SYMBOL	TYPICAL NAMES
COARSE-GRAINED SOILS (More than 1/2 of soil > No. 200 Sieve Size)	GRAVELS (More than 1/2 of coarse fraction > No. 4 sieve size	GW	Well graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (More than 1/2 of coarse fraction < No. 4 sieve size	SW	Well graded sands or gravelly sands, little or no fines
		SP	Poorly graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (More than 1/2 of soil < No. 200 sieve size)	SILTS & CLAYS Liquid Limit <50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	SILTS & CLAYS Liquid Limit >50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silty clays, organic silts
HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils

GRAIN SIZE CHART

CLASSIFICATION	RANGE OF GRAIN	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS	Above 12"	Above 305
COBBLES	12" to 3"	306 to 76.2
GRAVEL	3" to No. 4	76.2 to 4.76
Coarse	3" to 3/4"	76.2 to 19.1
Fine	3/4" to No. 4	19.1 to 4.76
SAND	No. 4 to No. 200	4.76 to 0.075
Coarse	No. 4 to No. 10	4.76 to 2.00
Medium	No. 10 to No. 40	2.00 to 0.420
Fine	No. 40 to No. 200	0.420 to 0.075
SILT & CLAY	Below No. 200	Below 0.075

PLASTICITY CHART



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U.S.C.S. METHOD OF SOIL CLASSIFICATION

DATE DRILLED 6/05/14 BORING NO. BB-1

GROUND ELEVATION 615' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Scott's Drilling)

DRIVE WEIGHT 140 lbs. (Cathead) DROP 30"

SAMPLED BY CKV LOGGED BY CKV REVIEWED BY RDH

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							ASPHALT CONCRETE:
						GW	Approximately 3.5 inches thick.
						SM	BASE:
							Brown, moist, medium dense to dense, sandy GRAVEL.
							FILL:
							Light brown, moist, medium dense to dense, silty fine to medium SAND.
		50/3"					GRANITIC ROCK:
							Brown and gray, moist, coarse-grained GRANITIC ROCK; slightly weathered.
5		50/1"					Hard; fresh.
							Total Depth = 5.5 feet. (Refusal)
							Groundwater not encountered during drilling.
							Backfilled and capped with black-dyed rapid set concrete shortly after drilling on 6/05/14.
							Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
10							
15							
20							

Ninyo & Moore

BORING LOG

PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING
PALOMAR COLLEGE, SAN MARCOS, CALIFORNIA

PROJECT NO.	DATE	FIGURE
106088027	7/14	A-1

DATE DRILLED 6/05/14 BORING NO. BB-2

GROUND ELEVATION 615' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Diameter Hollow Stem Auger (Scott's Drilling)

DRIVE WEIGHT 140 lbs. (Cathead) DROP 30"

SAMPLED BY CKV LOGGED BY CKV REVIEWED BY RDH

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0								ASPHALT CONCRETE: Approximately 3.5 inches thick.
							GW	BASE: Brown, moist, medium dense to dense, sandy GRAVEL.
							SM	FILL: Dark brown, moist, medium dense to dense, silty fine to coarse SAND; with little gravel; trace clay.
		⊠	50/2"					GRANITIC ROCK: Brown and gray, moist, coarse-grained GRANITIC ROCK; slightly weathered.
5								Hard; fresh.
								Total Depth = 5 feet. (Refusal)
								Groundwater not encountered during drilling.
								Backfilled and capped with black-dyed rapid set concrete shortly after drilling on 6/05/14.
								Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
10								
15								
20								

Ninyo & Moore

BORING LOG

PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING
PALOMAR COLLEGE, SAN MARCOS, CALIFORNIA

PROJECT NO.	DATE	FIGURE
106088027	7/14	A-1

DATE DRILLED 9/25/09 BORING NO. SB-2

GROUND ELEVATION 615' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 6" Diameter Hollow Stem Auger

DRIVE WEIGHT 140 lbs. (Auto-Trip) DROP 30"

SAMPLED BY MAH LOGGED BY MAH REVIEWED BY RI

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							CONCRETE: Approximately 3-1/2 to 4 inches thick.
						SM	FILL: Brown, moist, medium dense, silty fine to coarse SAND.
		27	6.9	85.7			TOPSOIL: Mottled yellowish brown and reddish brown, damp, medium dense, silty fine to medium SAND; trace coarse sand and fine gravel.
5		50/6"	9.5	104.9			GRANITIC ROCK: Brown, moist, dense, GRANITIC ROCK; weathered.
		50/2"					Less weathered. Refusal to further drilling.
10							Total Depth = 9 feet. Groundwater not encountered during drilling. Backfilled, sealed, and capped with concrete shortly after drilling on 9/25/09. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
15							
20							

Ninyo & Moore

BORING LOG

ADDITIONS TO IT BUILDING - PALOMAR COMMUNITY COLLEGE
SAN MARCO, CALIFORNIA

PROJECT NO.	DATE	FIGURE
106088020	10/09	A-2

DATE DRILLED 6/18/10 BORING NO. AB-3

GROUND ELEVATION 624' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 6" Diameter Hollow Stem Auger (Mole-Rig) (Pacific)

DRIVE WEIGHT 140 lbs. (Cathead) DROP 30"

SAMPLED BY BTM LOGGED BY BTM REVIEWED BY RI

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							ASPHALT CONCRETE:
						GM	Approximately 3.5 inches thick.
						SM	BASE:
							Brown, damp to moist, medium dense, silty sandy GRAVEL; approximately 4 inches thick.
							FILL:
							Reddish brown, moist, medium dense, silty SAND; scattered gravel.
							GRANITIC ROCK:
							Light brown, damp, weathered GRANITIC ROCK.
		50/4"					
5							Total Depth = 5 feet.
							Groundwater not encountered during drilling.
							Backfilled with soil and black dyed concrete shortly after drilling on 6/18/10.
							Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.
10							
15							
20							

Ninyo & Moore

BORING LOG

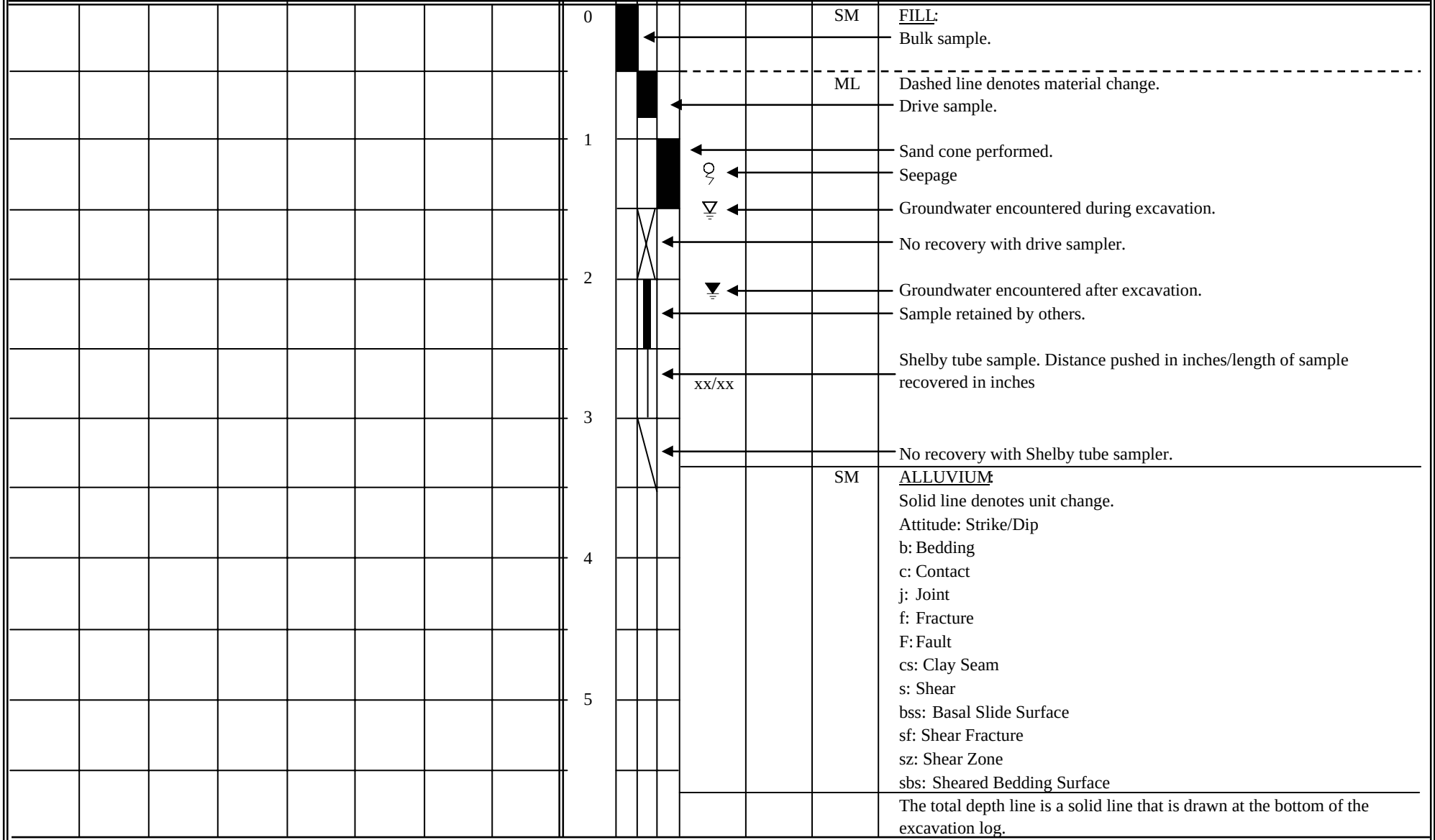
PROPOSED BUILDING "T" IMPROVEMENTS
PALOMAR COMMUNITY COLLEGE, SAN MARCOS, CALIFORNIA

PROJECT NO.	DATE	FIGURE
106088027	6/10	A-3

Ninyo & Moore

Explanation of Test Pit, Core, Trench and Hand Auger Log Symbols

PROJECT NO.	DATE



EXCAVATION LOG EXPLANATION SHEET

FILL:

Bulk sample.

Dashed line denotes material change.

Drive sample.

Sand cone performed.

Seepage

Groundwater encountered during excavation.

No recovery with drive sampler.

Groundwater encountered after excavation.

Sample retained by others.

Shelby tube sample. Distance pushed in inches/length of sample recovered in inches

No recovery with Shelby tube sampler.

ALLUVIUM:

Solid line denotes unit change.

Attitude: Strike/Dip

b: Bedding

c: Contact

j: Joint

f: Fracture

F: Fault

cs: Clay Seam

s: Shear

bss: Basal Slide Surface

sf: Shear Fracture

sz: Shear Zone

sbs: Sheared Bedding Surface

The total depth line is a solid line that is drawn at the bottom of the excavation log.

SCALE: 1 inch = 1 foot

FIGURE

Ninyo & Moore

TEST PIT LOG

ALTERNATE LOCATION FOR IT BUILDING
PALOMAR COMMUNITY COLLEGE
SAN MARCOS, CALIFORNIA

PROJECT NO.	DATE
106088019	1/09

DATE EXCAVATED 12/23/08 TEST PIT NO. TP-2

GROUND ELEVATION 618' ± (MSL) LOGGED BY BTM

METHOD OF EXCAVATION Manual

LOCATION Slope North of the Existing IT Building

DEPTH (FEET)	SAMPLES: Bulk	SAMPLES: Driven	SAMPLES: Sand Cone	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION
0							GRANITIC ROCK: Light brown, damp, GRANITIC ROCK; weathered; scattered roots.
1							
2							Total Depth = 2 feet. Groundwater not encountered. Backfilled on 12/23/08.
3							
4							
5							

SCALE = 1 in./1 ft.

FIGURE A-10

Ninyo & Moore

TEST PIT LOG

ALTERNATE LOCATION FOR IT BUILDING
PALOMAR COMMUNITY COLLEGE
SAN MARCOS, CALIFORNIA

PROJECT NO.	DATE
106088019	1/09

DATE EXCAVATED 12/23/08 TEST PIT NO. TP-3

GROUND ELEVATION 618' ± (MSL) LOGGED BY BTM

METHOD OF EXCAVATION Manual

LOCATION Slope North East of the Existing IT Building

DEPTH (FEET)	SAMPLES: Bulk	SAMPLES: Driven	SAMPLES: Sand Cone	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION
0						SM	FILL: Light brown, damp, medium dense, silty SAND; scattered gravel and cobbles.
1							
2							
3							GRANITIC ROCK: Light brown, damp, GRANITIC ROCK; weathered; hard rock.
4							Total Depth = 3 feet. Groundwater not encountered. Backfilled on 12/23/08.
5							

SCALE = 1 in./1 ft.

FIGURE A-11

Ninyo & Moore

TEST PIT LOG

ADDITIONS TO IT BUILDING
PALOMAR COMMUNITY COLLEGE
SAN MARCOS, CALIFORNIA

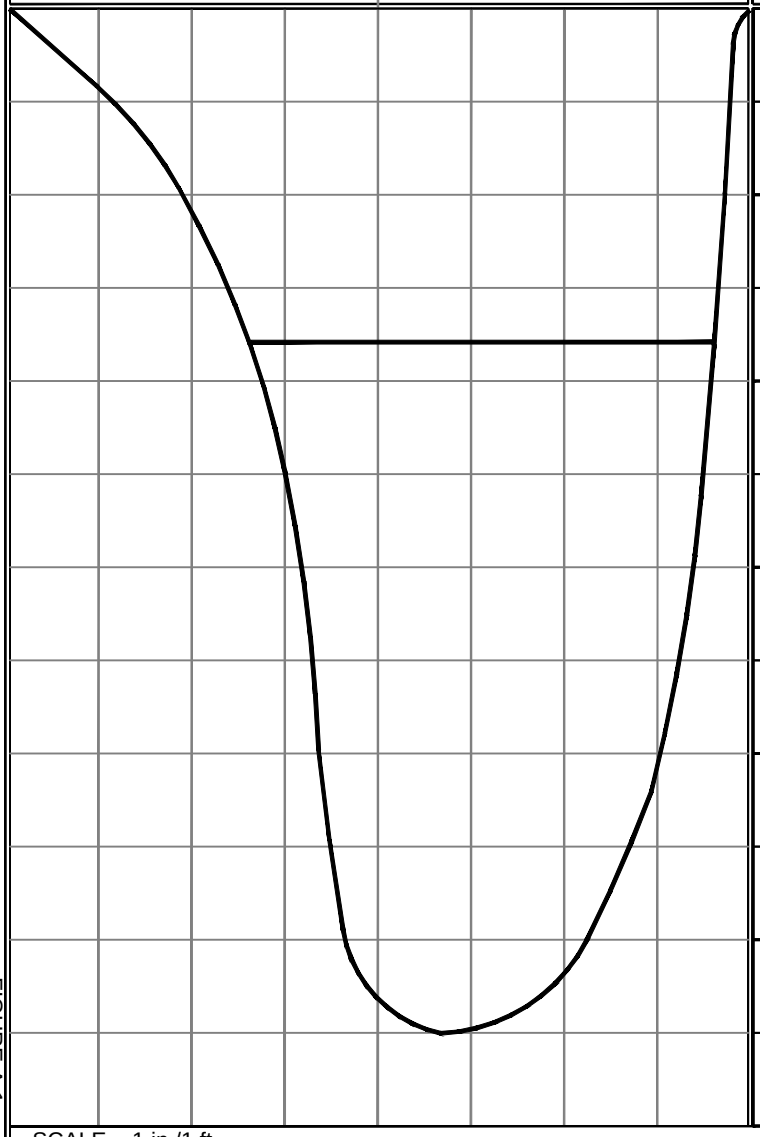
PROJECT NO.	DATE
106088020	9/09

DATE EXCAVATED 9/18/09 TEST PIT NO. STP-1

GROUND ELEVATION 620' Ñ (MSL) LOGGED BY MAH

METHOD OF EXCAVATION Backhoe 24"

LOCATION Behind IT Building (West Slope)



DEPTH (FEET)	SAMPLES: Bulk	SAMPLES: Driven	SAMPLES: Sand Cone	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION
0						SM	TOPSOIL: Light brown, dry, loose to medium dense, silty SAND with gravel; many roots.
1							
							Medium dense.
2		■					GRANITIC ROCK: Brown, damp, weathered GRANITIC ROCK.
3		■					
4							
5							Less weathered. Refusal on bedrock.
6							Total Depth = 5.5 feet. No groundwater encountered. Backfilled on 9/18/09.

SCALE = 1 in./1 ft.

FIGURE A-1

Ninyo & Moore

TEST PIT LOG

ADDITIONS TO IT BUILDING
PALOMAR COMMUNITY COLLEGE
SAN MARCOS, CALIFORNIA

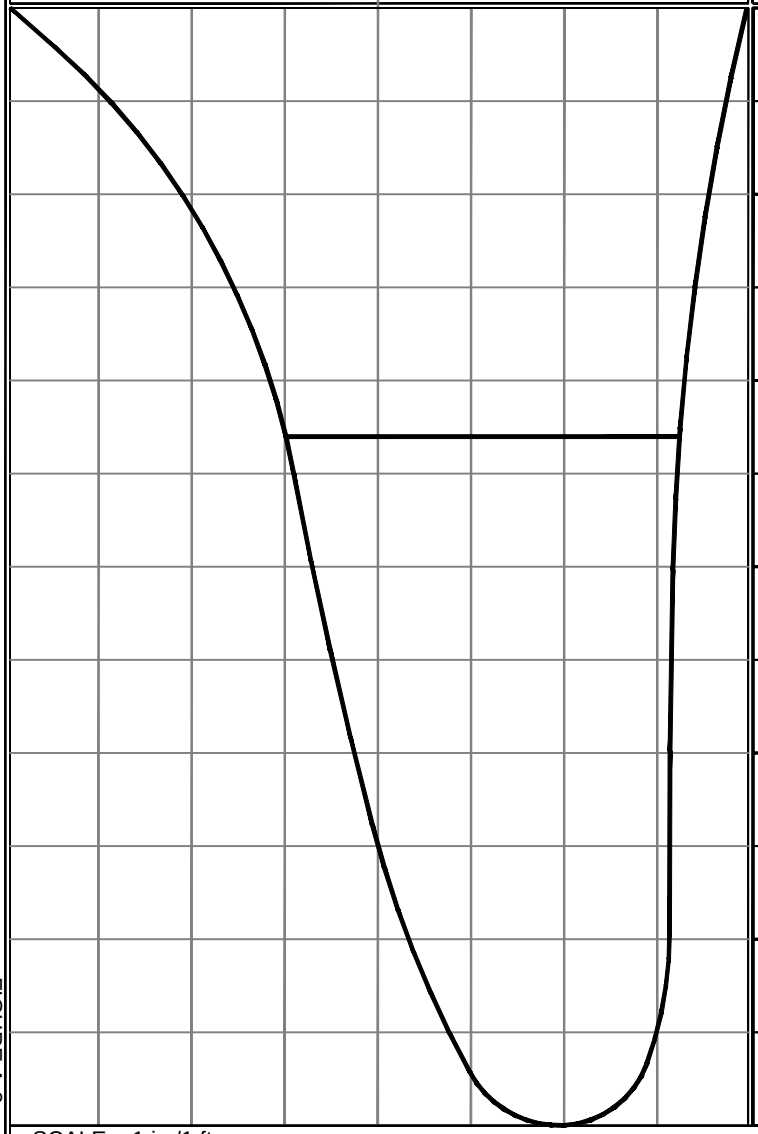
PROJECT NO.	DATE
106088020	9/09

DATE EXCAVATED 9/18/09 TEST PIT NO. STP-2

GROUND ELEVATION 624' Ñ (MSL) LOGGED BY MAH

METHOD OF EXCAVATION Backhoe 24"

LOCATION Behind IT Building (Mid Slope)



DEPTH (FEET)	SAMPLES: Bulk	SAMPLES: Driven	SAMPLES: Sand Cone	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION
0						SM	TOPSOIL: Brown, dry to damp, medium dense, silty SAND with gravel and few cobbles of weathered granite; many roots and organics.
3	■						GRANITIC ROCK: Brown, damp, weathered GRANITIC ROCK.
4							Less weathered.
5							Refusal on bedrock.
6							Total Depth = 6 feet. No groundwater encountered. Backfilled on 9/18/09.

SCALE = 1 in./1 ft.

FIGURE A-2

Ninyo & Moore

TEST PIT LOG

ADDITIONS TO IT BUILDING
PALOMAR COMMUNITY COLLEGE
SAN MARCOS, CALIFORNIA

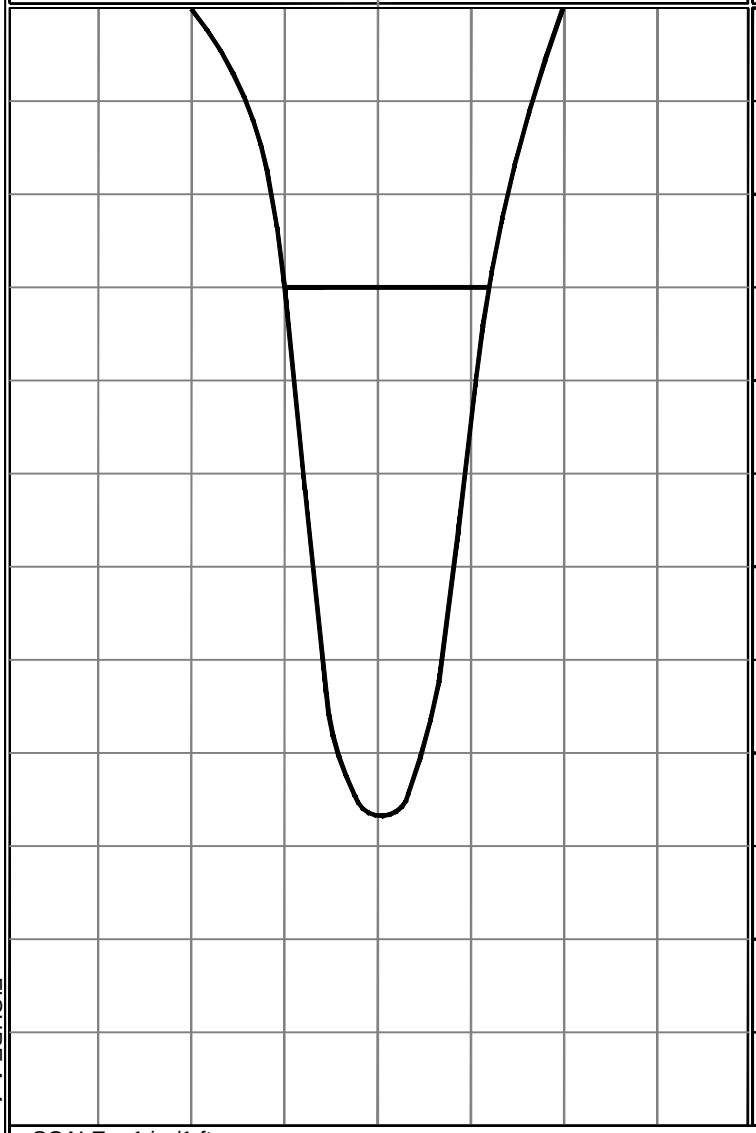
PROJECT NO.	DATE
106088020	9/09

DATE EXCAVATED 9/18/09 TEST PIT NO. STP-3

GROUND ELEVATION 628' Ñ (MSL) LOGGED BY MAH

METHOD OF EXCAVATION Backhoe 24"

LOCATION Behind IT Building (Top Corner Slope)



DEPTH (FEET)	SAMPLES: Bulk	SAMPLES: Driven	SAMPLES: Sand Cone	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION
0						SM	TOPSOIL: Light reddish brown, dry, loose to medium dense, silty SAND with gravel. Damp; cobbles up to approximately 8 inches.
2	■						
4	■						GRANITIC ROCK: Light olive brown to brown, damp, weathered GRANITIC ROCK.
6							Less weathered.
8							Refusal on bedrock.
10							Total Depth = 8.7 feet. No groundwater encountered. Backfilled on 9/18/09.
12							

SCALE = 1 in./1 ft.

FIGURE A-4

Ninyo & Moore

TEST PIT LOG

ADDITIONS TO IT BUILDING
PALOMAR COMMUNITY COLLEGE
SAN MARCOS, CALIFORNIA

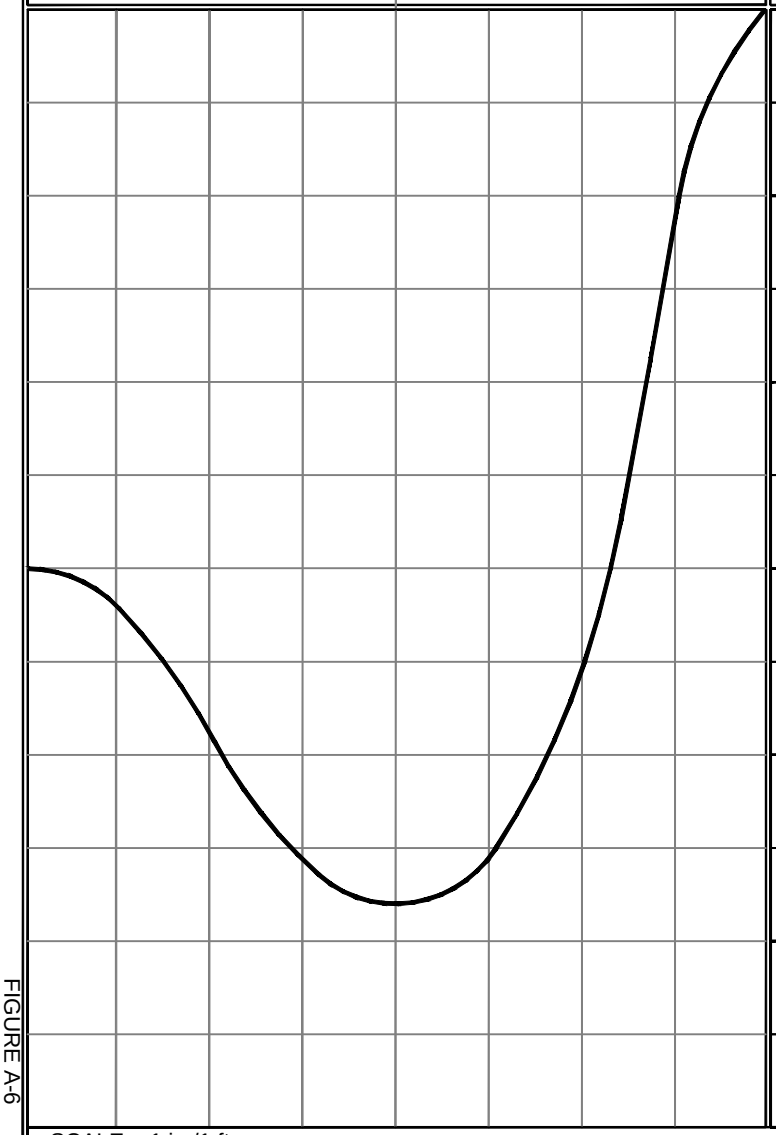
PROJECT NO.	DATE
106088020	9/09

DATE EXCAVATED 9/18/09 TEST PIT NO. STP-4

GROUND ELEVATION 620' Ñ (MSL) LOGGED BY MAH

METHOD OF EXCAVATION Backhoe 24"

LOCATION Behind IT Building (Bottom of Slope)



DEPTH (FEET)	SAMPLES: Bulk	SAMPLES: Driven	SAMPLES: Sand Cone	MOISTURE (%)	DRY DENSITY (PCF)	CLASSIFICATION U.S.C.S.	DESCRIPTION
0							GRANITIC ROCK: Brown to gray, dry, decomposed weathered GRANITIC ROCK.
2		■					Less weathered; many fractures.
4.8							Refusal on bedrock.
							Total Depth = 4.8 feet. No groundwater encountered. Backfilled on 9/18/09.

SCALE = 1 in./1 ft.

FIGURE A-6

APPENDIX B

GEOTECHNICAL LABORATORY TESTING

Classification

Soils were visually and texturally classified in accordance with the Unified Soil Classification System (USCS) in general accordance with ASTM D 2488-00. Soil classifications are indicated on the logs of the exploratory excavations in Appendix A.

Gradation Analysis

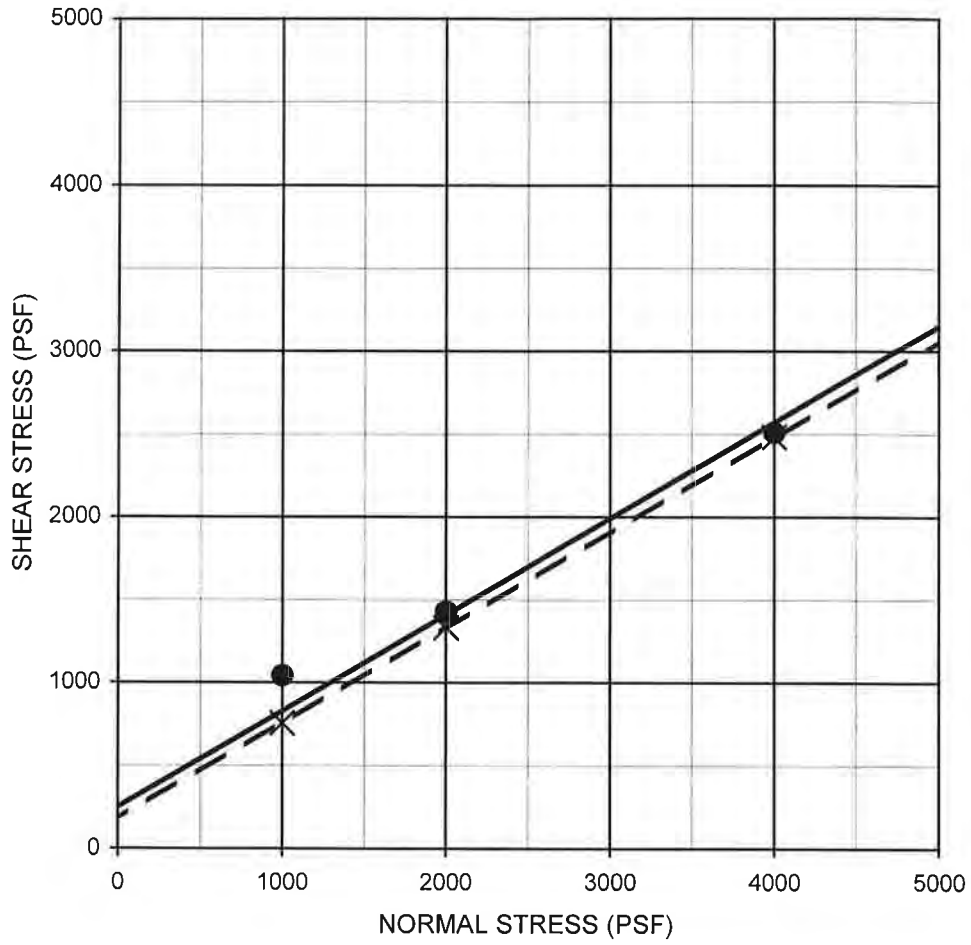
A gradation analysis test was performed on a selected representative soil sample in general accordance with ASTM D 422. The grain-size distribution curve is shown on Figure B-1. These test results were utilized in evaluating the soil classifications in accordance with USCS.

Proctor Density Tests

The maximum dry density and optimum moisture content of a selected representative soil sample was evaluated using the Modified Proctor method in general accordance with ASTM D 1557. The results of this test are summarized on Figure B-2.

Soil Corrosivity Tests

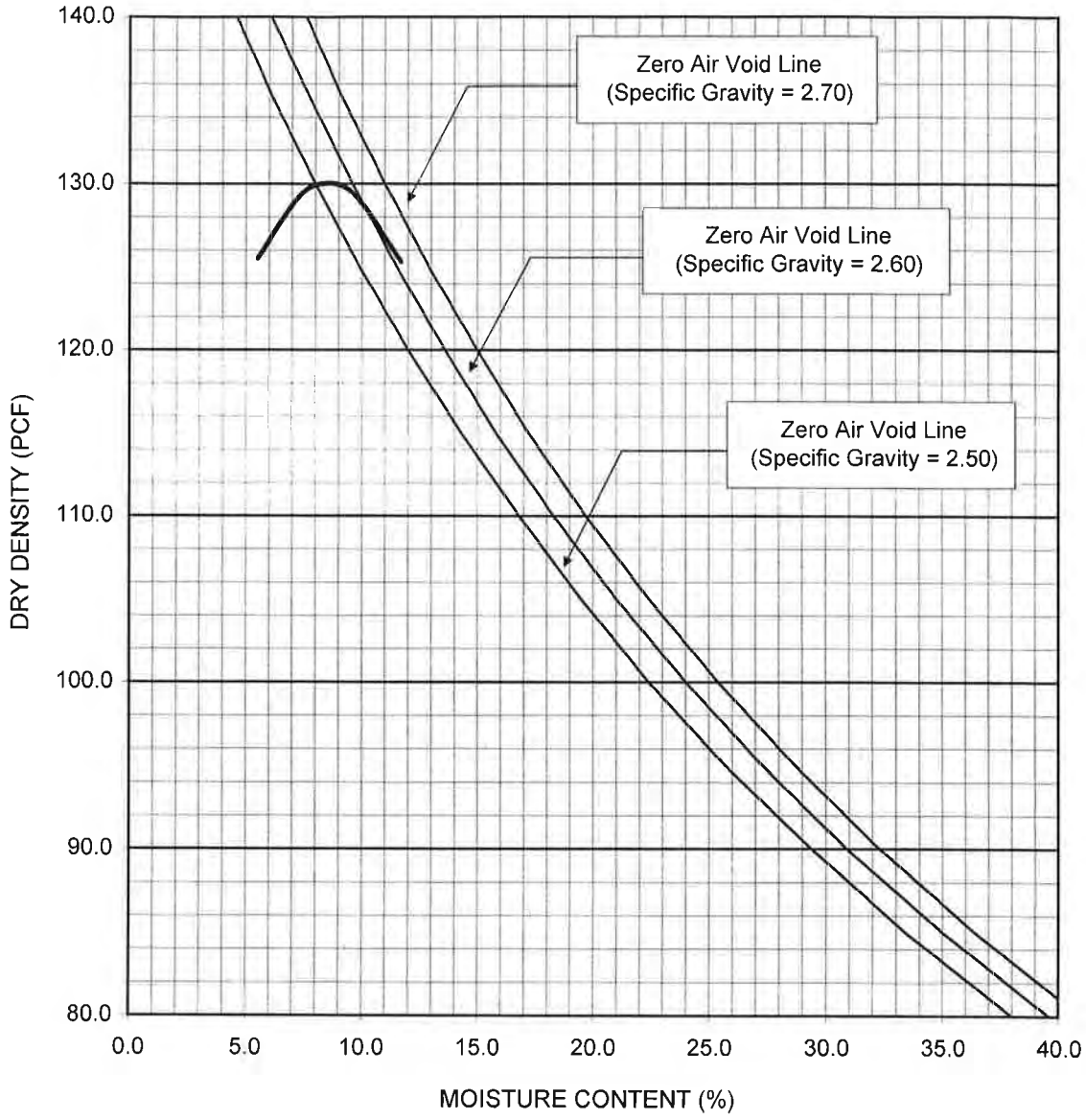
Soil pH, and resistivity tests were performed on a representative sample in general accordance with CT 643. The soluble sulfate and chloride content of the selected sample were evaluated in general accordance with CT 417 and CT 422, respectively. The test results are presented on Figure B-3.



Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion, c (psf)	Friction Angle, ϕ (degrees)	Soil Type
Remolded @ 90% Relative Compaction	—●—	BB-1	0.8-3.0	Peak	250	30	SM
Remolded @ 90% Relative Compaction	- - X - -	BB-1	0.8-3.0	Ultimate	180	30	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080

Ninyo & Moore		DIRECT SHEAR TEST RESULTS	FIGURE
PROJECT NO.	DATE	PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING PALOMAR COLLEGE SAN MARCOS, CALIFORNIA	B-1
106088027	7/14		



Sample Location	Depth (ft.)	Soil Description	Proctor Dry Density (pcf)	Optimum Moisture Content (%)
BB-1	0.8-3.0	Silty SAND (SM)	130.0	8.5
Dry Density and Moisture Content Values Corrected for Oversize (ASTM D 4718-07)			N/A	N/A

PERFORMED IN GENERAL ACCORDANCE WITH ☑ ASTM D 1557-12 ☐ ASTM D 698-12 METHOD ☑ A ☐ B ☐ C

Ninyo & Moore 5710 Ruffin Road, San Diego, California 92123		**PROCTOR DENSITY TEST RESULTS**	FIGURE
PROJECT NO.	DATE	PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING PALOMAR COLLEGE SAN MARCOS, CALIFORNIA	**B-2**
106088027	7/14		

SAMPLE LOCATION	SAMPLE DEPTH (FT)	pH [1]	RESISTIVITY [1] (Ohm-cm)	SULFATE CONTENT [2]		CHLORIDE CONTENT [3] (ppm)
				(ppm)	(%)	
BB-2	0.8-1.5	8.9	6,500	30	0.003	75

[1] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 643
[2] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 417
[3] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 422

Ninyo & Moore	CORROSIVITY TEST RESULTS	FIGURE
PROJECT NO. 106088027 / DATE 7/14	PROPOSED IMPROVEMENTS ADJACENT TO THE T-BUILDING PALOMAR COLLEGE SAN MARCOS, CALIFORNIA	B-3

State of California • Natural Resources Agency
Department of Conservation
California Geological Survey
801 K Street • MS 12-31
Sacramento, CA 95814
(916) 324-7324 • FAX (916) 445-3334

Edmund G. Brown Jr., *Governor*
John G. Parrish, Ph.D., *State Geologist*

Chris Miller
Director of Facilities
Palomar Community College District
1140 West Mission Road
San Marcos, CA 92069

August 23, 2017

Subject: **Second Engineering Geology and Seismology Review for Palomar Community College – New Storage Buildings 1140 West Mission Road, San Marcos, San Diego County, CA CGS Application No. 04-CGS2371 DSA File No. 04-115420**

Dear Mr. Miller:

In accordance with your request and transmittal of additional documents, the California Geological Survey (CGS) performed a second review of the engineering geology, seismology, and related geotechnical aspects of the consulting reports prepared for Palomar Community College in San Marcos. It is our understanding this project involves construction of new storage buildings on an existing campus. This review was performed in accordance with Title 24, California Code of Regulations, 2013 California Building Code (CBC) and followed CGS Note 48 guidelines. We reviewed the following report addendum and revised site plan:

> **Addendum to Geotechnical Evaluation, Proposed T-Building Improvements, Palomar Community College, San Marcos, California:** Ninyo and Moore, 5710 Ruffin Road, San Diego, CA 92123; company Project No. 106088027, report dated July 11, 2017, 3 pages, 3 figures.
>
> **Overall Site Plan, Palomar College, New Storage Buildings:** HMC Architects, 3546 Concours Street, Ontario, CA 91764; company Project No. 3443001-302, dated August 7, 2017, 1 page (Drawing No A1.1).

Previously, we reviewed the following report:

> **Geotechnical Evaluation, Proposed Improvements Adjacent to the T-Building, Palomar College, San Marcos, California:** Ninyo and Moore, 5710 Ruffin Road, San Diego, CA 92123; company Project No. 106088027, report dated July 18, 2014, 21 pages, Appendix A and E.

CGS previously reviewed and submitted our findings regarding this project in our review letter dated July 27, 2016. Based on our first review, all engineering geology and seismology items were adequately addressed and no additional information was requested. We understand the geotechnical consultant has provided supplemental recommendations for design and construction of concrete masonry unit (CMU) retaining walls now proposed to be constructed at the base of an existing ascending cut slope on the north edge of the project site.

Recommendations for Retaining Walls

CGS' geotechnical engineer has reviewed the addendum letter and the associated retaining wall design and construction recommendations provided by the consultants. The consultants recommend supporting the retaining walls on continuous footings founded wholly in compacted fill or wholly in granitic bedrock materials present beneath the site. The consultants have also recommended that transitional bearing conditions be mitigated by overexcavation of 2 feet below the bottom of the footing or by deepening the footings to bear on the granitic rock. The consultants have also provided reasonable and appropriate recommendations and values for lateral earth pressures to be considered in design, including seismic increment, and provision of proper drainage. These recommendations for retaining walls appear reasonable based on the information reviewed, and no further information is requested.

CGS notes the revised Site Plan indicates the project now includes construction of three new buildings instead of the two addressed by the consultants' original report dated July 18, 2014. However, based on the relatively uniform site conditions and location of the newly-proposed building between the two originally proposed, it appears the conclusions with respect to geologic hazards and associated recommendations provided by the consultants in the original report should remain applicable to the three buildings now proposed for the project.

Based on our review, ***the engineering geology and seismology hazards at this site are adequately addressed and no additional information is requested of the consultants relative to this project***. If you have any further questions about this review letter, please contact the reviewer at (916) 324-1522 or chase.white@conservation.ca.gov.

Respectfully submitted,

Chase White
Senior Geotechnical Engineer
PG 8530, CEG 2489, PE 73664, GE 2938

Concur:

Jennifer Thornburg
Senior Engineering Geologist
PG 5476, CEG 2240

Copies to:

Christina Tretinjak, *Certified Engineering Geologist* and Jeffrey T. Kent, *Registered Geotechnical Engineer*
Ninyo and Moore, 5710 Ruffin Road, San Diego, CA 92123

Stephen A. McDowell, *Architect*
BNIM, 797 J Street, San Diego, CA 92101

Geoffrey Chan, *Supervising Architect*
Division of State Architect, 10920 Via Frontera, Suite 300, San Diego, California 92127

be changed except with the written consent of District unless the job superintendent proves to be unsatisfactory to Contractor and ceases to be in his/her employ. The job superintendent shall represent Contractor in his/her absence and all directions given to him shall be as binding as if given to Contractor. Other directions shall be so confirmed on written request in each case.

c. Contractor shall give efficient supervision to work, using his/her best skill and attention to control safety and job coordination. He shall carefully study and compare all drawings, specifications, and other instructions and shall at once report to architect any error, inconsistency or omission which he may discover. The Contractor shall not be liable to District for any damage resulting from errors or deficiencies in the contract documents or other instructions by the architect.

Article 46. INSPECTOR'S FIELD OFFICE

a. Contractor shall provide for the use of inspector a separate trailer or temporary private office of not less than seventy-five square feet of floor area to be located as directed by inspector and to be maintained until removal is authorized by District. The Office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. Door shall have a key-type lock or padlock hasp. The inspector's field office shall have heating and air-conditioning and shall be equipped with a telephone, a telephone answering machine, a fax machine and use of an on-site copier at Contractor's expense.

b. A table satisfactory for the study of plans and two chairs shall be provided by Contractor. Contractor shall provide and pay for adequate electric lights, local telephone service, and adequate heat and air conditioning for the field office until authorized renewal.

c. The provisions of this section are intended to be complementary to any requirements provided elsewhere in these contract documents, however in the event of conflicts between this section and other provisions of these contract documents, this section shall prevail.

Article 47. DOCUMENTS ON WORK

a. Contractor shall keep one copy of all contract documents, including addenda, change orders, Division I, Title 21 of the California Code of Regulations, Parts 1-5 and 12 of Title 24 of the California Code of Regulations, and the prevailing wage rates applicable at the time of the contract, which are a part of contract documents, on job at all times. Said documents shall be kept in good order and shall be available to District representative, architect and his/her representatives. Contractor shall be acquainted with and comply with the provisions of said Titles 21 and 24 as they relate to this project. (See particularly Duties of the Contractor, Title 24 California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to this project, particularly Titles 17, 19, 21 and 24.)

b. Contractor shall also make available all books, records, accounts, contracts, bids, etc. upon request of District.

Article 48. RECORD ("AS BUILT") DRAWINGS

a. Contractor shall maintain a clean, undamaged set of contract drawings and shop drawings. In addition to maintaining one complete set of record drawings (herein referred to as "as-builts"), Contractor shall require each trade to do its own as-builts. The trade as-builts shall contain information showing clean and clear drawings with horizontal and vertical controls suitable for conversion to electronic media. Graphic quality must be equal to clean and clear original drawings; adequacy of the drawings shall be determined by the District's representative or architect. Contractor shall mark the set to show the actual installation where the installation varies from the work as originally shown. Contractor shall mark whichever drawings are most capable of showing conditions fully and accurately where shop drawings are used, and shall record a cross-reference at the corresponding location on the contract drawings. Contractor shall give particular attention to concealed elements that would be difficult to measure and record at a later date. Contractor shall use colors to distinguish variations in separate categories of the work.

b. Contractor shall note related change order numbers where applicable. Contractor shall organize record drawings sheets into manageable sets, bound with durable paper cover sheets and shall print suitable title, dates and other identification on the cover of each set.

c. At the end of the project, the Contractor shall provide the district representative with a complete set of as-built drawings. The complete set shall contain information showing clean and clear drawings with horizontal and vertical controls suitable for conversion to electronic media. Graphic quality must be equal to clean and clear original drawings; adequacy of the drawings shall be determined by the District's representative or architect. The as-builts must show the entire site for each major trade, including but not limited to water, sewer, electrical, data, telephone, cable, fire, alarm, gas, and plumbing.

SECTION 01 10 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY OF WORK

A. This Contract includes work necessary for and incidental to execution and completion of

PALOMAR COLLEGE - NEW STORAGE BUILDINGS
PALOMAR COLLEGE DISTRICT
1140 W. MISSION RD.. SAN MARCOS. CA 92069

in accordance with **DSA Approved** Contract Documents dated **October 18, 2017,** prepared by HMC Architects, 3546 Concours, Ontario, California 91764.

1.02 GENERAL DESCRIPTION OF WORK

A. Work under this Contract includes furnishing all labor, materials, services and transportation, except as specifically excluded which is required for completion of Project in accordance with provisions of Contract Documents.

B. The intent of these Contract Documents is to **construct a** facility **that is compliant** with 2013 California Building Code (CCR, Title 24, Part 2, Chapter 11B) requirements for accessibility to persons with disabilities. Should any conditions arise, or be discovered, that are not covered by the Contact Documents, and that would cause the finished work to fail to comply with those requirements, a Change Order will be executed and approved DSA-ACS before proceeding with the Work.

C. Work to be included as part of this Contract:
1. Construct **two** New Storage Buildings **and one New Fabrication Building, including, but not limited to a retaining wall** and related site work, underground utilities and fire lane.

D. The following restrictions apply to access and to use of site:
1. General: During construction period, Contractor shall have full use of premises for construction operations, including use of site **as noted on the Staging Diagram included in the Bid Documents**. Contractor's use of premises is limited by Owner's right to perform work or to retain other contractors on portions of Project.
2. Use of Site: Limit use of premises to Work in areas indicated **on Staging Diagram**. Confine operations to areas within Contract limits indicated. Do not disturb portions of site beyond areas in which Work is indicated. Allow for Owner occupancy and use by public.
3. Driveways and Entrances: Keep **fire lane,** driveways and entrances serving premises clear and accessible to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site. **Trenches in fire lane must be plated**.

4. Partial Owner Occupancy: Owner reserves right to occupy and to place and install equipment in completed areas of building before Certified Completion, provided such occupancy does not interfere with completion of Work. Such placing of equipment and partial occupancy shall not constitute acceptance of total Work.
5. Full Owner Occupancy: Owner will occupy site and existing buildings during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform Work so as not to interfere with Owner's operations.
6. Limit site disturbance, including earthwork and clearing of vegetation, to 40 feet beyond building perimeter; 5 feet beyond primary roadway curbs, walkways, and main utility branch trenches; and 25 feet beyond pervious paving areas.

1.03 PERMISSIBLE WORKING DAYS AND HOURS

A. Work may be conducted on **Mondays – Fridays** between the hours of 7:**30** A.M. and **5**:00 P.M.

B. Work may be conducted **on** Saturdays **between the hours of 8:00 A.M. and 5:00 P.M**, at no extra cost to the Owner, when written notification to Owner has been submitted **48 hours in advance** and anticipated schedule of Work activities has been approved. **No Sunday work is permitted**.

C. This project is adjacent to neighboring residential properties. Contractor shall be respectful of neighbors by not allowing vehicles to idle or back up outside of the permitted work hours, and by making no unnecessary noise or using offensive language during work hours.

D. Conform to Division 01, General Requirements for required payment for Inspector's services performed during overtime hours.

1.04 INTERRUPTION OF EXISTING UTILITY SERVICES

A. When necessary to interrupt any existing utility service to make connections, minimum of 48 hours advance notice shall be given to Owner and Architect. Interruptions in utility services shall be of shortest possible duration for Work at hand and shall be approved by Architect.

B. In event any utility service is interrupted without required 48 hours notice, Contractor shall be financially liable for all damages suffered by Owner due to unauthorized interruption.

1.05 VERIFICATION OF EXISTING CONDITIONS

A. Contractor shall be responsible to examine site of Work and after investigation to decide for himself/herself character of materials, equipment and utilities to be encountered and all other existing conditions affecting Work. Contractor is also responsible to provide sufficient costs to cover provisions of all items of Work under existing conditions referred to herein.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED.

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Project Management and Coordination: Project Coordination, Project Meetings.

B. Construction Progress Documentation: Construction Progress Schedule, Project Website Construction Photographs, Two-week Look Ahead Schedule.

C. Submittal Procedures: Shop Drawings, Product Data, Samples, Source Quality Control Reports, Deferred Approval Items, Finishes Materials Schedule, and CHPS Submittals.

1.02 PROJECT COORDINATION

A. Coordinate scheduling, submittals, and Work of various Sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Coordinate space requirements and installation of mechanical and electrical Work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installation, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and **cleanup** of Work of separate sections in preparation for Certified Completion and for portions of Work designated for Owner's occupancy.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.03 PRECONSTRUCTION MEETING

A. **Project Manager** will schedule meeting after Notice of Award.

B. Attendance Required: Architect, **Project Manager,** Prime Contractors, Major Subcontractors, Project Inspector and key Owner personnel.

C. Agenda:
1. Contract Agreement:
   a. ~~Transmit 5 signed originals of the Agreement to the Owner~~ **per instructions from Palomar's Contract Officer**.
   b. ~~Transmit Attachment Certifications to the Owner~~.
   c. Transmit Performance and Payment Bonds to the Owner.
   d. Contractor to transmit Certificates of Insurance to the Owner.
   e. Owner to transmit copy of Certificates of Property Insurance to Contractor.
   f. Review General, **Special** and Supplementary Conditions.
2. Receive documentation from Contractor:
   a. Construction Progress Schedule.
   b. Schedule of Values.
   c. List of Subcontractors with addresses and phone numbers.
   d. List of Submittals and estimated date of submittal.
3. Project Administration:
   a. Application for Payment, Stop-Notice Lien Release, Record Drawings.
   b. Change Order Requests, Change Orders, Request For Proposals, Construction Change Directive/Instruction Bulletins. Preparation of Change Orders by Architect according to 2013 California Administrative Code, Code of Regulations Title 24 Part 1, Section 4-233.
   c. Submittals
   d. Substitution procedures.
   e. Site Meetings.
   f. Testing Laboratory.
   g. Verified Reports.
   h. Designation of key personnel and their duties.
   i. Lines of communications.
   j. Procedures for RFIs.
   k. Procedures for testing and inspecting.
   l. Distribution of the Contract Documents.
   m. Sustainable design requirements.
   n. Preparation of record documents.
   o. Work restrictions.
   p. Working hours.
   q. Procedures for moisture and mold control.
   r. Procedures for disruptions and shutdowns.
   s. Construction waste management and recycling.
   t. Parking availability.
   u. Storage areas.
   v. Equipment deliveries and priorities.
   w. Security.
   x. Progress cleaning.
   y. **Dust control**.
4. Special Owner Conditions:
   a. Temporary Facilities.
   b. Owner Occupancy.
   c. Work by Owner.

d. Access to Site – Owner Contact.

5. Construction Process:
   a. **Safety**
   b. Contractor shall discuss overview of construction.
   c. Contractor shall identify items to be selected by Architect/Owner and date selections must be made.
   d. Contractor shall review special requirements for equipment, safety, and noise.
6. Pre-Job Conference:
   a. Prevailing Wage Requirements.
   b. Checklist and signatures.

D. **Project Manager** will record minutes and distribute copies within seven days after meeting to participants and those affected by decisions made.

1.04 PROGRESS MEETINGS

A. **Project Manager** will schedule and administer meetings throughout progress of Work as needed.

B. **Project Manager** will make arrangement for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Project Coordinator, Prime Contractors, Major Subcontractors and Suppliers, Project Inspector, key Owner personnel, **Project Manager** and Architect as appropriate to agenda topics for each meeting.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Maintenance of Construction Progress Schedule.
   7. Corrective measures to regain projected schedules.
   8. Maintenance of quality and work standards.
   9. Effect of proposed changes on progress schedule and coordination.
   10. Other business relating to Work.

E. Architect will record minutes and distribute copies within seven days after meeting to participants, and those affected by decisions made.

1.05 PREINSTALLATION MEETING

A. When required in individual Specification Sections, convene pre-installation meeting before starting Work of Section.

B. Require attendance of parties directly affecting, or affected by, Work of specific Section.

C. Notify **Project Manager and** Architect four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of installation, preparation and installation procedures.
   2. Review coordination with related Work.

E. Contractor shall record minutes and distribute copies within three days after meeting to participants, Architect and those affected by decisions made.

1.06 SUBMITTAL PROCEDURES

A. Transmit separate request for EACH Section submittal directly to Architect **and Project Manager**.
   1. Bind submittals sturdily, neatly label covers.
   2. Include HMC Architects job number as it appears on Contract Documents.
   3. Include Authority Having Jurisdiction application or approval number.

B. Submittal number shall use a sequential number followed by a hyphen then the Specification Section followed by a hyphen and then the revision number (e.g., 0001-051200-0). Resubmittals shall have the original number and include the revision number as the suffix (e.g., 0001-051200-1).

C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and Specification Section number, as appropriate.
   1. Provide name telephone number of individual who may be contacted for further information.

D. Apply Contractor's dated stamp with Contractor's original signature or initials affixed thereto, certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of Work and Contract Documents. Stamped signatures or initials are not acceptable.

E. Schedule submittals to expedite Project. Coordinate submission of related items.
   1. Make submittals according to Construction Schedule and adequate enough in advance of scheduled dates of installation to provide required time for reviews for securing necessary approvals for possible revision and re-submittal and for placing orders and securing delivery.
   2. Schedule submittals such that related materials and assemblies that support or are affected by the submitted materials are either submitted simultaneously or in order of installation sequence such that impacts and coordination can be evaluated as part of the review.

F. Late submittals, not in accordance with the "Schedule for Submission of Shop Drawings, Product Data and Samples" and the Construction Schedule, will not be considered an acceptable reason for initiating a substitution requests caused by late ordering and procurement of materials.

G. Identify variations from Contract Documents and Product or system limitations that is detrimental to performance of completed Work.

H. Substitutions: **Submit by the last day for Requests for Information prior to Bid Date and as approved per Section 01 60 00, state effect of approved substitution on construction schedule, and changes required in other work or products.**

I. Owner-Directed Substitution Approval: Substitution submittals specifically directed by Owner to be approved by the Architect for this project shall pertain to a specific item only. The Architect's stamped approval of Owner-Directed Substitution does not constitute approval for any other item, other projects or parts of project. A Change Order shall be prepared to effect the Owner's authorization of Owner-Directed Substitution.

J. Provide space for Contractor and Architect review stamps.

K. Revise and resubmit submittals in their entirety, identify changes made since previous submittal.

L. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

M. Determine and verify field dimensions and conditions, materials, catalog numbers and similar data.

N. Coordinate as required with all trades and all public agencies involved.

O. Unless otherwise specifically authorized by Architect, make submittals in groups containing associated items within the same Section. Architect may reject partial submittals as not complying with provisions of this Section.

P. Where individual Sections require structural calculations, prepare submittal under direction of qualified California Licensed Structural Engineer and shall bear the Engineer's stamp and signature.

Q. Format of Submittals: Submit Electronic Submittals, including but not limited to: Product Data, Shop Drawings, Schedules, Certifications, tests, logs, for ease of information distribution. At Contractor's option he may submit standard printed data on reproducible media and in number of copies required per this Section and other project Sections. Identify submitted items that are applicable to the project, including any deviations, with arrows, clouds, or other distinct graphic, or in highlighted writing that can be reproduced with black and white copiers easily discernible from background information.

1.07 CONSTRUCTION PROGRESS SCHEDULE

A. Prepare final Construction Progress Schedule. Provide separate time for each activity and vertical line to identify first workday of each week. Use same breakdown of Work indicated in Schedule of Values. As Work progresses, mark to indicate actual completion.

1. Submit within 15 calendar after the date on the Notice to Proceed

2. Prepare schedule on reproducible media, of width sufficient to show data for entire construction period.

3. Coordinate each element with other activities. Show each activity in proper sequence. Indicate sequences necessary for completion of related Work.
4. Indicate fabrication, delivery and installation activities.
5. Indicate Owner-Furnish, Owner-Installed or Owner-Furnish, Contractor-Installed items in Schedule.
6. Schedule Distribution: Distribute copies to Owner, Architect, subcontractor and parties required to comply with dates.
7. Updating: Revise schedule after each meeting or activity where revisions have been made.
8. Indicate Completion Date and allow time for Architect's procedures necessary for certifying Completion."

B. Revise and resubmit as required.

C. Scheduling may utilize programs including: Microsoft Project Schedule, Primavera Project Planner (P3), Primavera SureTrak Project Manager®, Meridian Project Systems or similar programs addressing the requirements.

D. Indicate complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates and duration. Ownership of float time is shared commodity, not for exclusive use by either party. Use float time to make up Work behind schedule until float time is depleted. Submittals returned in less time than allowed by Contract, shall be used to reduce Contractor time extension requests.

E. Indicate Milestones and target date and their activities including completion dates.

F. No Time extensions will be granted nor delay damages paid until a delay occurs that impacts the schedule consumes all available float or contingency time available, and extends the work beyond the contract completion date.

G. Indicate estimated percentage of completion for each item of Work at each submission.

H. Schedule for Submission of Shop Drawings, Product Data and Samples: Incorporate "Schedule for Submission of Shop Drawings, Product Data and Samples" in Construction Progress Schedule. This schedule shall include submittal dates required for shop drawings, product data, samples and product delivery dates, including Deferred Approval Items, if any, and including those items furnished by Owner. Provide time in schedule for Architect's review of submittals according to Contract Time. Allow 21 calendar days for submittals requiring consultants' review.

I. Submit revised schedules with each Application for Payment identifying changes since previous version.

J. As a minimum allow 15 calendar days in schedule for final inspections before final acceptance. Include time to correct punch list items prior to final acceptance.

K. Substantially Completed buildings, alterations, additions and relocatables: in projects consisting of different buildings, alterations, additions and relocatables, scheduled to be substantially completed and delivered to the Owner for beneficial occupancy prior to

Final Completion of entire project, indicate in the Construction Schedule each building, alteration, addition and relocatable progress, completion date, Punch List items and time for completion of Punch list items.

1. DSA 152-Project Inspection Cards: The Inspector shall post the forms in his/her job file and shall electronically post the forms. Inspection Cards required: DSA-issued 152-Project Inspection Cards for EACH building, alteration, addition, each relocatable, and one for the site work when site work is involved. The Project Inspector is responsible to sign off applicable blocks and sections on the form as the Work progresses as required in accordance with DSA Procedures. No one is allowed to modify the Project Inspection Cards except the Project Inspector.

1.08 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage qualified photographer to take construction photographs.

B. Photographic Film: Medium format, 2-1/4 by 2-3/4 inches.

C. Do not permit prints to be issued for any purpose without specific written authorization from the Architect.

D. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1600 by 1200.

1. Provide 2 sets (CD's) of copies to Owner**'s Project Manager.**

E. Date Stamp: Unless otherwise indicated, date and time stamp each photographs as it is being taken so stamp is integral to photograph.

1. Identify each print with job name, location from which photograph was taken, photographer's name address and photograph number.

F. Pre-Construction Photographs: Before starting construction, take 4 color photographs of Project site and surrounding properties from different vantage points, as directed by Architect. Show existing conditions adjacent to property.

G. Pre-Construction Video: Before starting construction, record a video of all existing site conditions, including concrete, asphalt, enclosures, utilities, adjacent structures, adjacent landforms and landscaping, etc. Upload to Owner's Project Management Database within two (2) weeks of notice to proceed.

H. Periodic Construction Photographs: Take 4 color photographs monthly, coinciding with cutoff date associated with each Application of Payment. Photographer shall select vantage points to best show status of construction and progress since last photographs were taken. Take photographs same time of day.

1. Field Office Prints: Retain 1 set of prints of periodic photographs in field office at Project site available at all times for reference. Identify photographs same as for those submitted to Architect.
2. Final Completion Construction Photographs: Take 8 color photographs after date of Substantial Completion for submission as Project Record Documents.

1.09 COORDINATED DRAWINGS

A. Submit drawings that indicate routing, locations, sizes, types and number of components in concealed spaces where potential conflict may occur between structures, mechanical, electrical, communications and ceiling suspension systems.

B. Indicate locations of ceiling penetrations and surface-mounted items. Provide cross sections at areas to indicate proper support of ceilings and non-interference with work of other Sections of specifications. Cross sections shall indicate coordination required and proposed solutions for routing of elements where potential conflict exists. Reproduction of Architect's reflected ceiling plan is not acceptable.

C. Drawings shall be based on field measurements, shop drawings and product data.

D. Conflicts shall be brought to Architect's attention immediately.

E. Submit to Architect, in writing, requests for clarification or interpretations that will affect intent and/or scope of Contract Documents.

F. Coordinated drawings shall indicate each class of Work in affected area. Drawing or written submittal shall include Contractor's recommendations for solution of any potential conflicts as well as recommendations tendered by any Work of any Section of Specifications which may be affected thereby.

G. Submit coordinated drawings in scale of not less than 1/8" = 1'-0" with necessary sections and profiles at an appropriate, clearly readable enlarged scale. Submit coordinated drawings as one electronic (CD) copy and one bond (hard) copy.

H. Architect will review submittals, make appropriate notations and comments to ensure solution meets intent of Contract Documents and then return to Contractor for implementation.

I. Contractor shall be responsible for proper coordination of Work of Sections of Specifications in execution of coordinated drawings. Installation of materials, components or equipment under one Section of Specifications without full and complete, agreement, knowledge and consent by fabricators of adjacent or otherwise related or affected Work will not be approved.

J. It shall be incumbent upon Contractor that fabricators of Work involved in execution of coordinated drawings be informed, consulted and advised in sufficient advance time to arrive at solutions where no extension of contract time for extra cost to Owner will be approved due to Contractor's negligence in expeditious, timely submittal of coordinated drawings.

1.10 SHOP DRAWINGS

A. Within 15 days from Notice to Proceed, submit to Architect for review and acceptance, "Schedule for Submission of Shop Drawings, Product Data and Samples" (Submission Schedule) listing required submittals and review dates. Schedule shall allow sufficient

time for checking by Architect. Incorporate Submission Schedule in Construction Progress Schedule. Days: Calendar Days.

1. Additionally, submit all Shop Drawings, Product Data and Samples according to the following guidelines. Guidelines are provided to allow Architect and Engineers adequate time for review and is not intended to dictate contractor's means and methods:
   a. Submit within 30 days from Notice to Proceed. Allow Architect 15 days to respond. Re-submittals: allow Contractor 10 days, and Architect 15 days to respond.

B. Submit newly prepared information, drawn to accurate scale. Highlight, encircle or otherwise indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to Project will not be approved as shop drawings.

C. Shop drawings shall include fabrications and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include following information:
   1. Dimensions
   2. Identification of products and materials included.
   3. Compliance with specified standards.
   4. Notation of coordination requirements.
   5. Notation of dimensions established by field measurement.

D. Sheet Size: Except for templates, patterns and similar full-size drawings, submit shop drawings on sheets at least 8-1/2 inch x 11 inch, but not larger than 30 inch x 42 inch.

E. Contractor shall review, stamp with his approval as herein required, and submit with reasonable promptness and in orderly sequence, according to Submittal Schedule, all shop drawings required by Contract Documents or subsequently by Architect as covered by modifications. Shop drawings shall be properly identified. At time of submission Contractor shall inform Architect in writing and with highlighted annotation on shop drawings of any deviation in shop drawings from requirements of Contract Documents.

F. Stamp: Each page of shop drawings shall bear Contractor's stamp, which shall signify Contractor's representation that he has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated information contained in shop drawings. Each stamp shall be accompanied by wet signature or initial of employee of Contractor who may be contacted for information. Stamped signatures or initials are not acceptable.

G. Method of Review: Submit Electronic Shop Drawing Submittals. At Contractor's option he may submit standard printed shop drawings, five (5) prints or bond copies and one (1) 20-lb xerographic bond (reproducible). Identify submitted items that are applicable to the project, including any deviations, with arrows, clouds, or other distinct graphic, or in highlighted writing that can be reproduced with black and white copiers easily discernible from background information.
   1. Comments or corrections will be noted on submittals and returned to Contractor, who shall identify all changes made since previous submittal and resubmit in same manner. When reviewed, submittals will be stamped and returned to Contractor who shall make distribution of electronic copies as required.

H. Processing Time
   1. Allow enough time for submittal review, including time for re-submittals, as follows:
      a. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
      b. In accordance with the Schedule for Submission of Shop Drawings, Product Data and Samples. Review of each submittal for conformance with design concept of Project and with information given in Contract Documents. Architect's review of a separate item shall not indicate acceptance of assembly in which that item functions. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
      c. Submittals requiring Consultants' Review: Where review of submittals by Architect's consultants is required, allow minimum 21 calendar days for review of each submittal.
   2. Re-submittal Review: In accordance with the Schedule for Submission of Shop Drawings, Product Data and Samples for each re-submittal.

I. Submittal of shop drawings to Architect, shall be made by Contractor with dated transmittal form or letter, and not by subcontractors or suppliers.

J. Architect's review of shop drawings shall not relieve Contractor of responsibility for any deviation from requirements of Contract Documents unless Contractor has informed Architect in writing of such deviation at time of submission and Architect has given written acceptance to specific deviation, nor shall Architect's review relieve Contractor from responsibility for errors or omissions in shop drawings.

K. No portion of Work requiring shop drawings shall be commenced until shop drawings have been returned with review by Architect.

L. At Contractor's option, he may request and if Architect approves use Architect's computer-generated drawings in electronic format. Contractor's request must be in writing with list of drawings requested and CAD format required. Contractor assumes all liability for accuracy of shop drawings if he opts to use Architect's drawings. Software for CAD formats requested by Contractor not currently available to Architect will be provided by Contractor at his own expense. Complete Cad Drawing Request Form at the end of this Section for request.
   1. Engineers' Drawings, CAD engineers' drawings are available only at discretion of the Engineer.

1.11 PRODUCT DATA

A. Submit within time required by Shop Drawings.

B. Submit six (6) copies. Four (4) copies will be retained by Architect.

C. Mark each copy to identify applicable products, models, options and other data. Supplement manufacturers' standard data to provide information unique to this Project.

D. After review, distribute and provide copies for Record Documents.

1.12 SAMPLES

A. Submit within time required by Shop Drawings.

B. Submit samples to illustrate functional and aesthetic characteristics of product with integral parts and attachment devices. Coordinate sample submittals for interfacing Work.

C. Submit samples of finishes from the full range of manufacturers' standard colors, textures and patterns for Architect selections, or in custom colors selected.

D. Include identification on each sample with full Project information.

E. Submit minimum of three (3) samples or as specified in individual Sections of Specifications, two (2) of which will be retained by Architect.

F. Reviewed samples which may be used in the Work are indicated Sections of the Specifications, two (2) of which will be retained by the Architect.

G. Selection or rejection of samples will be determined by Architect in writing.

H. Colors: Materials that are visually related to other finishes require that subcontractors submit their samples before normally scheduled in order that color selection can be made for other items that are scheduled to be ordered earlier in construction schedule. Complete submittal of color charts and color samples shall be made before related colors will be selected Architect. Contractor shall be responsible to coordinate submittal schedules so as not to delay Work.

1.13 FINISHES MATERIALS SCHEDULE

A. Submit in accordance with Submittal Procedures.

B. Submit Schedule verifying lead times of materials and products as scheduled in Section 09 06 00, Schedules for Finishes.

1.14 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual Specification Sections, submit manufacturer's printed instruction for delivery, storage, assembly, installation, start-up, adjusting and finishing in quantities specified for product data.

B. Identify conflicts between manufacturer's instructions and contract documents.

1.15 MANUFACTURER'S CERTIFICATIONS

A. When specified in individual Specification Sections, submit manufacturers' certificate to Architect for review in quantities specified for product data.

B. Indicate that material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

1.16 PRECEDENCE

A. The Contract and each of the Contract Documents are complementary and they shall be interpreted so that what is called for in any one shall be as binding as if called for in all.

B. In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:
1. The Agreement.
2. Addenda, with those of later date having precedence over those of earlier date.
3. The Supplementary Conditions.
4. The General **and Special** Conditions of the Contract for Construction.
5. Drawings and Technical Specifications.
6. In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.
7. Any work called for in the Drawings and not mentioned in the Specifications, or vice versa, shall be performed as though fully set forth in both.
8. Contractor shall secure written permission from, Architect before proceeding with work affected by omission or discrepancies in the Contract.

C. Separate sections of this Specification are arranged only for convenience of Contractor, and nothing stated herein should be misconstrued as suggesting jurisdiction over items of work by any different building trades.

1.17 TWO-WEEK LOOK AHEAD SCHEDULE

A. Submit a Two Week Look Ahead Schedule and shall contain the following:
1. Prepare detailed two-week schedule projections for the Work to be performed during the following weeks beyond the week it is presented at the weekly construction meeting or at the request of the Architect during the construction period.
2. Be plotted in bar chart or time scale logic format and be of such size that all activity numbers and descriptions are clearly legible.
3. Be sorted by sub contractor responsibility, actual start, early start and total float.
4. Include activity ID, description and float for each activity.
5. Include all activities, completed, in progress and scheduled to start within the time frame of the date minus one week to the data date plus two weeks.

6. Schedule shall be updated and provided at each regular progress meeting for review and comparison to approved project schedule status.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. Refer to Section 01 70 00 Execution Requirements.

B. New Materials: As specified in product sections; match existing products and Work for patching and extending Work.

C. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing Work as standard.

PART 3 - EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01 40 10

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Reference Standards.

B. Quality Assurance and Control of Installation.

C. Field Samples.

D. Project Inspector and Inspections.

E. Permits and Fees.

F. Verified Reports.

G. Manufacturers' Field Services and Reports.

H. Laboratory Testing Services.

1.02 REFERENCE STANDARDS

A. Conform to reference standards by date of issue current on date of Contract Documents.

B. For products or workmanship specified by Association, Trade or Federal Standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

C. Obtain copies of standards when required by Contract Documents.

D. Maintain copy of standards at jobsite during submittals, planning and progress of the specified Work until Certified Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.

F. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.03 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, products, services, site conditions and workmanship to produce Work of specified quality.

B. Comply fully with manufacturers' instructions including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Perform Work by persons qualified to produce workmanship of specified quality.

E. Where experience minimums for workmen, applicators, companies or manufacturers are required in individual Sections, written certification and documentation substantiating such minimums shall be submitted and approved by the Architect, when requested.

F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

G. Field Samples
   1. Obtain field samples for review by Architect.

1.04 PROJECT INSPECTOR

A. An Inspector, herein referred to as the "Project Inspector", "Job Inspector", or "Inspector of Record" (IOR) will be employed by the Owner approved by the Architect, Structural Engineer, and the Division of State Architect (DSA) in accordance with CAC Section 4-333(b). The Inspector of Record's duties are described in CAC Section 4-342, and DSA Procedure 13-01.

B. Class of Inspector required for this project in accordance with Title 24, Part I, Section 4-333(b):
   1. Class 1 Inspector.

C. The Work of construction in all stages of progress shall be subject to the personal continuous observation of the Project Inspector. He shall have free access to any or all part of the Work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the Work and the character of the materials. Inspection of the Work shall not relieve the Contractor from any obligation to fulfill this Contract.

1.05 PERMITS AND FEES

A. Where required by the provisions of individual sections of the Specifications, and where required to carry out construction operations, Contractor shall obtain and pay for permits and fees, including, but not limited to, Demolition, Grading, Disposals, requirements of Water, Gas, Sewer, Flood and Sanitary Districts, Municipal and County Building Departments having jurisdiction.
   1. Fees for final utility connections shall be paid by the Contractor and reimbursed to the Contractor by the Owner at direct cost.
   2. Building Permits or approvals issued by DSA requiring fees will be obtained and paid by the Owner.

1.06 VERIFIED REPORTS

A. Contractor shall comply with CAC Sections 4-336 and 4-343 and issue verified reports through the Architect as required.

1.07 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and as applicable and to initiate instructions when necessary.

B. Manufacturers' representatives shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

C. Submit report of observation to Architect for review.

1.08 CODES AND REGULATIONS

A. All work pertaining to and all materials supplied for executing and completing this Contract shall comply with provisions specified in the Contract Documents and with all applicable laws, regulations and ordinances governing Work including, but not necessarily limited to, those of:
   1. California Code of Regulations (CCR), Title 24, California Building Standards Code
      a. CAC – 2013 California Administrative Code, 24 CCR Part 1
      b. CBC – 2013 California Building Code, 24 CCR Part 2 ('12 IBC w/CA Amendments)
      c. CEC – 2013 California Electrical Code, 24 CCR Part 3 ('11 NEC w/CA Amendments)
      d. CMC – 2013 California Mechanical Code, 24 CCR Part 4 ('12] UMC w/CA Amendments)
      e. CPC – 2013 California Plumbing Code, 24 CCR Part 5 ('12 UPC w/CA Amendments)
      f. 2013 California Energy Code, 24 CCR Part 6
      g. CFC – **2013** California Fire Code, 24 CCR Part 9 ('12 IFC w/CA Amendments)
      h. CALGreen – 2013 California Green Building Standards Code, 24 CCR Part 11
      i. CRSC – 2013 California Reference Standards Code, 24 CCR Part 12
   2. California Code of Regulations (CCR), Title 19, Public Safety, Division 1, State Fire Marshal.

B. Administrative Regulations, CCR Title 24, Part 1, California Administrative Code:
   1. DSA not subject to Arbitration.
   2. Copy of Part 1 and Part 2, Volume 1 and 2 (CBC), and Parts 3 through 5 of Title 24 CCR, shall be kept and made available at the construction site office during construction.

C. ADA – Americans with Disabilities Act of 1990, as amended
   1. Standards – ADA Title II Regulations and the 2010 ADA Standards for Accessible Design.

D. Enforcement includes all other codes, regulations, or standards referenced in the above listed codes.

E. The preceding listed codes, regulations and ordinances of the regulatory agencies are hereby made a part of this Contract. Nothing in the Contract shall be construed as allowing any violation of any provision of any of above listed documents.

F. The intent of these drawings and specifications is that the work of the alteration, rehabilitation or reconstruction is to be in accordance with Title 24, California Code of Regulations. Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the contract documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required work shall be submitted to and approved by DSA before proceeding with the work.

G. Should any existing conditions such as deterioration or noncomplying construction be discovered which is not covered by the DSA approved documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by DSA before proceeding with the repair work.

1.09 VARIATIONS WITH LAWS

A. If Contractor, his subcontractors or suppliers, or any of their employees ascertain at any time that requirements of this Contract conflict with or are in violation of applicable laws, codes, regulations and ordinances he shall not proceed with Work in question, except at his own risk. Contractor shall be required to remove that Work from site and replace such Work with all complying Work at no additional cost to Owner.

1.10 SELECTION AND PAYMENT - TESTING LABORATORY AND SPECIAL INSPECTORS

A. Owner will employ and pay for services of independent Testing Laboratory and Special Inspectors approved by Architect and DSA to perform inspection and testing in accordance with Part 1, Title 24, Section 4-335, California Code of Regulations and this Section. Lab shall **possess** DSA LEA program acceptance.

B. Offsite fabrication requiring Inspection and Testing: submit the qualifications of Inspectors and laboratory, including proposals for services, to the Owner and Architect and DSA for approval of qualifications and costs. Inspectors and laboratories shall conform to the requirements of Part 1 Title 24 Section 4-335.

C. Inspector of Record (IOR) / Testing Laboratory Travel Expenses

1. Initial Testing. For initial testing required by this Manual, Owner shall pay IOR, Testing Laboratory or both, for travel expenses, including mileage, room and board, when travel for inspection and testing of products purchased by the Contractor exceeds 50 miles or 2 hours from the project site.
2. Additional Testing. When initial testing fails, IOR and Testing Laboratory travel expenses, as described above, attributable to required retesting shall be borne by the Contractor and will be deducted by Change Order from funds due and payable, or that become due and payable to Contractor.
3. IOR, Testing Laboratory or both, as applicable, shall forward billings and records of such expenses to the Owner.

D. When tests and inspections are required on an overtime basis, initial payment will be made by Owner. At termination of Work or completion of Project, all costs for overtime testing and inspections will be deducted from Contractor's final payment (or any funds due and payable) by Change Order.

E. Before the Testing Laboratory files testing and inspection billings with Owner, they shall be billed indicating segregated straight time from overtime costs. All overtime costs shall be substantiated with detailed explanation for necessity of such work costs.

F. When materials tested fail to meet requirements herein specified, they shall be promptly corrected or removed and replaced, re-inspected and retested in a manner required by the Architect. Costs involved in re-inspection and retesting will be paid by the Owner and deducted from Contractor's final payment (or any funds due and payable) by Change Order.

G. Employment of testing laboratory shall in no way relieve Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.11 LABORATORY RESPONSIBILITIES

A. Laboratory shall be licensed to conduct testing and inspection operations in California and shall be approved by DSA. It shall be supervised by a State Licensed Civil Engineer who shall certify and sign all reports.

B. Provide qualified personnel at site. Cooperate with Architect, Project Inspector and Contractor in performance of services.

C. Perform specified inspection, sampling and testing of products in accordance with standards specified herein.

D. Ascertain compliance of materials and mixes with requirements of Contract Documents.

E. Promptly notify Architect, Project Inspector and Contractor by letter of observed irregularities or non-conformance of Work or products.

F. Perform additional inspections and test required by Architect or governing agencies.

G. Immediately upon Testing Laboratory determination of a test failure, the laboratory shall telephone the results of test to Architect. On the same day, laboratory shall send written test results to those named on the distribution list below.

1.12 LABORATORY REPORTS

A. After each inspection and test, promptly submit one copy of laboratory report to the following:
   1. Owner
   2. Contractor
   3. Inspector of Record (IOR)
   4. Special Inspectors: Special Inspector's Verified Reports as required by Section 4-336 and shall be submitted in a timely manner.
   5. Architect
   6. Structural Engineer
   7. Mechanical and Electrical Engineers (Related Tests and Inspections).
   8. Division of the State Architect (DSA)

B. Include:
   1. Date issued.
   2. Project title, Architect's number, DSA Application and File number.
   3. Name of inspector.
   4. Date and time of sampling and Specifications Section.
   5. Identification of product and Specifications Section.
   6. Location in the Project.
   7. Type of inspection or tests.
   8. Date of test and ambient conditions at time of test.
   9. Results of tests.
   10. Conformance with Contract Documents.
   11. Signature by Registered Professional Engineer licensed in California.
   12. Statement that tests were conducted in accordance with Parts 1 and 2, Title 24, California Code of Regulations.

C. Test reports shall include tests made, whether such tests indicate that the material performed satisfactorily or not. Samples taken but not tested shall be reported. Reports shall show that the materials were sampled and tested in accordance with the requirements of the approved Specifications. Reports shall show the specified design strength and shall state whether or not the materials tested comply with requirements. Report special sampling operations where required.

D. Submit a report verifying that tests and inspections herein specified and otherwise required have been completed and material and workmanship complies with the Contract Documents. Such verification reports shall be submitted at the completion of the Project and at any time the Project is suspended. Parties to receive such reports are the same as listed above.

E. When requested by Architect, provide interpretation of test results.

1.13 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter or enlarge on requirements of Contract Documents.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not assume any duties of Contractor.

D. Laboratory has no authority to stop the Work.

E. Laboratory shall not interpret code in relation to the design of the building.

1.14 CONTRACTOR RESPONSIBILITIES

A. Administration of construction by Contractor per CAC Sections 4-330 and 4-343.

B. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing. Selection of materials required to be tested shall be by the Lab or Owner's Representative and not by the Contractor.

C. Cooperate with laboratory personnel, Owner's Representative, Project Inspector and the Architect, and provide access to the Work including weekends and after work hours and to manufacturer's facilities.

D. Provide incidental labor materials and facilities to provide at all times, safe access to Work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, storage and curing of test samples.

E. Notify Architect, Project Inspector and laboratory 24 hours prior to expected time for operations requiring inspection and testing services. Contractor shall pay for costs incurred if testing or inspections are cancelled and are required to be rescheduled due to the Contractor's failure to notify the Project Inspector in advance as required. Also, notify Owner in advance of manufacturer of materials to allow testing at source of supply.

F. In accordance with CBC-17A, Section 1704.A, Contractor shall execute and submit a Statement of Responsibility regarding special inspections and testing required for principle wind- and seismic-load bearing systems to the Inspector of Record and the Owner.

G. The Owner, Project Inspector, DSA, or the Architect shall have the right to reject materials and workmanship that are defective or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without cost to the Owner. If the Contractor fails to correct such rejected Work within a reasonable time, fixed by written notice, the Owner will correct same and charge the expense to the Contractor by Construction Change Directive.

H. Should it be considered necessary or advisable by the Owner at any time before date of completion of the entire Work to make an examination of Work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such Work is found to be defective in any respect due to fault of the Contractor or his subcontractor, all extra expenses shall be charged to the Contractor by Change Order. If however such Work is found to meet the requirements of the Contract Documents, the additional cost of labor and materials involved in the examination and for replacement costs shall be allowed to the Contractor by Change Order.

I. When changes of construction schedule are necessary during construction, coordinate such changes with the Testing Laboratory as required.

J. When the Testing Laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, extra charges for testing attributable to the delay shall be charged to the Contractor by Change Order.

K. Inspecting and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

L. Selection of materials to be tested shall be made by the Testing Laboratory or the Project Inspector and not by the Contractor.

M. Any material shipped by the contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required, shall not be incorporated in the Work.

1.15 EXPANSION BOLTS OR EPOXY-TYPE ANCHORS - APPROVED ANCHORS

A. Anchors complying with requirements of CBC 1913A.7 and allowable shear and tension values and test loads shall be acceptable to DSA. Post-installed anchors must be listed in a current evaluation report issued by an evaluation agency recognized by DSA

B. Basis of Design Capacities: Design capacities for expansion type and epoxy (adhesive) type anchors should reflect the tested capacity of the anchors including the degree of scatter in the recorded peak loads and the load-displacement response, the type and mechanical properties of the concrete or masonry in which the anchor is installed, anchor edge distance and spacing, and whether the anchors are installed through metal decking into concrete fill. In addition, the potential for concrete cracking in the vicinity of the anchor during its service life and the effect of such cracking on the capacity of the anchor to resist loads shall be considered. The effects of temperature variations on epoxy (adhesive) type anchors shall also be taken into account where applicable. The age, composition and mechanical properties of the materials in which the anchor will be installed shall be evaluated.

C. The relevant mechanical properties include unit weight, compressive strength, and aggregate size and type. Evaluation of compressive strength on the basis of cores taken at or near the anchor locations shall be permitted. The compressive strength of the material in which the anchor will be installed shall meet or exceed the compressive strength of the material in which the anchor was tested.

D. Expansion-type anchors: Concrete
   1. As noted on plans

E. Expansion-type anchors: Concrete filled CMU Masonry
   1. As noted on plans

F. Epoxy-Type Adhesive Anchors:
   1. As noted on plans

G. Expansion-type anchors. Expansive type anchors may be used, provided the allowable shear and tension loads are determined by test in accordance with following:
   1. The design values listed in an ICC-ES Evaluation Service Report, with special inspection, may be used. Strength design values may be used provided the anchors have been tested in accordance with AC193, latest revision, including the seismic qualification tests of ACI 355.2 Sections 9.6 and 9.7 and Annex 1 of AC-193.
   2. If anchors have not been tested in accordance with the requirements for seismic qualification tests of AC 01, Section 5.6, the allowable load values listed in the ICC-ES Report may be used with the following modifications:
      a. Allowable shear and tension loads shall be limited to 80% of the tabulated allowable values for anchors installed with special inspection.

H. Epoxy-type anchors. Epoxy-type (adhesive) anchors include anchors that rely on organic and inorganic compounds (including) epoxies, polyurethanes, methacrylates and vinyl esters) to develop the bond to the concrete.
   1. The use of shallow epoxy-type (adhesive) anchors to resist direct tension loads where concrete cracking may occur is not permitted. Shallow epoxy-type (adhesive) anchors are those with an embedment to diameter ratio less than 8.
   2. Epoxy-type (adhesive) anchors should only be installed in conditioned, interior spaces. Where epoxy type anchors are used as shear dowels at the perimeter of an existing opening (slab or wall) to be filled with concrete, or are being used to connect new concrete elements to existing concrete elements (e.g. gunite), they may be installed in exterior locations with prior approval by DSA**.**
   3. If epoxy-type (adhesive) anchors are exposed to fire, all anchors in the affected area shall be inspected and evaluated by a qualified person to ensure their load carrying capability has not been compromised.
   4. The design shear and tension capacities of epoxy-type anchors must be determined in accordance with the following: ACI 318-11 and ICC ESR Report.
      a. The allowable loads may be based on the values listed in an ICC ES Report that complies with requirements of AC 58 for a specific anchor in the same configuration as tested. Supporting data shall include the Seismic Qualification test performed in accordance with procedures of Section 5.3.7 of AC 58.

b. Where epoxy-type (adhesive) anchors are used for structural applications, such as dowels between new and existing concrete the anchors shall be installed in a manner such as that the ultimate tensile capacity is controlled by the ultimate strength of the steel element.

c. When epoxy-type (adhesive) anchors are used to resist tensile forces in structural applications, the minimum depth of embedment shall be greater than or equal to the development length, ld, determined in Section 1907A for a cast-in-place reinforcing bar of the same diameter and grade when considering a tensile splitting failure mode. Where tensile splitting need not be considered, the depth of embedment, may be determined in accordance with Appendix D of ACI 318-11 as amended by Section 3.3 of AC 308.

I. Embedment, Spacing, and Edge Distance: All anchors shall meet the minimum embedment, spacing, edge distance, and slab thickness criteria established by the relevant ICC-ES Report.

1. Unless otherwise noted in the Report, the edge distance should be a minimum of ten (10) bolt diameters from the free edge of the slab and center-to-center spacing should be a minimum of twelve (12) bolt diameters.

J. Holes shall be clean and free from dust immediately prior to installation of the anchor.

1.16 TESTING AND INSPECTION REQUIREMENTS FOR EXPANSION AND EPOXY ANCHORS

A. Post-installed anchors shall be tested in accordance with the provisions of CBC Section 1913A.7 by an accepted testing facility or Special Inspector. If any anchor fails testing, test all anchors of the same type, not previously tested until twenty (20) consecutive anchors pass, then resume the initial test frequency. If the anchors are used for the support and bracing of non-structural components (pipe, duct or conduit), the twenty (20) shall be only those anchors installed by the same trade. Refer to 1.19G.8 on the Test Values Table (this Section) for acceptance/failure criteria.

B. Structural Applications: Tension test all expansion-type anchors. Expansion-type anchors shall not be used as hold-down bolts. When used for sill plate bolting application 10% of the anchors shall be tension tested.

C. Non-Structural Applications: Tension test 50% or alternate bolts including at least one-half the anchors in each group, shall be tension tested. in a group. Nonstructural may include such applications as equipment anchorage.

D. Tension testing shall be done in the presence of the project inspector and a report of the test results shall be submitted to DSA. If any anchors fail the tension-testing requirements, the additional testing requirements shall be acceptable to DSA..The requirements shall also apply to bolts or anchors set in concrete with chemical (adhesives) if the long-term curability and stability of the chemical material and its resistance to loss of strength and chemical change at elevated temperatures are established to the satisfaction of the DSA.

E. Expansion Type Anchors Setting Verification:

1. Torque-Controlled Anchors: Following attainment of 10% of the required torque, torque-controlled anchors shall not require more than six (6) additional complete turns of the nut during installation to achieve the manufacturer's specified installation torque. The extent of bolt projection after installation shall be measured to confirm that this requirement has been meet.
2. Displacement-Controlled Anchors: The position of the plug in the anchor shell shall be checked with the manufacturer-supplied installation tool or other appropriate device. The position of the plug shall conform to the manufacturer's specifications.

F. Testing for Expansion-Type Anchors: [Comply with OSHPD CAN 2-1916.8] The test load may be applied by any method that will effectively measure the tension in the anchor, such as direct pull with a hydraulic jack, calibrated spring loaded devices, or a calibrated torque wrench. Displacement-Controlled anchors such as drop-in shall not be tested using a torque wrench. Required test loads may be determined by either of the following methods:
1. Twice the allowance tension load as determined in Article 1.18., or;
2. Tension or torque test values from the table and procedures below.
3. Anchors tested with a hydraulic jack should exhibit no discernable movement during the tension test, e.g., as evidenced by loosening of the washer under the nut. Anchors tested with a calibrated torque wrench must attain the specified torque within ½ turn of the nut.

G. Test Values: Conform to the following table for either Hardrock or Lightweight Concrete and Masonry:
1. All anchor bolts of the expansion type installed in concrete shall be one of the following or equal:
   a. ITW Red Head-Wedge Anchor-ICC/ES ESR-2427
   b. Hilti, Inc. - Qwik Bolt TZ - Wedge Anchor-ICC/ES ESR-1917
   c. Simpson - Strong Bolt - Wedge Bolt - Wedge Anchor-ICC/ES ESR-3037

Minimum Test Values - Normal Weight or Lightweight Concrete

ANCHOR			WEDGE
Dia(in)	Tension Load(lbs)	Torque(ft-lbs)	Nominal Embedment
-	-	-	-
3/8	1105	25	per drawings
1/2	2420	40	per drawings
5/8	4015	60	per drawings
3/4	4690	110	per drawings

2. All anchor bolts of expansion type installed in grout filled masonry shall be one of the following or equal:
   a. Hilti, Inc - Kwik Bolt III-Wedge Anchor-ICC/ES NO.1385
   b. Simpson-Wedge All-Wedge Anchor-ICC/ES NO. 1396
   c. Minimum Test Values - Grout Filled Concrete Masonry

ANCHOR			WEDGE
Dia(in)	Tension Load(lbs)	Torque(ft-lbs)	Embedment(in)
1/4	432	4	2
3/8	626	15	2-1/2
1/2	724	25	3-1/2
5/8	1035	65	4

3/4	1368	120	4-3/8

3. Anchor diameter refers to the thread size for the WEDGE ANCHORS.
4. Reaction loads from test fixtures may be applied close to the anchor being tested, provided the anchor is not restrained from withdrawing by the fixture(s).
5. Test equipment (including torque wrenches) shall be calibrated by an approved testing laboratory in accordance with standard recognized procedures.
6. The following criteria apply for the acceptance of installed anchors:
   a. Hydraulic Ram Method: The anchor shall have no observable movement at the applicable test load. For wedge and sleeve anchors, a practical way to determine observable movement is that the washer under the nut becomes loose
   b. Torque Wrench Method: The applicable test torque must be reached within the following limit for wedge type:
      1) Wedge or Sleeve type: One-half (1/2) turn of the nut.
      2) One-quarter (1/4) turn of the nut for the 3/8 inch sleeve anchor only.
7. Testing shall occur within 24 hours after installation.
8. If the manufacturer's recommendation installation torque is less than the test torque listed in the table above, the manufacturer's installation torque shall be used in lieu of the tabulated values.

1.17 EPOXY-TYPE (ADHESIVE) ANCHORS AND SCREW-TYPE ANCHORS

A. Epoxy-type (adhesive) anchors shall be tension tested per Section 1913A.7 . The tension test load shall equal twice the allowable load for the specific location of the anchor to be tested (i.e., accounting for edge distance) or 80% of the yield strength of the bolt (0.8AbFy), whichever is less. The test procedures for expansion-type anchors in the attached table shall also be used for epoxy-type (adhesive) anchors. Torque testing of epoxy-type (adhesive) anchors is not permitted.

B. Where epoxy-type (adhesive) anchors are used as shear dowels across cold joints in slabs on grade and the slab is not part of the structural system, testing of those dowels is not required.

C. Anchors shall exhibit no discernible movement during the tension test.

D. Screw Anchors: The fastener is produced from hardened steel with threads, similar in appearance to a lag bolt. Screw anchors may be used, provided the allowable shear and tension loads are determined in accordance with the following:
   1. The allowable values listed in an ICC ES Report, with special inspection, may be used for allowable stress design, provided the report states that the anchors were tested in accordance with AC 106, latest revisions, including the seismic qualification tests of AC106 Section 4.6.
   2. Welding to these anchors is not permitted.
   3. Screw anchors may be used to attach components, such as equipment, mechanical vibration isolators or snubbers, to structural (reinforced) concrete, or for sill bolting applications. All screw anchors installed through a wood sill plate requires a plate washer in conformance with Section 2308.6.
   4. The use of screw anchors is not permitted in overhead applications or for discrete hold down forces, such as shear walls.

5. Masonry Anchors: 1/4” diameter, Tapcon with Advance Threadform Technology, heat-treated steel, by Illinois Tool Works/Buildex, ICC-ESR-1671. Slotted Hex Washer Head.

E. Screw-type anchors shall be torque tested in accordance with the testing procedures in Test Values Table and procedures herein.

F. Screw-type anchors: Simpson Strong-Tie Titen-HD concrete anchor, 3/8, 1/2 and 3/4 inch diameter, ICC ESR-2713, by Simpson Strong-Tie, Pleasanton, CA or equal with ICC report number.

G. Screw-type anchors: Simpson Strong-Tie Titen-HD grout-filled CMU anchor, 3/8, 1/2, 5/8, and 3/4 inch diameter, ICC ESR-1056, by Simpson Strong-Tie, Pleasanton, CA or equal with ICC report number.

1.18 POWDER ACTUATED FASTENERS

A. Powder-Actuated Fasteners: Powder-actuated fasteners (shot pins) are not addressed by Chapter 1908A1.1 of CBC. Powder-actuated fasteners may be used for limited application provided the allowable shear and tension loads are determined in accordance with the following:
1. The allowable values listed in an ICC ES Evaluation Services Report, with special inspection, may be used for allowable stress design, provided the report states that the anchors were tested in accordance with AC 70, latest revision. Powder-actuated fasteners may be used for hanging metal suspension systems for lay-in panel ceilings and for the attachment of metal track in conjunction with non-bearing partitions. The use of powder-actuated fasteners for other applications shall be subject to review and approval of DSA.

B. Powder actuated fasteners (Shot Pins): Installer shall utilize tools recommended by the manufacture in compliance with the ICC code reports. Pins shall have a minimum diameter of 0.145 inch and be installed to conform to the load requirements of this Section and:
1. Tables 1 (driven into steel), 2 (driven into concrete), and 4 (driven into Structural. lightweight concrete) of ICC ESR-1663, Hilti or
2. Table 1 or 3 (driven into concrete), 2 (driven into steel), 5 (driven into structural lightweight concrete), and 6 (driven in hollow concrete masonry units) of ICC ESR-2138, Simpson Strong-Tie powder-actuated fasteners or
3. Table 1 and 2 (driven into concrete), 3 (driven into structural lightweight concrete), 5 (driven into steel) of ICC ESR-2811, Simpson Strong-Tie gas-actuated fasteners or equal with ICC report.

C. Allowable Loads: Limited to 100 lbs. maximum or 80% of ICC approved values whichever is less. Testing required.

D. Use of Powder actuated fasteners for tension loads is limited to support of minor loads such as suspended acoustical ceilings, ductwork and conduit. Permissible Loads for Ceiling Clip Assembly:
1. Normal-Weight Concrete: Ceiling Clip Assembly Hilti X-CW, minimum 0.138” diameter, minimum penetration 1-1/8”. Allowable Loads: 210 lbs. tension listed in ICC Report: ICC ESR 2184: 4000 psi Concrete Compressive Strength.

a. Type X-CW X-C 32 KWIK, by Hilti, Inc., Tulsa, OK, or equal.

2. Lightweight Concrete: Ceiling Clip Assembly, minimum 0.138" diameter, minimum penetration 1-1/8". Required Allowable Loads: 150 lbs tension values listed in ICC ESR 2184: 3000 psi Concrete Compressive Strength.
   a. Type X-CW C-C 32, by Hilti, Inc., Tulsa, OK, or equal.
3. Use manufacture's drill bits and recommended tools.

E. Permissible Loads for Sills. Light gage steel and Interior Wood Plate Anchorages:
1. Low Velocity Power-Driven Fasteners: normal-weight concrete: Hilti DS and X-CR (stainless steel for exterior applications), 0.177", 0.145 for X-CR, shank diameter with washers, ICC-ESR Report ER-1663, Table 2. Exterior or Perimeter Sill and Interior Plate Anchorages.
2. Low Velocity Power-Driven Fasteners: normal-weight concrete: Simpson PDPWL-300, 3 inches long, 0.300 inch head diameter and 0.145 inch shank diameter with washer, ICC ESR-2138, Table 1 or 4. Exterior or Perimeter Sill and Interior Plate Anchorages.

1.19 REQUIRED TESTING FOR POWDER ACTUATED FASTENERS

A. Testing: Operator, tool and fastener shall be pre-qualified by the Project Inspector.
1. Tools shall conform to ANSI A10.3 safety requirements for Powder Actuated Fastening Systems and to all OSHA requirements.
2. Manufacturer's representative shall provide safety training for all installation personnel and provide powder actuated tool operator certification in accordance with OSHA requirements.

B. The Project Inspector shall observe the testing of the first 10 fastener installations.

C. A test pullout load of not less than twice the design load or 200 lbs., whichever is greater, shall be applied to the fastener in such a manner as not to resist the spalling tendency of concrete in which the fastener is imbedded. Thereafter, random tests under the Project Inspector's supervision shall be made of approximately 1 in 10 fasteners.

D. Should failure occur on any fastener tested, all installations shall be tested until twenty consecutive fasteners pass, then resume the initial testing frequency.

1.20 INSTALLATION

A. When installing drilled-in anchors or powder driven pins in reinforced concrete, use care and caution to avoid cutting or damaging reinforcing bars. When required by the Architect, locate the reinforcing by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging reinforcing during installation. Maintain a minimum clearance of one inch between the reinforcing and the anchor and/or pin.

PART 2 - PRODUCTS

2.01 NOT USED

PART 3 - EXECUTION

3.01 NOT USED

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Temporary Utilities: Electricity, lighting, heat, ventilation, telephone service, water and sanitary facilities.

B. Temporary Controls: Barriers, enclosures, fencing, protection of Work and security.

C. Construction Facilities: Access, roads parking, progress cleaning, project sign, Architect's banner, and field office trailer.

D. Special Controls: Waste disposal facilities, Water Control, Dust Control, Erosion and Sediment Control, Noise Control, Pollution Control.

E. Comply with Title 24, Part 9, California Fire Code, Chapter 14 Fire Safety During Construction and Demolition, 2012 International Fire Code with City and State Amendments during all Phases of project.

F. INTERIM LIFE SAFETY MEASURES (ILSM) requirements in this Section.

1.02 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.03 TEMPORARY ELECTRICITY

A. Provide temporary electrical service suitable to conduct construction operations.

B. Connect to existing power service. Power consumption shall not disrupt Owner's need for continuous service.

C. Contractor to cooperate with Owner in ascertaining prorated cost of energy used for his portion of Work.

D. Provide power outlets for construction operations with branch wiring and distribution boxes located where needed. Provide flexible power cords as required.

E. Provide feeder switch at source distribution equipment.

F. Permanent existing convenience receptacles may be utilized during construction.

1.04 TEMPORARY LIGHTING

A. Provide and maintain adequate lighting for construction operations.

B. Maintain lighting and provide routine repairs.

C. Permanent building lighting may be utilized during construction.

1.05 TEMPORARY HEAT

A. Provide heating devices and heat as required to maintain specified conditions for construction operations.

B. Utilize Owner's existing heat plant, extend and supplement with temporary heating devices as required to maintain specified conditions for construction operations.

C. Contractor shall pay cost of energy used. Exercise measures to conserve energy.

1.06 TEMPORARY VENTILATION

A. Ventilate enclosed areas to assist cure of materials to dissipate humidity and noxious fumes and to prevent accumulation of dust, fumes, vapors or gases.

1.07 TELEPHONE SERVICE

A. Provide, maintain and pay for **one** telephone service line and telephone service to Project Inspector's field office at time of project mobilization. Project Inspector's telephone shall be equipped with exterior, clearly audible bell.

B. Provide, maintain, and pay for **color** copy machine with **scan/email and** 11 by 17 inch capability **for the Project Inspector**.

1.08 TEMPORARY WATER SERVICE

A. Connect to existing water source for construction operations. **If/when connected to a fire hydrant, provide a meter to be used for payment to Vallecito's Water District via Palomar College's invoicing**.

B. Contractor shall pay cost of water used. Exercise measures to conserve water.

C. Extend branch piping with outlets located so water is available by hose with threaded connections.

1.09 TEMPORARY SANITARY FACILITIES

A. Provide and maintain **men's and women's** facilities and enclosures. Existing facilities shall not be used.

1.10 TEMPORARY FIRE PROTECTION

A. Provide fire protection during construction according to CFC Chapter 14, International Fire Code with City and State Amendments including but not limited to fire extinguisher requirements and exit access requirements.

B. Conform to Title 24, Part 9, California Fire Code, Chapter 14, International Fire Code with City and State Amendments, Fire Safety During Construction/Demolition.

1.11 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades required by governing authority for public rights-of-way and for public access to existing facilities.

C. Clearly mark extent of fire lane and barricade as required to ensure the 20-foot minimum required fire truck clearance (during construction) is maintained. Provide steel trench plates at all trenches in fire lane to maintain access at all times.

D. Provide protection for plant life designated to remain. Replace damaged plant life.

E. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

F. Provide steel trench plates, orange mesh fencing, construction site marker and other protective means to keep site and users, Owner's personnel, visitors and students safe, protected, and separated from ongoing construction operations. Provide temporary access at all paths of travel. Yellow warning tape is not acceptable means of separation and protection. At all open trenching operations, enclose entire trenching operation area including stockpiled backfill within orange mesh construction fencing. Provide steel trench plate "bridges" at all walkways.
   1. Notify **Owner's Project Manager and** Fire Marshall at least 48-hours prior to beginning utility work in the existing Fire Lane.
   2. Allow Fire Marshall access at reasonable times during progress of the work for inspections.

1.12 FENCING FOR CONSTRUCTION OPERATIONS

A. Construction: Commercial grade chain link fence, removable panels, 1-3/4 inch mesh, 11 gauge, top and bottom knuckled selvage (closed end).
   1. Provide screen full height of fence, 1-3/4 inch mesh, 11 gauge, woven open mesh 100% polypropylene with 78 percent wind break, reinforced tape at grommets at 18 inches centers at perimeter, attach screen to chain link fence with 11 gauge hog rings by Roxford Fordell, Los Angeles, CA.

B. Provide **6-foot-high** fence around construction site **with mesh**; equip with vehicular and pedestrian gates with **daisy-chained** locks **for District's emergency access**.

C. Submit detailed fencing and construction traffic plan for review and approval by Architect **and Owner's Project Manager**.

D. At completion of project repair concrete or A.C. substrate, fill holes to match existing materials flush with adjacent surface.

1.13 STAGING AREAS

A. **See Staging Plan in these Bid Documents for allowable staging areas.** Coordinate with Owner for location, extent and type of construction staging area.

1.14 EXTERIOR ENCLOSURES

A. Provide temporary weather-tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual Specification Sections, and to prevent entry of unauthorized persons. Provide access doors with hardware and locks.

1.15 PROTECTION OF INSTALLED WORK

A. Protect installed Work and provide special protection where specified in individual Specification Sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.

C. Provide protective coverings at walls, projections, jambs, sills and openings. Provide protective and removal coverings for metal finishes intended to be exposed.

D. Prohibit traffic or storage upon waterproofed or roofed surfaces.

E. Prohibit traffic from landscaped areas.

1.16 SECURITY

A. Provide security and facilities to protect Work, existing facilities and Owner's operations from unauthorized entry, vandalism or theft.

B. Coordinate with Owner's security program.

C. Within **48-hour** period, replace or repair, to Architect's satisfaction, all surfaces or items damaged by graffiti during course of construction.

D. **Provide 48-hour notice to Owner's Project Manager of any shutdown of security or fire detection systems**. Where security or fire detection systems are disabled for any reason, including where Owner has given approval for such system shutdown, provide fire watch or security guard service as directed by Owner at no additional cost to Owner.

1.17 ACCESS ROADS

A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.

B. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.

C. Provide and maintain access to fire hydrants, free of obstructions. Where required by local fire authority, provide and maintain a **20-foot-wide** fire apparatus access road.

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Designated existing on-site roads may be used for construction traffic.

F. Where construction traffic occurs when students and staff are on campus, provide **flagmen on roadways during large deliveries or traffic blockages, and** "spotter" responsible for leading construction traffic through site areas.

G. Route construction equipment, trucks, and similar vehicles via existing public streets to and from site as approved by governing authorities.

1.18 PARKING

A. **T**emporary parking to accommodate construction personnel **will be provided by the District in Lot 12 west of the project site. Special parking passes will be provided to the Contractor in reasonable quantities upon request. Construction personnel are required to display parking passes at all times and shall be responsible for any ticketing if not properly displayed**.

B. When site space is not adequate, provide additional off-site parking.

1.19 PROGRESS CLEANING

A. Refer to Section 01 70 00 Execution Requirements and the requirements of this Section.

B. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.

C. Remove debris and rubbish from closed or remote spaces, prior to enclosing space.

D. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust. Clean substrate; remove dirt, oil, grease, construction markings, and foreign matter that could adversely affect surface finish appearance or performance.

E. Remove waste materials, debris and rubbish from site weekly and dispose off-site.

F. Maintain public streets free of mud, dust and debris and as required by jurisdictional authority.

1.20 PROJECT SIGNAGE

A. Provide project sign, as designed by Architect. Fabricate using exterior-grade plywood and wood frame construction, acrylic painted with exhibit lettering by professional sign painter.
   1. List title of Project, names of Owner and State of California Office of Public School Construction, Architect and Contractor.
   2. Erect on site at locations established by mutual agreement of Owner, Architect and Contractor.
   3. **For Construction Sign, refer to Drawings.**

B. Except for signs required by law, no other signs will be permitted without express written permission from Owner. Signs required by law may not obscure any of the banners.

1.21 FIELD OFFICE TRAILER(S)

A. Owner will provide space for **Owner Project Manager's** office and project meetings.

B. Field Inspector's Office Trailer: Provide a separate inspector's office trailer, weather tight with lighting, electrical outlets, communications capabilities, heating, cooling and ventilating equipment, minimum size; 160 sq. ft. No internal toilet is required. Provide a 30" x 72" desk, 72" plan table, 2 drawer lockable file cabinet, a desk chair, two side chairs plan rack suitable for 30" x 42" drawings. Inspector's office must be provided with a lockable door with security bars, and security screens on a minimum of two exterior window with adjustable shades. Provide private telephone line and access to the Internet to inspector's office.

C. Cost of use permits, occupancy permits and related fees, if any required by Governing Authorities for temporary construction facilities, shall be paid by Contractor.

D. Install no closer than 45 feet from project buildings in accordance with NFPA 241.

E. Maintain facility until Substantial Completion of entire project. Remove within 1 week of Substantial Completion.

F. Provide property insurance and protection.

1.22 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

A. Remove temporary above grade or buried utilities, equipment, facilities, materials prior to Certified Completion inspection.

B. Remove temporary underground or overhead installations.

C. Clean and repair damage caused by installation or use of temporary Work.

D. Restore permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.23 RELOCATION OF UTILITIES

A. Contractor shall not have responsibility of timely removal, relocation or protection of public utility facilities that are not identified by Owner in Drawings and Specifications, in accordance with California Government Code 4215. Owner shall compensate Contractor for costs of locating and repairing damage not due to failure of Contractor to exercise reasonable care in removing and relocating such public utility facilities. If Contractor, while performing Contract, discovers public utility facilities not identified by Owner in Contract Drawings or Specifications, he shall immediately notify Owner and utility in writing. Contractor shall not be assessed liquidated damages for delay when delay was caused by failure of Owner to provide for relocation for utility facilities.

1.24 WATER CONTROL

A. Do not permit surface, rainwater or subsurface water or other liquids to accumulate in or about premises and vicinity thereof. Should such conditions be encountered or develop, control water or other liquid shall be suitably disposed of by means of temporary pumps, piping, drainage lines, troughs, ditches, dams or other methods as reviewed by Architect and approved by authority having jurisdiction.

B. Dispose of rainwater in lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.

1.25 DUST CONTROL

A. Conduct earthwork operations in a manner to prevent windblown dust and dirt from interfering with progress of Work, Owner's activities and existing occupied structures in areas immediately adjacent as well as adjacent properties.

B. Periodically water construction areas as required minimizing accumulation of dust and dirt.

C. Water spray or cover with tarpaulins **truckloads** of soil to additionally minimize generation of dust and dirt from construction operations.

D. Prevent dust and dirt from accumulating on walks, roadways, parking areas and from washing into sewer and storm drain lines.

1.26 EROSION AND SEDIMENT CONTROL

A. Plan and execute construction by methods to control surface drainage from cuts and fills from borrow and waste disposal areas. Prevent erosion and sedimentation.

B. Minimize amount of bare soil exposed at one time.

C. Provide temporary measures such as berms, dikes and drains to prevent water flow over adjacent properties or City rights-of-way.

D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

1.27 NOISE CONTROL

A. **Avoid excessive noise where adjacent Owner's functions may be detrimentally affected. Contractor shall follow Palomar College working hours outlined in Division 01.**

B. Control of Construction Noise **and Allowable Working Hours:**

1. The project site is immediately adjacent to neighboring residential properties and Contractor shall be respectful of the neighbors.

2. Contractor shall be responsible for ensuring that no workers or vehicles are onsite generating any noise outside of the following working hours:

a. Monday – Friday, 7:30am – 5:00pm

b. Saturdays, 8:00am – 5:00pm (upon approval with 48-hour notice)

c. Sundays and holidays, no work permitted.

3. **No unnecessarily loud noise, or inappropriate conversation is permitted at any time**.

C. Noise Control Plan: Submit Noise Control Plan after the Contract is awarded, prior to the commencement of the work, Contractor shall meet with the Owner to discuss the proposed Noise Control Plan and to develop mutual understanding relative to details of the Plan.

1. The Noise Control Plan shall comply with the constraints set forth by the Owner, and be in compliance with the noise control laws of the City of San Marcos.
2. **Submit a plan showing the allowable working hours**.
3. Submit a description of the instruments to be used in monitoring noise.
4. Show the areas and boundaries where noisy work will occur.
5. Approval of the Contractor's Noise Control Plan will not relieve the Contractor of responsibility for proper and continuing control of noise throughout the project site.

1.28 POLLUTION CONTROL

A. Provide methods, means and facilities to prevent contamination of soil, water and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.

B. Burning of refuse, debris or other materials will not be permitted on Site.

C. Comply with regulatory requirements and anti-pollution ordinances during course of construction and disposal operations.

1.29 WASTE DISPOSAL FACILITIES

A. Comply with requirements of Authorities Having Jurisdiction. Remove loose refuse and dispose off-site legally.

B. Provide waste-collection containers in sizes adequate to handle waste from construction operations.

C. Provide and maintain trash bins on the Project site. Trash bins shall be serviced on an as needed basis.

1.30 PROTECTION OF EXISTING FACILITIES AND SITEWORK

A. Provide site plan of proposed route of construction equipment for approval by Owner.

B. Use caution to minimize disturbance and damage to existing landscaped areas and sitework.

C. Protect sidewalks, curbs, entry areas and utilities.

D. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) and irrigation on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract.

E. Protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work.

F. Repair landscaped areas, irrigation and sidewalks and any other damaged facilities where trucks, erection equipment or other construction equipment was used in removal and replacement of the HVAC units during construction. Repair damaged areas to match existing construction to satisfaction of the Owner, and at no additional cost to the Owner.

1.31 CONTRACTOR CONDUCT AND DRESS CODE

A. Contractor's and subcontractors' personnel shall observe and abide by Owner requirements concerning appropriate conduct, loud noise (unrelated to construction activities) and dress requirements for a safe and un-disturbing work place. Conduct work activities in a professional manner at all times.

B. No harassment or interactions with students, faculty or staff is permitted at any time. Palomar College has a zero-tolerance policy and offending personnel will be removed from the project. If students, faculty or staff approach Contractor's personnel, Contractor shall refer the individual to the Owner's Project Manager, or contact the Owner's Project Manager immediately.

C. Dress Code requirements: contractor's personnel shall wear traditional work attire or uniforms without logos, graphics or wording detrimental to work [school] environment; unless logos, graphics or wording are for business identification purposes.

D. Identification badges issued by the Owner shall be worn at all times, worn on the left side shirt-pocket area, displayed in full view and not concealed.

E. No radios permitted.

F. Owner reserves the right to remove any person(s) not observing conduct and dress requirements specified herein.

1.32 MOBILIZATION AND DEMOBILIZATION

A. The work consists of the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the contract. It does not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract. Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

B. Mobilization: Equipment and Material: Mobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable.

C. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site specifically for this contract.

D. This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted, or added items of work for which the contractor is entitled to an adjustment in contract price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.

E. Payment: Payment will be made as the work proceeds, after presentation of paid invoices or documentation of direct costs by the contractor showing specific mobilization and demobilization costs and supporting evidence of the charges of suppliers, subcontractors, and others. When the total of such payments is less than the lump sum contract price, the balance remaining will be included in the final contract payment. Payment of the lump sum contract price for mobilization and demobilization will constitute full compensation for completion of the work.

F. Payment will not be made under this item for the purchase costs of materials having a residual value, the purchase costs of materials to be incorporated in the project, or the purchase costs of operating supplies.

1.33 INTERIM LIFE SAFETY MEASURES (ILSM)

A. The Interim Life Safety Measures (ILSM) itemized below are a series of administrative actions that must be taken to compensate for the hazards posed by NFPA 101 - 2003 Life Safety Code (LSC) deficiencies temporarily caused by construction activities. In addition, the ILSM shall include all applicable sections of NFPA 241, Safeguarding Construction, Alteration, and Demolition Operations, a copy of which shall be maintained at the site by the Contractor for reference.

B. ILSM must be implemented in, or adjacent to, all construction areas within the scope of work of this contract. ILSM apply to all construction personnel, including personnel of the General Contractor, Sub-contractors, Vendors, Suppliers, and any other personnel under the supervision and coordination of the General Contractor. ILSM shall be continuously enforced by the Contractor throughout the duration of the Contract. The Contractor shall comply with all the ILSM and shall be responsible and liable for the consequences of failing to comply, including a Type 1 Deficiency issued by the Joint Commission on Accreditation of Health Organization (JCAHO) and the loss of the Owner's JCAHO accreditation.

C. The Contractor shall ensure that exits provide free and un-obstructive egress.
   1. Unless provided elsewhere, the Contractor shall provide a Construction Egress Plan, showing temporary barricades, egress paths, and exits from, around, and (if necessary through) the construction area. Temporary exits shown on the Plan must be identified with exit signs approved by the local authority having jurisdiction.
   2. The Contractor shall present the Plan to and obtain approval from the Owner and the local authority having jurisdiction prior to implementation.
   3. The Contractor, in conjunction with the Owner, shall conduct an ILSM meeting prior to the commencement of the work. The purpose of the meeting will be to present the Construction Egress Plan and to review the ILSM. The meeting shall be attended by the Owner's and the Contractor's designated personnel. The Contractor is responsible to present the ILSM to all personnel under his supervision and coordination, whether or not they attend the ILSM meeting.
   4. The Contractor shall update and revise as required by construction progress and phasing.
   5. The paths of egress and exits shown on the Plan must be inspected daily and maintained at all times.

6. Where temporary alternate exits cannot be provided, the Contractor shall provide a continuous, 24 hour per day Fire Watch, consisting of one designated person per floor assigned solely to observing and reporting fire and life safety conditions and hazards to the General Contractor and the Owner, as well as initiating any required code red alarms.

D. The Contractor shall ensure free and unobstructed access to emergency departments and services for emergency forces.

E. The Contractor shall ensure that fire alarm, detection, and suppression systems, as well as structural and compartmentation features of fire safety outside the construction area are not impaired or compromised.
   1. When the existing fire systems or fire safety features outside the construction area must be impaired or compromised a temporary but equivalent system or feature shall be provided. All temporary systems must be tested and inspected monthly.
   2. In lieu of temporary systems or features, the Contractor may provide a Fire Watch as described in Item C.6 above and other measures as required by the authority having jurisdiction.

F. The Contractor shall ensure that temporary construction barricades and barricade doors are smoke tight and made of non-combustible or limited combustible materials that will not contribute to the development of smoke or fire.

G. The Contractor shall provide additional fire-fighting equipment and user-training for his personnel.

H. The Contractor shall ensure the prohibition of smoking by his personnel in accordance with MA.1.3.15 of the “Management and Administrative Service” manual, Volume 1, a copy of which shall be provided to the Contractor by the Owner.

I. The Contractor shall develop and enforce storage and debris-removal practices that reduce the flammable and combustible fire load of the construction area to the lowest level necessary for daily operations.

J. The Contractor shall conduct a minimum of one fire drill every month throughout the duration of the project.

K. The Contractor shall provide daily hazard surveillance of the construction area with special attention to excavations, construction storage, and field offices.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials for temporary work may be new or used.
   1. Use materials that are adequate in capacity for the required use and loads.
   2. Do not use materials that would create unsafe conditions.
   3. Do not violate requirements of authorities having jurisdiction.

4. Sticky Track Mats: Trim-Tack Adhesive mats by Markell Industries, Manchester, CT or equal. At carpet floors provide “Velcro Brand Carpet” protection in lieu of sticky mats.

B. Electrical Materials
   1. Power Receptacles: 15 ampere, 120 volt, duplex grounding type with ground fault circuit interrupters. Furnish in suitable boxes with hinged cover plates.
   2. Light Fixtures and Lamps: Medium-base, rubber pigtail, type lamp sockets or porcelain lampholders furnish with boxes, and lamps.
   3. Conductors: insulated copper or aluminum, with phase conductor insulation rated for the circuit voltage, and insulation or jacketing suitable for the conditions, and branch circuit conductors - No. 12 AWG minimum size, except No. 10 AWG where length of branch circuit exceeds 100 feet.

C. Mechanical Materials
   1. Portable Equipment may be new or used, temporary units that will not damage construction materials or processes, that will not create unhealthy conditions for workers, and that can be operated with approval from the authorities having jurisdiction.
   2. Fixed Equipment may be new or used, temporary or permanent, devices including any heat generating or cooling equipment that can be operated in a safe manner and with approval from the authorities having jurisdiction.
   3. Fuel. Use only devices that burn either natural gas or fuel oil.
      a. Store fuel oil in portable tanks with a 60 gallon maximum capacity, located on the same level as the devices, and equipped with fills and vents outside the enclosed space.
      b. Locate the tanks a minimum of 10 feet from heating devices. Label tanks with proper type of fuel.
      c. Biodiesel Fuel: B20 blend, 20% vegetable oil and 80% petrodiesel, per ASTM D7467-10.
      d. Diesel engines: no equipment/engine modification required for B20 biodiesel.

PART 3 - EXECUTION

3.01 REMOVAL

A. Remove all temporary control measures in accordance with regulatory requirements at completion of construction.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Products

B. Transportation and handling.

C. Storage and protection.

D. Product options.

E. Substitutions

1.02 PRODUCTS

A. Product: means new material, machinery, components, equipment, fixtures and systems forming Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of Work. Products may also include existing materials or components required for reuse.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Provide interchangeable components from the same manufacturer.

1.03 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.04 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.

B. For exterior storage of fabricated products, place on sloped supports, above ground and protect as necessary to prevent deterioration or damage to the product.

C. When approved by the Owner, provide off-site storage and protection in a bonded warehouse approved by Owner when site does not permit on-site storage or protection at no cost to Owner.

D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

E. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement or damage.

G. Arrange storage of products to permit access for inspection. Periodically inspect to ensure products are undamaged and are maintained under specified conditions.

1.05 PRODUCT OPTIONS

A. Where products are specified by reference standards or by description only, provide products meeting those standards or that description, made by a manufacturer acceptable to Architect.

B. Where products are specified by naming one or more manufacturers, provide products of one of the named manufacturers that meets or exceeds specifications.

C. Where any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction is indicated or specified by name, make, trade name, or catalog number, whether with or without the phrase "or equal," such specification shall be deemed to establish the minimum qualities of function, dimension, appearance, and performance (collectively the Basis of Design) for that material, process, or article. Such specification shall be deemed to be followed by the phrase "or equal."

D. If a named product, or named manufacturer’s equivalent product does not fully meet the specification, that manufacturer shall provide a custom or modified product to meet the specification.

E. Where expressly noted “no substitutions” in individual Sections, no product options are permitted.

F. When the phrase “or equal” is used or implied, it shall mean “an equivalent product, approved by the Architect in accordance with the requirements of this Section.”

G. Products, proposed as substitutions, shall conform to requirements listed in the respective Section of this Manual and have at least 10 successful installations in commercial projects similar in scale and complexity to those required for this Project that have been in service for minimum of 5 years and remain in satisfactory condition.

1.06 SUBSTITUTIONS

A. Manufacturers and products listed in Specifications form basis for design and quality intended. Bidders may propose substitutions of equal design and quality and must be accompanied by completed Request Form included at end of this Section, other forms not permitted. Submit separate form for each proposed substitution. Except for Sections listed in Section 09 06 00 Schedules for Finishes that require submittal prior to bid, all substitution requests shall be submitted as required herein.

1. Substitution requests, if any, shall be submitted to Architect **by the last day for Requests for Information noted in the Front End Documents prior to the advertised bid date**. Architect will issue acceptance or rejection of request.

B. Substitutions must clearly be in Owner's best interest because of quality, cost, performance, conformity to code requirements or availability. Architect will make decision as to acceptance of proposed substitution.

1. Submittal of proposed substitutions shall be made only by Prime Contractor(s). Architect will not review direct submittal by manufacturers, suppliers or subcontractors.
2. Burden of proof as to equality of any material, process or article shall rest with Contractor. Provision authorizing submissions of "or equal" justification data shall not in any way authorize an extension of time for performance of this Contract.
3. Substitutions shall, without exception, be manufactured of same basic materials and comply with or exceed all Specification requirements of dimension, function, structure and appearance, without deviation. Provide itemized comparison of quality and performance.
4. Use of approved substitutions shall in no way relieve Contractor from responsibility for compliance with Contract Documents after installation. Contractor shall assume all extra costs caused by use of approved substitute materials.
5. Statement indicating why specified material or product cannot be provided.
6. Coordination information, including list of changes or modifications needed to other parts of Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
7. Detailed side by side comparison of significant qualities of proposed substitution with those of the Work specified. Mark clearly affected specification Section for any differences from item specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect and specific features and requirements indicated.
8. Product Data Samples, including drawings and descriptions of products and fabrication and installation procedures.
9. List of similar installations for completed projects with project names and addresses and names and addresses of Architects and Owners.
10. Material test reports from qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
11. Cost information, including a proposal of change, if any, in the Contract Sum.
12. Substitutions for specified product, brand or manufacture that have been submitted and disapproved by Architect shall not be resubmitted in any modified form.
13. In case materials are substituted and installed without proper authorization, Contractor shall remove such materials and install those specified at his own expense.

14. Contractor shall determine effect approved substitutions will have on other portions of Work and so inform his subcontractors and employees of these effects.
15. Acceptance of proposed substitution shall be determined solely by specifying Architect. The final decision shall be the Architect's in accordance with the General Conditions.

C. Substitutions may be considered when product becomes unavailable through no fault of Contractor. Provide letter from manufacturer, on manufacturer's letterhead, stating lack of availability.

D. Unacceptable Substitutions: substitution requests initiated by late submittals that have caused materials to become unavailable due to delay in ordering and procurement will not be acceptable reason for substitutions.

E. Provide same warranty for substitution as for specified product.

F. Contractor shall pay costs for time required by Architect for review and for any redesign services associated with substitutions and for costs of re-approval by Regulatory Agencies.

G. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request.

H. Each subcontractor is responsible for providing products and construction methods compatible with products and construction methods of other subcontractors. If dispute arises between subcontractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

I. Substitution Submittal Procedure: In accordance with Division 01, General Requirements for Administrative Requirements and this Section.

J. All Substitutions for any material, system or product that would otherwise be regulated by DSA shall be included in an Addendum or Form DSA-140, and shall be approved by DSA prior to fabrication or use. (CAC Section 4-338(c) and IR A-6)

1.07 OWNER-FURNISHED, OWNER-INSTALLED WORK (OFOI)

A. Indicate in construction progress schedule owner-furnish owner-installed items and schedule time for installation.

B. Items indicated on Drawings as OFOI will be furnished by Owner and installed by Owner. Work indicated as OFOI will be performed under separate contract employees by Owner at its discretion. Where work of this Contract adjoins or conflicts with OFOI, work, Contractor shall cooperate with Owner and its employees in manner that will provide for reasonable and accurate completion of this Contract and work under separate contact.

C. Coordinate with OFOI work affecting this contract. Including verification and interfacing of this contract with OFOI work.

1.08 OWNER-FURNISHED, CONTRACTOR-INSTALLED WORK (OFCI)

A. Indicate in the construction progress Schedule Owner-Furnish Contractor-Installed items and schedule time for their installation.

B. Contractor shall verify exact sizes and services required for each item of equipment indicated on Drawings or in Project Manual as OFCI and shall obtain from Owner rough-in drawings, diagrams, setting templates and other necessary information to ensure proper mating of assemblies.

C. Contractor shall receive at project site each item of equipment from Owner and from that time on shall assume full responsibility for items and equipment until one year from date of Certified Completion.

D. Contractor shall give Owner 15 days prior notice of requirements for delivery to site of all OFCI equipment.

E. Contractor shall be responsible for receiving OFCI items and equipment and shall uncrate, inspect and notify Owner in writing within 7 days of receiving said items or equipment of acceptance or rejection of items or equipment. Owner, after receiving notice, will take appropriate action to have items or equipment made acceptable for Contractor's use. Rejected items shall be carefully stored and protected from damage by Contractor until Owner takes appropriate action.

F. Contractor shall be responsible for final placing, installation, connection, start-up, checking, testing and demonstrated satisfactory operation. Owner will provide names of manufacturer's representatives, who shall assist the Contractor in checking, testing and demonstrating equipment.

PART 2 - PRODUCTS

2.01 NOT USED

PART 3 - EXECUTION

3.01 NOT USED

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.01 ACRONYMS, ABBREVIATIONS AND DEFINITIONS

A. CAC - 2013 California Administrative Code (CCR Title 24, Part 1 as adopted and amended by DSA)

B. CFC - 2013 California Fire Code
   1. CFC-26 - CFC Chapter 26, Welding and Hot Work

C. Debris. Unless expressly specified or directed to be salvaged for the Owner's benefit, materials such as trash, rubbish, empty packaging, excess construction materials, removed materials generated from demolition, including concrete ruble, bricks, fencing, etc., unsuitable soils and materials resulting from site clearing, brush and tree removal are debris.

D. DSA - Division of State Architect, a division of California Department of General Services

E. Emergency Contact for Service means an employee, agent or service representative of a company that is available 24/7/365, including nights, weekends and holidays.

F. Identical Materials, for purposes of matching existing work, means material with the same formulation from the same manufacturer, that is well matched in visual and performance characteristics to the materials in the existing work.

G. Record Documents are the field record of actual progress of the work, created by a process of regular annotations made to the Construction Documents.

H. SCAQMD - South Coast Air Quality Management District:

1.02 ADMINISTRATIVE REQUIREMENTS

A. Promptly report to the Architect loss or destruction of any survey datum or reference point or relocation of such point required due to changes in or progress of the work.

B. Architect reserves right to withhold certification of Contractor's payment requests, in whole or in part, for Contractor's failure to keep Project clean in accordance with requirements of this Section.

1.03 SUBMITTALS

A. Action Submittals
   1. Statement of Qualifications from Land Surveyor
   2. Cutting / Patching Request

3. Samples of materials proposed as good match for patching, repair or extending existing work
4. Applications for Payment, including certifications that Record Documents are current

B. Record Submittals
1. Statement of Qualifications from professional cleaning company
2. Certified Copy of existing utility survey
3. Existing Condition Documentation

C. Closeout Submittals
1. Final Waste Management Report
2. O & M Manuals
3. Record Documents
4. Warranty Manual

1.04 QUALITY ASSURANCE

A. In addition to requirements specified in this Section, work and its execution shall comply with applicable requirements of authorities having jurisdiction.

B. Land Surveyor: licensed Surveyor in the State of California with minimum 3-year experience surveying construction sites and building layouts for commercial projects similar in scale, complexity and quality to those required for this Project.

C. Professional Cleaning Company, assigned to final cleaning prior to Owner occupancy, shall have minimum 6-years experienced cleaning commercial construction projects similar in scale, complexity and quality to those required for this Project.

D. Existing Condition Documentation: one or more of the following, individually or in any combination.
1. Photographs taken with film, submit 2 sets of 4- by 6-inch prints. Where needed for clarity or scale add a ruler or object of known size to foreground of image.
2. Digital Photographs shall have resolution and file size suitable for enlargement to 8- by 10-inch print.
3. Video recordings digital HD (High Definintion)

1.05 PROJECT RECORD DOCUMENTS

A. Owner will provide one set of Contract Documents for use during construction to record changes made and as constructed conditions of completed work.
1. Store Record Documents separate from documents used for construction.
2. To replace soiled or illegible documents, make arrangements directly with Architect.

B. Record, on weekly basis, in concise manner and using industry-standard drafting and annotation techniques revisions to work and the actual alignment of work shown diagrammatically including at least the following.
1. Changes made by Addenda
2. Changes made by Construction Change Directives, Instruction Bulletins, Architect's Supplemental Instructions, and other minor modifications to work

3. Change Orders or other executed Modifications to Contract
4. Changes made by Clarification Drawings
5. Changes made to Specifications, including actual material selections as well as accepted substitutions
6. Revisions made by acceptance of Shop Drawings, Product Data and Samples.

C. Specifications. Legibly mark-up each Section to identify actual products installed, including following and identify any changes to installation or testing procedures.
1. Manufacturer's name, trade name, product model and number and supplier
2. Indicate whether item is authorized product substitution
3. Cite changes made by Addenda and Modifications

D. Drawings. Legibly mark-up each sheet to record actual construction including at least the following.
1. Measured depths of foundations in relation to finish first floor datum.
2. Measured horizontal and vertical (invert) locations of underground utilities and appurtenances, including capped and abandoned piping left in place.
   a. Measures shall be referenced to permanent surface improvements.
   b. Identify drains and sewers by invert elevation.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of Work.
   a. Show actual routing and locations of piping and wiring shown diagrammatically in Contract Drawings.
   b. Identify ducts, dampers, valves, access doors and control equipment wiring.
4. Field changes of dimension and detail
5. Details not on original drawings

E. Obtain Project Inspector's signed affidavit that Record Documents are fully up-to-date prior to submitting monthly application for payment. Applications for Payment received without such affidavit will be rejected.

F. Reproducible Record Drawings. In addition to the Field Copy of Record Documents required by this Section, upon completion of Work incorporate changes and annotations from the Record Drawings onto reproducible Record Drawing set.

1.06 FIELD ENGINEERING QUALITY CONTROL

A. Contractor shall locate and protect survey control and reference points.
1. Control datum for survey is that established by Owner provided survey.
2. Maintain complete and accurate log of control and survey Work as it progresses.

B. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means, make use of laser instrumentation.
1. Site improvements including pavements; stakes for grading, fill placement; utility locations, slopes, invert elevations and batter boards
2. Grid or axis for structures
3. Building foundation, column locations, ground floor elevations
4. Floor elevations of existing structures that relate to project
5. Partition layouts on rough floor as a guide to all trades

C. Periodically verify layouts by same means.

D. On completion of foundation walls, floor slabs and major site improvements, prepare a certified survey illustrating dimensions, locations, angles and elevations of construction.

1.07 CUTTING AND PATCHING

A. Where Work requires that a portion of a construction element be removed, it is the intention of this Manual, that such cutting and patching is considered to be part of work for that construction element, whether or not specified in that Section.
   1. Where cutting and patching is incidental to installation of a specific item or piece of equipment such cutting and patching is considered to be part of work for that item or piece of equipment, whether or not specified in that Section.
   2. New Work required to patch such removals shall be considered a part of Sections covering similar new construction.
   3. Where doubt exists, Contractor shall determine which trade is responsible for cutting, patching, repairs and extensions.

B. Contractor shall verify and check areas to be cut and patched and shall coordinate work of various trades involved.

C. Where doubt exists as to size, location, or method of cutting concrete or any other structural element, Contractor shall contact Architect before proceeding.
   1. Cut steel in accordance with CFC-26.

D. Unless specifically indicated otherwise, existing Work cut, altered or revised to accommodate new work shall be patched, filled-in or extended to duplicate undisturbed adjacent finishes, colors, textures, and profiles. Patches, repairs and extensions of existing work shall be finished to match adjacent existing work unless noted otherwise.

E. Cutting / Patching Request
   1. Obtain approval from Architect prior to cutting or making alterations that could affect one or more of the following individually or in any combination.
      a. Structural integrity of an element
      b. Weather- or moisture-resistance integrity of an element
      c. Efficiency, maintenance or safety of an operational element
      d. Visual qualities of an element that will be exposed to view in completed work
      e. Work of Owner or separate Contractor
   2. Include in Request at least the following.
      a. Identification of Project.
      b. Location and description of affected Work.
      c. Necessity for cutting or alteration.
      d. Description of proposed Work and products to be used.
      e. Alternatives to cutting and patching.
      f. Effect on Work of Owner or separate Contractor.
      g. Written permission of affected separate Contractor.
      h. Date and time Work will be executed.

1.08 CLOSEOUT PROCEDURES

A. Beneficial Occupancy Inspection. Contractor, upon determination that work complies with the requirements of Construction Documents, shall submit a Request for Certified Completion Inspection to the Architect.
   1. Work and project documentation shall conform to CAC Section 4-336 requirements for verified reports and closeout procedures.
   2. Request shall include a list of items that remain to be completed or corrected (Punchlist) prepared in conjunction with Project Inspector. List may be developed by areas when approved by Architect.
   3. Within reasonable time after receipt of Request, Architect, accompanied by Owner, will inspect the work to determine status of completion.
   4. Should Architect determine that Work is not suitable for Owner's occupancy, Architect will promptly notify Contractor in writing, giving reasons for this determination.
      a. Contractor shall remedy deficiencies and notify Architect when Work is ready for re-inspection.
      b. Architect will re-inspect Work.
      c. Should the Work require a third or subsequent Inspection, Architect may invoice Owner for its time and expenses as an Additional Service. Owner will deduct such charges from monies then due to about to become due to Contractor by Change Order.
   5. When Architect concurs that Work is substantially complete and ready for occupancy, Architect will advise Owner to prepare the Notice of Completion together with a final list of items to be completed or corrected as verified by Architect.
   6. The Certified Notice of Completion will be submitted to the Owner and to Contractor for their written acceptance of responsibilities assigned to them in such notice.
   7. Contractor shall provide consent of surety for Owner's Partial or Beneficial Occupancy

B. Final Completion Inspection. Contractor, upon determination that work is ready for Final Completion Inspection and acceptance, shall submit a Request for such inspection to Architect.
   1. Request shall certify that work is complete and in compliance with contract requirements including at least the following.
      a. Work has been completed in accordance with Contract Documents
      b. Work has passed requisite inspections by governing agencies; append copies of the following as applicable
         1) Executed Inspection Reports / Certificates of Inspection
         2) Letters of Acceptance
         3) Certificates of Occupancy
      c. Equipment, and safety and security systems are operational and have been tested as required
      d. That Owner's personnel have been trained in system operation and maintenance as specified in this Manual
   2. Architect will make an inspection to verify status of completion.
   3. Should Architect determine Work is incomplete or defective, Architect will promptly notify Contractor in writing, listing incomplete or defective Work.

a. Contractor shall remedy deficiencies promptly and notify Architect when ready for re-inspection.
b. Architect will re-inspect Work.
c. Should the Work require a third or subsequent Inspection, Architect may invoice Owner for its time and expenses as an Additional Service. Owner will deduct such charges from monies then due to about to become due to Contractor by Change Order.

4. When Architect determines the Work is acceptable in accordance with the Contract Documents, Architect will request Contractor's Final Payment Request and closeout submittals.
   a. Final Payment Request shall show all adjustments to Contract Sum.

C. Closeout Submittals include, but are not necessarily limited to the following.
1. List of subcontractors, service organizations and principal vendors, including names, addresses and telephone numbers, of their emergency contact for service
2. Evidence of material and sub-contract payments and Release of Liens
3. Permanent Keys and Keying Schedule
4. Extra Materials
5. Operation and Maintenance Manuals
6. Warranty Manual or Binder
7. Project Record Documents
8. O & M Training Materials and Videos
9. Consent of Surety for Final Payment

D. Final Payment. Upon a finding that work, closeout submittals, and Payment Application are in order and complete Owner will make final payment, as stipulated in the General Conditions.
1. Retention will be released no sooner than 35 days after Notice of Completion has been recorded with County.

1.09 INSTRUCTIONS TO OWNER'S PERSONNEL

A. Instruct Owner's personnel in proper operation and maintenance of all systems, equipment and similar items which were provided as part of Work. Provide maintenance and inspection schedules that conform to manufacturer's recommendations.

B. Contractor shall provide schedule to Owner for approval for each of instruction periods required.
1. Organize instruction sessions into group sizes and schedule elapsed time for instruction in manner to provide complete coverage of subject matter. Video tape each session and provide Owner with two (2) copies.

C. Instruction sessions will be held in Owner designated area on project site and at Owner's convenience.

D. Prepare and submit to Architect a sign-in sheet with subject, date and time, signed by all participants for each session.

E. Instructors shall be qualified by product manufacturer in subject matter presented at each session.
   1. Submit names of instructors and qualifications to Architect and Owner for approval, 30 days prior to each scheduled session.
   2. Substitution of instructors will not be permitted without prior approval of Architect or Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

A. To patch, repair or extend new work, use materials specified in this Manual for such work.

B. To patch, repair or extend existing products, use materials that match the existing work. Determine type and quality of existing by inspection and testing, if necessary. If identical materials are not available, obtain Architect's approval of proposed materials.

C. Cleaning materials and equipment shall be low VOC materials and processes compatible with surfaces being cleaned, and acceptable to manufacturer of material being cleaned.
   1. VOC content shall be within limits set by SCAQMD.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Before beginning Work, investigate and verify existence and location of mechanical and electrical systems and other construction affecting Work, including concealed and underground utilities.
   1. Before construction, survey and record points of connection of utility services.
   2. Locate invert elevation at points of connection to existing sanitary- and storm-sewers, water-service piping, and underground electrical services.
   3. Employ a utility service locator company to locate underground utilities.
   4. Verify Owner's Record Drawings.
   5. Furnish survey of existing utilities.

B. Verify existing conditions prior to commencing Work, including conditions of elements subject to damage or displacement during cutting and patching.
   1. Take photographs, digital photos or video recordings of conditions likely to be subject to dispute.

C. Confirm status and extents of current warranties and guarantees.

D. Do not begin any work item until unsatisfactory conditions are corrected. Beginning such work means acceptance of related existing conditions and preparatory work of others.

3.02 PREPARATION

A. Prior to cutting, boring or drilling through new or existing structural members or elements including reinforcing bars not specifically detailed, Contractor shall prepare detailed drawings for review and approval by Architect, Structural Engineer of Record and DSA Field Engineer.
   1. Approval by DSA is required prior to commencement of Work. Agency approvals will be obtained by Architect not Contractor.

3.03 CUTTING AND PATCHING

A. Provide temporary support to ensure structural integrity of Work. Provide devices and methods to protect other portions of Project from damage.
   1. Provide protection from elements for areas that may be exposed by uncovering Work.

B. Do the cutting, fitting, patching and related work required to fit the several parts of the work together, to open or uncover work to permit installation of ill-timed work, to remove defective or non-conforming work, to remove samples not part of final work and to provide openings for penetrations.
   1. Execute Work by methods to avoid damage to other Work and which will provide appropriate surfaces to receive patching and finish.
   2. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
   3. Restore Work with new products in accordance with requirements of Contract Documents.
   4. Fit Work air tight to pipes, sleeves, ducts, conduits and other penetrations through surfaces.
   5. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

C. Provide sleeves and hangers for conduit, outlet boxes, piping, inserts or other materials or equipment necessary to be built into Work. Promptly furnish same and set such sleeves or other materials as construction program required.
   1. In event delays occur in delivery of sleeves or other materials, arrange to have boxes or other forms set at locations where piping or other material is to pass through or into slabs or other Work.

D. Upon subsequent installation of sleeves or other material, install fill materials as required. Necessary expenditures incurred for boxing out or filling shall be without extra cost to Owner.

3.04 PROGRESS CLEANING

A. Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.

B. General Requirements
   1. Store construction products and supplies in orderly arrangements allowing access, not impeding drainage or traffic and providing required protection of materials.

2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
3. At least twice each month, and more often if necessary, remove scrap, debris, and waste material from jobsite.
4. Provide adequate storage for items waiting removal from jobsite, observing requirements for fire protection and protection of ecology.

C. Site Cleaning
1. Daily, and more often if necessary, inspect site and pick up debris and waste material, use rake or suitable tools if needed.
2. Place items in bins or containers designated for their storage.
3. Remove combustible waste from site promptly. Keep combustible waste, awaiting removal, in sealed metal containers with lids.
4. Weekly, and more often if necessary, inspect, arrangements of materials stored on site, re-stack, tidy, or otherwise service arrangements to meet requirements specified above.
5. Maintain site in neat and orderly condition.

D. Structure Cleaning
1. Weekly, and more often if necessary, inspect structures, pick up debris and sweep interior spaces clean.
   a. Clean, for purpose of this subparagraph, means free from dust and other material capable of being removed by use of reasonable effort and handheld broom (i.e. broom-clean).
   b. Place items in bins or containers designated for their storage.
2. As required to prepare for succeeding construction processes, clean structures, or pertinent portions thereof, to degree and using methods recommended by manufacturer of succeeding material.
3. Following installation and while Work is being performed in space in which finish materials have been installed, clean finished floors daily, and more often if necessary.
   a. Clean, for purposes of this subparagraph, means free from foreign materials which, in opinion of Architect, may be injurious to finish floor material (i.e. vacuum or damp-mop clean).

3.05 FINAL CLEANING

A. Except as otherwise specifically provided, clean, for purpose of Article, means level of cleanliness generally provided by professional commercial cleaners using commercial quality building maintenance equipment and materials (i.e. scrub and polish clean).

B. Complete Final Cleaning operations before submitting request for Beneficial Occupancy Inspection.

C. Site Cleaning
1. Remove from Site tools, surplus materials and supplies, equipment, scrap, debris, and waste.
2. Clean Project site, yard, and grounds, in any and all areas disturbed by construction activities, including landscaped and hardscaped areas, of rubbish, waste material, litter, debris and other foreign matter.

a. Unless otherwise specifically directed by Architect, water and broom clean paved areas on site and public paved areas directly adjacent to site. Remove resultant debris.

3. Rake grounds that are neither planted nor paved to smooth, even-textured surface.
4. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces

D. Structure Cleaning

1. Clean exterior building and structure surfaces installed or affected by work under this Contract. Remove soils, waste material, smudges and other foreign matter. Remove traces of splashed material from adjacent surfaces.
   a. Wash windows
   b. Remove protective films from prefinished metals
   c. Hose down new masonry and plaster. If necessary to achieve uniform degree of exterior cleanliness, hose down exterior of structure.
   d. In event of stubborn stains not removable with water, Architect may require light sandblasting or other cleaning without claim for Change in Contract Sum or Schedule.
2. Clean interior building and fixture surfaces installed or affected by work under this Contract. Remove traces of dirt, dust, waste material, smudges and other foreign matter. Remove traces of misplaced materials (i.e. paints, sealants, adhesives). Remove paint drippings, spots, stains, and dirt from finished surfaces. Use only cleaning materials and equipment instructed by manufacturer of surface material.
3. Clean transparent materials, including mirrors and glass in doors and windows. Remove misplaced glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
4. Polished Surfaces: On surfaces requiring routine application of buffed polish, apply polish recommended by manufacturer of material being polished. Glossy surfaces shall be cleaned and shined as intended by manufacturer.
5. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
   a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

E. Mechanical and Electrical Systems

1. Wipe exterior surfaces of mechanical, electrical and similar equipment clean. Remove dirt, dust, excess lubrication, paint and mortar droppings and other foreign matter.
   a. Replace parts subject to unusual operating conditions.
   b. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
   c. Clean interior of ducts, blowers and coils if units were operated during construction.

2. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
3. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

3.06 CLEANING DURING OWNER OCCUPANCY

A. Should Owner take posession of Work, or any portion thereof, prior to Architect's certification of completion based on its Beneficial Occupancy Inspection, responsibilities for interim and final cleaning of such occupied spaces shall be determined by Architect in accordance with General Conditions of the Contract.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Preparation and implementation, including reporting and documentation, of a Waste Management Plan for reusing, recycling, salvage or disposal of non-hazardous waste materials generated during demolition and/or new construction (Construction & Demolition (C&D) Waste), to foster material recovery and re-use and to minimize disposal in land fills.

B. Related Sections
   1. Section 01 30 00 Administrative Requirements

1.02 REFERENCES

A. California Integrated Waste management Act of 1989 (AB 939)

B. California Code of Regulations Title 14, Section 18700

1.03 ACTION SUBMITTALS

A. Waste Management Plan (Appendix A): Within 10 calendar days after the Notice to Proceed and prior to any waste removal, submit the following to the Architect for review and approval. Update quarterly. Include:
   1. Materials to be recycled, reused, or salvaged, either onsite or offsite.
   2. Estimates of construction waste quantity (in tons) by type of material. (If waste is measured by volume, give factors for conversion to weight in tons.)
   3. Procedures for recycling/ reuse program.
   4. Permit or license and location of Project waste-disposal areas.
   5. Site plan for placement of waste containers.

B. Waste Management Monthly Progress Report (Appendix B): Summary of waste generated by Project, monthly with Application for Payment. Include:
   1. Firms accepting the recovered or waste materials.
   2. Type and location of accepting facilities (landfill, recovery facility, used materials yard, etc.). If materials are reused or recycled on the Project site, location should be designated as "on-site reuse / recycling".
   3. Type of materials and net weight (tons) of each.
   4. Value of the materials or disposal fee paid.
   5. Attach weigh bills and other documentation confirming amount and disposal location of waste materials.

C. Waste Management Final Compliance Report: Final update of Waste Management Plan to provide summary of total waste generated by Project.

PART 2 - PRODUCTS

2.01 SYSTEM DESCRIPTION

A. Collection and separation of all construction waste materials generated on-site, reuse or recycling on-site, transportation to approved recyclers or reuse organizations, or transportation to legally designated landfills, for the purpose of recycling salvaging and/or reusing a minimum of 75% of the construction waste generated.

PART 3 - EXECUTION

3.01 IMPLEMENTATION

A. Implement approved Waste Management Plan including collecting, segregating, storing, transporting and documenting each type of waste material generated, recycled or reused, or disposed in landfills.

B. Designate an on-site person to be responsible for instructing workers and overseeing the sorting and recording of waste/recyclable materials.

C. Include waste management and recycling in worker orientation and as an agenda item for regular Project meetings.

D. Recyclable and waste bin areas shall be limited to areas approved on the Waste Management Plan. Keep recycling and waste bins neat and clearly marked to avoid contamination of materials.

3.02 ATTACHMENTS

A. Appendix A: Waste Management Plan

B. Appendix B: Waste Management Monthly Progress Report

END OF SECTION

APPENDIX A

WASTE MANAGEMENT PLAN

Date:

Within 10 calendar days after the Notice to Proceed and prior to any waste removal, the Contractor shall submit the following to the Architect for review and approval. Update quarterly.

PROJECT:

OWNER:

CONTRACTOR
Name:
Address:
Telephone, fax, email:

Material Type (1)	Estimated Tons Recycled (2)	Estimated Tons Reused (3)	Estimated Tons Salvaged (4)	Estimated Tons Landfilled (5)	Proposed Disposal or Recycling Facility (6)
Total					
Diversion Rate: Columns [(2)+(3)+(4)] / [(2)+(3)+(4)+(5)]					

Provide type of material targeted for recycling, reuse, and/or salvage, either on or off site, and include a category for general waste materials requiring landfill disposal.

(2) through (4) Provide estimated quantities (in tons) of recyclable, reusable, or salvageable waste materials anticipated to be generated.

Provide estimated quantities (in tons) of material to be disposed in landfill.

Provide destination of recycled, salvaged, and disposed materials (i.e. onsite, recycling facility, etc.)

General: Attach proposed Recycling & Waste Bin Location Plan.

Attach name and contact data for each recycling or disposal destination to be used.

APPENDIX B

WASTE MANAGEMENT MONTHLY PROGRESS REPORT Starting Date
Ending Date

Contractor shall submit this report monthly along with Application for Payment.
PROJECT:
OWNER:

CONTRACTOR [CONSTRUCTION MANAGER]
Name:
Address:
Telephone, fax, email:

Material Type (1)	Actual Tons Recycled (2)	Actual Tons Reused (3)	Actual Tons Salvaged (4)	Actual Tons Landfilled (5)	Disposal or Recycling Facility (6)
Total					
Diversion Rate: Columns [(2)+(3)+(4)] / [(2)+(3)+(4)+(5)]					

Provide type of materials recycled, reused, and/or salvaged, either on or off site, and include a category for general waste materials disposed in a landfill.
(2) through (4) Provide quantities (in tons) of recyclable, reusable, or salvageable waste materials generated.
Provide quantities (in tons) of material disposed in landfill.
Provide destination of recycled, salvaged, and disposed materials (i.e. onsite, recycling facility, etc.)
General: Attach name and contact data for each recycling or disposal destination to be used.

SECTION 22 13 16

SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Pipe, tube, and fittings.

1.3 PERFORMANCE REQUIREMENTS

A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:
   1. Soil, Waste, and Vent Piping: 10-foot head of water.

B. Seismic Performance: Soil, waste, and vent piping and support and installation shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.5 INFORMATIONAL SUBMITTALS

A. Seismic Qualification Certificates: For waste and vent piping, accessories, and components, from manufacturer.
   1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
   2. Detailed description of piping anchorage devices on which the certification is based and their installation requirements.

B. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

B. Comply with NSF/ANSI 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-dwv" for plastic drain, waste, and vent piping and "NSF-sewer" for plastic sewer piping.

1.7 PROJECT CONDITIONS

A. Interruption of Existing Sanitary Waste Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
   1. Notify Owner no fewer than two days in advance of proposed interruption of sanitary waste service.
   2. Do not proceed with interruption of sanitary waste service without Owner's written permission.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.2 HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS

A. Pipe and Fittings: ASTM A 888 or CISPI 301.

B. Sovent Stack Fittings: ASME B16.45 or ASSE 1043, hubless, cast-iron aerator and deaerator drainage fittings.

C. CISPI, Hubless-Piping Couplings:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. ANACO-Husky.
      b. Fernco Inc.

c. Matco-Norca, Inc.
d. Mission Rubber Company; a division of MCP Industries, Inc.

2. Standards: ASTM C 1277 and CISPI 310.
3. Description: Stainless-steel corrugated shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.

D. Heavy-Duty, Hubless-Piping Couplings:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. ANACO-Husky.
b. Clamp-All Corp.
c. Mission Rubber Company; a division of MCP Industries, Inc.
2. Standards: ASTM C 1277 and ASTM C 1540.
3. Description: Stainless-steel shield with stainless-steel bands and tightening devices; and ASTM C 564, rubber sleeve with integral, center pipe stop.

E. Cast-Iron, Hubless-Piping Couplings:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. MG Piping Products Company.
2. Standard: ASTM C 1277.
3. Description: Two-piece ASTM A 48/A 48M, cast-iron housing; stainless-steel bolts and nuts; and ASTM C 564, rubber sleeve with integral, center pipe stop.

2.3 PVC PIPE AND FITTINGS

A. Solid-Wall PVC Pipe: ASTM D 2665, drain, waste, and vent.

B. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.

C. Adhesive Primer: ASTM F 656.
1. Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Adhesive primer shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Solvent Cement: ASTM D 2564.
1. PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2. Solvent cement shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 - EXECUTION

3.1 EARTH MOVING

A. Comply with requirements for excavating, trenching, and backfilling specified in Section 31 20 00 "Earth Moving."

3.2 PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.

B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

E. Install piping to permit valve servicing.

F. Install piping at indicated slopes.

G. Install piping free of sags and bends.

H. Install fittings for changes in direction and branch connections.

I. Install piping to allow application of insulation.

J. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from

horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.

K. Lay buried building drainage piping beginning at low point of each system. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab in piping and pull past each joint as completed.

L. Install soil and waste drainage and vent piping at the following minimum slopes unless otherwise indicated:
   1. Building Sanitary Drain: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
   2. Horizontal Sanitary Drainage Piping: 1percent downward in direction of flow.
   3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.

M. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings."
   1. Install encasement on underground piping according to ASTM A 674 or AWWA C105/A 21.5.

N. Install underground PVC piping according to ASTM D 2321.

O. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

3.3 JOINT CONSTRUCTION

A. Join hubless, cast-iron soil piping according to CISPI 310 and CISPI's "Cast Iron Soil Pipe and Fittings Handbook" for hubless-piping coupling joints.

B. Plastic, Nonpressure-Piping, Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
   1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
   2. PVC Piping: Join according to ASTM D 2855 and ASTM D 2665 Appendixes.

3.4 VALVE INSTALLATION

A. Shutoff Valves:
   1. Install shutoff valve on each sewage pump discharge.
   2. Install full-port ball valve for piping NPS 2 and smaller.
   3. Install full-port ball valve for piping NPS 2-1/2 and larger.

B. Check Valves: Install swing check valve, between pump and shutoff valve, on each sewage pump discharge.

C. Backwater Valves: Install backwater valves in piping subject to backflow.
   1. Horizontal Piping: Horizontal backwater valves. Use normally closed type unless otherwise indicated.
   2. Floor Drains: Drain outlet backwater valves unless drain has integral backwater valve.
   3. Install backwater valves in accessible locations.
   4. Comply with requirements for backwater valve specified in Section 22 13 19 "Sanitary Waste Piping Specialties."

3.5 HANGER AND SUPPORT INSTALLATION

A. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.

B. Install stainless-steel pipe hangers for horizontal piping in corrosive environments.

C. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.

D. Install stainless-steel pipe support clamps for vertical piping in corrosive environments.

E. Vertical Piping: MSS Type 8 or Type 42, clamps.

F. Install individual, straight, horizontal piping runs:
   1. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
   2. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
   3. Longer Than 100 Feet if Indicated: MSS Type 49, spring cushion rolls.

G. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.

H. Base of Vertical Piping: MSS Type 52, spring hangers.

I. Support horizontal piping and tubing within 12 inches of each fitting, valve, and coupling.

J. Support vertical piping and tubing at base and at each floor.

K. Rod diameter may be reduced one size for double-rod hangers, with 3/8-inch minimum rods.

L. Install hangers for cast-iron soil piping with the following maximum horizontal spacing and minimum rod diameters:
   1. NPS 1-1/2 and NPS 2: 60 inches with 3/8-inch rod.
   2. NPS 3: 60 inches with 1/2-inch rod.
   3. NPS 4 and NPS 5: 60 inches with 5/8-inch rod.
   4. NPS 6 and NPS 8: 60 inches with 3/4-inch rod.
   5. NPS 10 and NPS 12: 60 inches with 7/8-inch rod.
   6. Spacing for 10-foot lengths may be increased to 10 feet. Spacing for fittings is limited to 60 inches.

M. Install supports for vertical cast-iron soil piping every 15 feet.

N. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.6 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect soil and waste piping to exterior sanitary sewerage piping. Use transition fitting to join dissimilar piping materials.

C. Connect drainage and vent piping to the following:
   1. Plumbing Fixtures: Connect drainage piping in sizes indicated, but not smaller than required by plumbing code.
   2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.
   3. Plumbing Specialties: Connect drainage and vent piping in sizes indicated, but not smaller than required by plumbing code.
   4. Install test tees (wall cleanouts) in conductors near floor and floor cleanouts with cover flush with floor.
   5. Install horizontal backwater valves with cleanout cover flush with floor.
   6. Comply with requirements for backwater valves, cleanouts, and drains specified in Section 22 13 19 "Sanitary Waste Piping Specialties."
   7. Equipment: Connect drainage piping as indicated. Provide shutoff valve if indicated and union for each connection. Use flanges instead of unions for connections NPS 2-1/2 and larger.

D. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.

E. Make connections according to the following unless otherwise indicated:
   1. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment.
   2. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment.

3.7 FIELD QUALITY CONTROL

A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.
   1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
   2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.

C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

D. Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:
   1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
   2. Leave uncovered and unconcealed new, altered, extended, or replaced drainage and vent piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
   3. Roughing-in Plumbing Test Procedure: Test drainage and vent piping except outside leaders on completion of roughing-in. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water. From 15 minutes before inspection starts to completion of inspection, water level must not drop. Inspect joints for leaks.
   4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping system equal to pressure of 1-inch wg. Use U-tube or manometer inserted in trap of water closet to measure this

pressure. Air pressure must remain constant without introducing additional air throughout period of inspection. Inspect plumbing fixture connections for gas and water leaks.

5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
6. Prepare reports for tests and required corrective action.

3.8 CLEANING AND PROTECTION

A. Clean interior of piping. Remove dirt and debris as work progresses.

B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

C. Place plugs in ends of uncompleted piping at end of day and when work stops.

D. Exposed PVC Piping: Protect plumbing vents exposed to sunlight with two coats of water-based latex paint.

3.9 PIPING SCHEDULE

A. Flanges and unions may be used on aboveground pressure piping unless otherwise indicated.

B. Aboveground, soil and waste piping NPS 4 and smaller shall be the following:
   1. Hubless, cast-iron soil pipe and fittings; CISPI hubless-piping couplings; and coupled joints.

C. Aboveground, soil and waste piping NPS 5 and larger shall be the following:
   1. Hubless, cast-iron soil pipe and fittings; CISPI hubless-piping couplings; and coupled joints.

D. Aboveground, vent piping NPS 4 and smaller shall be the following:
   1. Hubless, cast-iron soil pipe and fittings; CISPI hubless-piping couplings; and coupled joints.

E. Aboveground, vent piping NPS 5 and larger shall be the following:
   1. Hubless, cast-iron soil pipe and fittings; CISPI hubless-piping couplings; and coupled joints.

F. Underground, soil, waste, and vent piping NPS 4 and smaller shall be the following:
   1. Solid wall PVC pipe, PVC socket fittings, and solvent-cemented joints.

G. Underground, soil and waste piping NPS 5 and larger shall be the following:
   1. Solid-wall PVC pipe; PVC socket fittings; and solvent-cemented joints.

END OF SECTION

SECTION 31 23 15

SITE EARTHWORK AND BUILDING EXCAVATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Site clearing and site earthwork preparation.

B. Excavation for building foundations within building area.
   1. Building Area: 10 feet minimum beyond footing lines **unless otherwise indicated on Drawings.** Refer to project **Demolition plans and** geotechnical report for details.

C. Excavation for site structures.

1.02 REFERENCES

A. ASTM D 1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. AQMD – South Coast Air Quality Management District, Local Regulations, Rule 403 for Fugitive Dust.

C. Project Geotechnical report titled:

1.03 GENERAL REQUIREMENTS

A. Existing Conditions: Contractor shall examine site of Work and verify existing conditions under which work will be performed, including known subsurface conditions.

B. Operating/Work Hours: Contractor shall prepare and submit to construction manager for approval, a detailed work schedule for project activities including work hours, campus coordination, utility interruptions, shut downs, etc.

C. Drainage and Pumping: Maintain excavations and site free from water throughout work. Run surface water or seepage to sumps with float-switch controlled pumps. Pump to drainage system as approved by Architect.

D. Protection: Provide and maintain protection to retain earthbanks, and protect adjoining existing monuments, grades and structures from caving, sliding, erosions or other damage and provide suitable forms of protection against bodily injury or property damage.

E. Provide barricades and berms at top of slopes to prevent water from flowing over top

F. Borrow. Fill, backfill, aggregate base, and other soil materials obtained from off-site sources shall be sampled and tested in compliance with CA EPA Department of Toxic

Substances Control recommendations to prevent the importation of contaminated materials to the Site.

1. Testing Frequency
   a. For borrow up to 1,000-cu.yrd, conduct 1 test for each 250-cu.yrds.
   b. For borrow between 1,001- and 5,000-cu.yrd; conduct 4 tests for first 1,000- cu.yrd, if material tests acceptable, conduct 1 test for each additional 500-cu.yrds.
   c. For borrow over 5,000-cu.yrds, conduct 12 tests during import of first 5,000-cu.yrd, if material tests acceptable, conduct 1 test for each additional 1,000-cu.yrds.
2. Owner's Testing Laboratory shall take samples at source, conduct testing and evaluate test results prior to delivery.
3. Conduct tests for lead and other heavy metals, asbestos, PCB's, pesticides, herbicides, VOCs, and semi-VOCs.
4. When detectable quantities of hazardous materials are found, determine the risk to human health, the environment, or both using the DTSC Preliminary Endangerment Assessment Guidance Manual.
5. Do not import soils that exhibit a known risk to human health, the environment, or both.

1.04 SUBMITTALS

A. Compaction Report indicating requirements per ASTM D1556.

B. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins.

1.05 FIELD CONDITIONS

A. Geotechnical Investigation Report has been prepared under direction of Owner. Geotechnical Investigation Report is hereby referenced as information for Work of this Section. Architect assumes no responsibility for conclusions Contractor may draw, from information provided. Contract Documents take precedence over recommendations that may be contained in Geotechnical Investigation Report and Contractor must obtain approval for deviations from Contract Documents. Copy of the Geotechnical Investigation Report is available at Architect's office.

B. Verify that survey benchmark and intended elevations for Work are as indicated.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 PREPARATION

A. Examine entire site including subsurface conditions.

B. Identify required lines, levels, contours and datum.

C. Identify known underground, above ground and aerial utilities. Stake and flag locations. Replace as necessary throughout construction operations.

D. Notify utility company to remove and relocate utilities where required for construction operations.

E. Protect above and below grade utilities that are to remain.

F. Protect plant life, lawns and other features remaining as portion of final landscaping.

G. Protect bench marks, existing structures, fences, sidewalks, paving and curbs from excavation equipment and vehicular traffic.

H. Repair or replace property damaged by Work of this Section.

I. Commencement of Work means acceptance of existing conditions.

3.02 SITE CLEARING

A. Conform to applicable codes for disposal of debris. Burning debris on site not permitted.

B. Install erosion control BMP's as indicated on plans and current Storm Water Quality regulations by California Regional Water Quality Control Board. Refer to California Stormwater BMP Handbook. Maintain at all times during construction.

C. Coordinate clearing work with utility companies

D. Verify that existing plant life and features designated to remain are tagged or identified.

E. Protect utilities that are designated to remain from damage.

F. Protect trees, plant growth and features designated to remain as final landscaping.

G. Protect survey bench marks and designated existing survey control structures from damage or displacement.

H. Erect barricades in accordance with Title 8, Subchapter 4, Construction Safety Orders, California Code of Regulations.

I. Protect existing items not indicated to be altered.

J. Clear areas required for access to site and execution of Work.

K. Remove paving, curbs, foundations and surface improvements. Patch and repair surfaces not indicated to be removed.

L. Remove trees and shrubs indicated. Remove stumps, main root ball, root system to full depth.

M. Clear undergrowth, grass and deadwood. Protect plant material not scheduled for removal.

N. Keep site free of dust by sprinkling with water. Maintain adequate water trucks, hoses and water supply.

O. Remove debris, rock and extracted plant life from site as work progresses. Dispose legally.

P. Burial of removed materials not permitted.

Q. Use of Owner's disposal system not permitted. Do not use disposal system belonging to any other property Owner.

R. Loose fill material, buried trash, abandoned underground structures or deleterious materials of any kind encountered shall be identified and removed to expose natural earth.

3.03 SITE EARTHWORK

A. Sub-excavate and remove loose existing soils to depths recommended by Geotechnical Engineer.

B. Loose fill and natural on-site soils acceptable to Geotechnical Engineer Testing Laboratory may be stockpiled for subsequent use as fill material.

C. After clearing and removal of loose fill, Geotechnical Engineer will inspect exposed surfaces, before commencing further earthwork operations.

D. After sub-excavating existing soils, Geotechnical Engineer will inspect exposed surfaces. Before commencing further earthwork operations, verify elevations and line. Elevations shall be within 0.2 foot of required.

E. Correct unauthorized over excavation at no cost to Owner.

F. Notify Geotechnical Engineer of unexpected subsurface conditions and discontinue affected work until notified to resume work.

G. Unless otherwise recommended in Geotechnical Report scarify exposed surface to depth of 6 inches. Bring to optimum moisture content and recompact to minimum 90 percent of maximum dry density per ASTM D1557.

H. Place approved fill in 8 inch or less lifts, each lift with optimum moisture content and compacted to minimum 90 percent of maximum dry density per ASTM D 1557.

I. Bring fill to elevations indicated on structural drawings or to those indicated on grading plans. Elevations shall be within 0.1 foot of required.

J. Backfill holes, voids or depressions caused by earthwork operations with identical fill and compaction standards.

K. Completed earthwork to determine suitability of exposed soils, will be inspected by Geotechnical Engineer, including cuts, fills and earth bank slopes cut or fill.

3.04 BUILDING AREA PREPARATION

A. Within building area and to distance of 10 feet beyond exterior footings or covered walks, remove existing fill or loose natural soils (sub excavate) to a depth recommended by Geotechnical Engineer.

B. Geotechnical Engineer will inspect exposed surfaces. Additional unsuitable soil, as approved by Geotechnical Engineer shall be removed.

C. Scarify exposed surface to depth of 6 inches. Bring to optimum moisture content and re-compact to 90 percent of maximum dry density per ASTM D 1557.

D. Add approved fill to required subgrade elevation in 8 inch maximum lifts. Bring to optimum moisture content and compact to 90 percent of maximum dry density per ASTM D1557.

E. Fill: As specified in Section 31 23 23 and as approved by Geotechnical Engineer.

3.05 EXCAVATION FOR FOUNDATIONS

A. Underpin adjacent structures that may be damaged by excavation work, including utilities, pipes and electrical undergrounding. Protect existing monuments, grades and improvements of any kind. Remove all obstructions to Work.

B. Excavate subsoil to elevations required to accommodate building foundations, slabs-on-grade, construction operations, forms, forms removal and inspection. Subexcavate existing soils to depths recommended by Geotechnical Engineer.

1. Side forms in foundation excavations may be omitted where earth remains firm with no cave-in providing one inch is added to footing width for each form removed.
2. Finish subgrade to a tolerance of 0.05 foot within required elevations for subgrade.

C. Machine slope banks. Earth banks shall be sloped to 1-1/2 (horizontal) to 1 (vertical). Tops of earth banks shall be level to distance of 5 feet minimum from existing structures and 5 feet minimum behind construction barricades adjacent to driveways.

D. Excavation cut not to interfere with normal 45 degree bearing splay of foundation.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation.

F. Hand trim excavation. Remove loose matter. Machine tamp bottom of excavation.

G. Remove lumped subsoil, boulders and rock up to any size encountered satisfactory to the geotechnical engineer. Totally remove abandoned pipes and utilities found in excavations. Cap or plug both ends of pipes and conduits to provide complete seal with concrete plugs, threaded caps or other approved methods.

H. Notify Geotechnical Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume Work.

I. Correct over-excavation as recommended by Geotechnical Engineer.

J. Correct areas over-excavated by error by filling with specified concrete, as recommended by Geotechnical Engineer.

K. Stockpile approved excavated material in area designated on site and remove excess material not being reused from site.

L. Bulkheads and shoring shall conform to Title 8, California Code of Regulations, Construction Safety Orders.

M. Maintain excavations free of water throughout operations. Run surface water or seepage to sumps or drainage system.

3.06 FIELD QUALITY CONTROL

A. Testing and Inspection: Owner will engage a qualified independent Geotechnical Engineer Testing Laboratory to perform field quality-control testing and inspections. Do not proceed with earthwork, excavation, and/or concrete placement without approval of Geotechnical Engineer.

B. Testing agency will test compaction of soils in place according to ASTM D1556, and ASTM D2937 as applicable. Tests will be performed at the following locations and frequencies:
   1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2000 sq. ft. or less of building slab, but in no case fewer than 3 tests.
   2. Foundation Wall Backfill: At each compacted backfill layer, at least 1 test for each 100 feet or less of wall length, but no fewer than 2 tests.

C. Frequency of Tests: Geotechnical Engineer Testing Laboratory may make as many tests as are necessary to ensure specified results.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained. Cost of retests shall be paid by Owner and deducted from contract sum by Change Order.

3.07 SEASONAL LIMITS

A. No fill material shall be placed, spread or rolled while it is frozen or thawing or during unfavorable weather conditions. When Work is interrupted by heavy rain, fill operations shall not be resumed until field tests by Geotechnical Engineer Testing Laboratory indicate that moisture content and density of fill are as previously specified.

3.08 PROTECTION

A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing or excessive water inundation.

END OF SECTION

SECTION 26 01 00

ELECTRICAL GENERAL PROVISIONS

ARTICLE 1 SUMMARY

1.1 This Division of the specification outlines the provisions of the contract work to be performed under this Division.

1.2 This Section applies to and forms a part of each section of specifications in Division 26 and all work performed under the electrical and communications contracts.

1.3 In addition, work in this Division is governed by the provisions of the bidding requirements, contract forms, general conditions and all sections under general requirements.

1.4 These specifications contain statements which may be more definitive or more restrictive than those contained in the General Conditions. Where these statements occur, they shall take precedence over the General Conditions.

1.5 Where the words 'provide' or 'provision' are used, it shall be definitely interpreted as 'furnishing and installing complete in operating condition'. Where the words 'as indicated' or 'as shown' are used, it shall mean as shown on contract drawings.

1.6 Where items are specified in the singular, this Division shall provide the quantity as shown on drawings plus any spares or extras mentioned on drawings or specifications. All specified and supplied equipment shall be new.

ARTICLE 2 CONTRACTOR QUALIFICATIONS

2.1 The Contractor shall have a current California C-10 Electrical Contractor's license and all individuals working on this project shall have passed the Department of Industrial Relations Division of apprenticeship Standards – "Electrician Certification Program."

ARTICLE 3 CODES, PERMITS AND FEES

3.1 Comply with all applicable laws, ordinances, rules, regulations, codes, or rulings of governmental units having jurisdiction as well as standards of NFPA, and serving utility requirements.

3.2 Obtain permits, fees, inspections, meter and the like, associated with work in each section of this Division.

3.3 Installation procedures, methods and conditions shall comply with the latest requirements of the Federal Occupational Safety and Health Act (OSHA).

ARTICLE 4 EXAMINATION OF PREMISES

4.1 Examine the construction drawings and premises prior to bidding. No allowances will be made for not being knowledgeable of existing conditions.

ARTICLE 5 STANDARDS

5.1 The following standard publications of the latest editions enforced and supplements thereto shall form a part of these specifications. All electrical work must, as a minimum, be in accordance with these standards.

5.1.1 2016 California Electrical Code (CEC), Part 3 Title 24 CCR.
5.1.2 National Fire Protection Association.
5.1.3 Underwriters' Laboratories, Inc. (UL).
5.1.4 Certified Ballast Manufacturers' Association (CBM).
5.1.5 National Electrical Manufacturers' Association (NEMA).
5.1.6 Institution of Electrical & Electronics Engineers (IEEE).
5.1.7 American Society for Testing & Materials (ASTM).
5.1.8 National Board of Fire Underwriters (NBFU).
5.1.9 National Board of Standards (NBS).
5.1.10 American National Standards Institute (ANSI).
5.1.11 Insulated Power Cable Engineers Association (IPECS).
5.1.12 Electrical Testing Laboratories (ETL).
5.1.13 National Electrical Safety Code (NESC).
5.1.14 2016 California Building Code (CBC), Part 2, Title 24 CCR.
5.1.15 2016 California Fire Code (CFC), Part 9, Title 24, CCR.
5.1.16 2016 NFPA 72 with California State Amendments
5.1.17 National Electrical Testing Association (NETA), 2010 or most current

ARTICLE 6 DEFINITIONS

6.1 Concealed: Hidden from sight, as in trenches, chases, hollow construction, or above furred spaces, hung ceilings - acoustical or plastic type, or exposed to view only in tunnels, attics, shafts, crawl spaces, unfinished spaces, or other areas solely for maintenance and repair.

6.2 Exposed, Non-Concealed, Unfinished Space: A room or space that is ordinarily accessible only to building maintenance personnel, a room noted on the 'finish schedule' with exposed and unpainted construction for walls, floors, or ceilings or specifically mentioned as 'unfinished'.

6.3 Finish Space: Any space ordinarily visible, including exterior areas.

ARTICLE 7 WORK AND MATERIALS

7.1 Unless otherwise specified, all materials must be new and of the best quality. Materials previously incorporated into other projects, salvaged, or refurbished are not considered new. Perform all labor in a thorough and workmanlike manner.

7.2 All materials provided under the contract must bear the UL label where normally available. Note that this requirement may be repeated under equipment specifications. In general, such devices as will void the label should be provided in separate enclosures and wired to the labeled unit in proper manner.

ARTICLE 8 SHOP DRAWINGS AND SUBMITTALS

8.1 Submit shop drawings and all data in accordance with Division 1 of these specifications and as noted below for all equipment provided under this Division.

8.2 Shop drawings submittals demonstrate to the Architect that the Contractor understands the design concept. The Contractor demonstrates his understanding by indicating which equipment and material he intends to furnish and install and by detailing the fabrication and installation methods of material and equipment he intends to use. If deviations, discrepancies, or conflicts between submittals and specifications are discovered either prior to or after submittals are processed, notify the Architect immediately.

8.3 Manufacturer's data and dimension sheets shall be submitted giving all pertinent physical and engineering data including weights, cross sections and maintenance instructions. Standard items of equipment such as receptacles, switches, plates, etc., which are cataloged items, shall be listed by manufacturer.

8.4 Index all submittals and reference them to these specifications. All submittal items shall be assembled and submitted, one for each specification section. (Multiple specification sections may be grouped together in one common submittal binder, as long as each individual section is clearly identified.) Partial or incomplete submittal sections will not be reviewed.

ARTICLE 9 EQUIPMENT PURCHASES

9.1 Arrange for purchase and delivery of all materials and equipment within 20 days after approval of submittals. All materials and equipment must be ordered in ample quantities for delivery at the proper time. If items are not on the project in time to expedite completion, the Owner may purchase said equipment and materials and deduct the cost from the contract sum.

9.2 Provide all materials of similar class or service by one manufacturer.

ARTICLE 10 COOPERATIVE WORK

10.1 Correct without charge any work requiring alteration due to lack of proper supervision or failure to make proper provision in time. Correct without charge any damage to adjacent work caused by the alteration.

10.2 Cooperative work includes: General supervision and responsibility for proper location and size of work related to this Division, but provided under the other sections of these specifications, and installation of sleeves, inserts, and anchor bolts for work under each section in this Division.

ARTICLE 11 VERIFICATION OF DIMENSIONS

11.1 Scaled and figured dimensions are approximate only. Before proceeding with work, carefully check and verify dimensions, etc., and be responsible for properly fitting equipment and materials together and to the structure in spaces provided.

11.2 Drawings are essentially diagrammatic, and many offsets, bends, pull boxes, special fittings, and exact locations are not indicated. Carefully study drawings and premises in order to determine best methods, exact location, routes, building obstructions, etc. and install apparatus and equipment in manner and locations to avoid obstructions, preserve headroom, keep openings and passageways clear, and maintain proper clearances.

ARTICLE 12 CUTTING AND PATCHING

12.1 All cutting and patching shall be in accordance with Division 1 of these specifications and as noted below.

12.2 Cut existing work and patch as necessary to properly install new work. As the work progresses, leave necessary openings, holes, chases, etc., in their correct location. If the required openings, holes, chases, etc., are not in their correct locations, make the necessary corrections at no cost to the Owner. Avoid excessive cutting and do not cut structural members including wall framing without the consent of the Architect.

ARTICLE 13 CLOSING-IN OF UNINSPECTED WORK

13.1 Cover no work until inspected, tested, and approved by the Architect. Where work is covered before inspection and test, uncover it and when inspected, tested, and approved, restore all work to original proper condition at no additional cost to Owner.

ARTICLE 14 EXCAVATION AND BACKFILL

14.1 All excavation and backfill shall be in accordance with Division 1 of these specifications and as noted below.

14.2 Perform all necessary excavation, shoring, and backfilling required for the proper laying of all conduits inside the building and premises, and outside as may be necessary.

14.3 Excavate all trenches open cut, keep trench banks as nearly vertical as practicable, and sheet and brace trenches where required for stability and safety. Excavate trenches true to line and make bottoms no wider than necessary to provide ample work room. Grade trench bottoms accurately. Machine grade only to the top line of the conduits, doing the remainder by hand. Do not cut any trench near or under footings without first consulting the Architect. All trenches shall be done in accordance with OSHA standards and regulations.

14.4 Backfilling shall be done with each layer compacted before another layer is added. No stones or coarse lumps shall be laid directly on a conduit or conduits.

14.5 Trenches shall be filled with the specified material. Sod, if any, shall be removed in cut sections and replaced in same manners.

14.6 Provide pumps and drainage of all open trenches for purposes of installing electrical duct and wiring.

14.7 Perform all backfilling in accordance with the requirements of and under the direction of the Geotechnical Engineer.

14.8 Where new underground trenching is required on sites or in any area where existing underground utilities exist, the Contractor shall provide an independent professional utility locating service to locate exact vertical and horizontal locations of all existing utilities. Where existing utilities are found the Contractor shall hand dig those areas to avoid disruption. The Contractor shall be responsible for immediate repairs to existing underground utilities damaged during construction. The Contractor shall repair all existing asphalt, concrete and landscape surfaces damaged or removed during construction to match their original conditions. Where trenching extends through public streets or roadways, the Contractor shall notify underground service alert in addition to the independent locating service 48 hours before start of construction to determine location of existing utilities by calling (800) 422-4133.

ARTICLE 15 CONCRETE

15.1 Where used for structures to be provided under the contract such as bases, etc., concrete work, and associated reinforcing shall be as specified under Division 3 of these specifications.

15.2 See other sections for additional requirements for underground vaults, cable ducts, etc.

ARTICLE 16 ACCESSIBILITY

16.1 Install all control devices or other specialties requiring reading, adjustment, inspection, repairs, removal, or replacement conveniently and accessibly throughout the finished building.

16.2 All required access doors or panels in walls and ceilings are to be furnished and installed as part of the work under this Section. Refer to Division 1 of these specifications and as noted below.

16.3 Where located in fire rated assemblies, provide doors which match the rating of the assembly and are approved by the jurisdictional authority.

16.4 Refer to 'finish schedule' for types of walls and ceilings in each area and the architectural drawings for rated wall construction.

16.5 Coordinate work of the various sections to locate specialties requiring accessibility with others to avoid unnecessary duplication of access doors.

ARTICLE 17 FLASHING

17.1 Flash and counter flash all conduits penetrating roofing membrane as shown on Architectural drawings. All work shall be in accordance with Division 7 of these specifications.

ARTICLE 18 IDENTIFICATION OF EQUIPMENT

18.1 All electrical equipment shall be labeled, tagged, stamped, or otherwise identified in accordance with the following schedules:

18.1.1 General:

18.1.1.1 In general, the installed laminated nameplates as hereinafter called for shall also clearly indicate its use, areas served, circuit identification, voltage and any other useful data.

18.1.1.2 All auxiliary systems, including communications, shall be labeled to indicate function.

18.1.2 Lighting and Local Panelboards:

18.1.2.1 Panel identification shall be with white and black micarta nameplates. Letters shall be no less than 3/8" high.

18.1.2.2 Circuit directory shall be two column typewritten card set under glass or glass equivalent. Each circuit shall be identified by the room number and/or number of unit and other pertinent data as required.

18.1.3 Distribution Switchboards and Feeders Sections:

18.1.3.1 Identification shall be with 1" x 4" laminated white micarta nameplates with black lettering on each major component, each with name and/or number of unit and other pertinent data as required. Letters shall be no less than 3/8" high.

18.1.3.2 Circuit breakers and switches shall be identified by number and name with 3/8" x 1-1/2" laminated micarta nameplates with 3/16" high letters mounted adjacent to or on circuit breaker or switch.

18.1.4 Disconnect Switches, Motor Starters and Transformers:

18.1.4.1 Identification shall be with white micarta laminated labels and 3/8" high black lettering.

18.1.5 All communication system terminal boxes including T.V., telephone/intercom, security, fire alarm, clock, and computer networking shall be provided with white micarta laminated labels and 3/8" high black lettering.

ARTICLE 19 CONSTRUCTION FACILITIES

19.1 Furnish and maintain from the beginning to the completion all lawful and necessary guards, railings, fences, canopies, lights, warning signs, etc. Take all necessary precautions required by City, State Laws, and OSHA to avoid injury or damage to any persons and property.

19.2 Temporary power and lighting for construction purposes shall be provided under this Section. All work shall be in accordance with Division 1 of these specifications.

ARTICLE 20 GUARANTEE

20.1 Guarantee all material, equipment and workmanship for all sections under this Division in writing to be free from defect of material and workmanship for one year from date of final acceptance, as outlined in the general conditions. Replace without charge any material or equipment proven defective during this period. The guarantee shall include performance of equipment under all site conditions, conditions of load, installing any additional items of control and/or protective devices, as required.

ARTICLE 21 PATENTS

21.1 Refer to the General Conditions for Contractor's responsibilities regarding patents.

ARTICLE 22 PLUMBING (DIVISION 22) / HEATING, VENTILATING, AND AIR CONDTIONING (DIVISION 23) / ELECTRICAL – COORDINATION REQUIREMENTS

22.1 All electrical work performed for this project shall conform to the California Electrical Code, to Local Building Codes and in conformance with Division 22, 23, and 26 of these specifications, whether the work is provided under the “Plumbing”, “Heating, Ventilating, and Air Conditioning”, or the “Electrical” Division of these specifications. Where the Division 22 and/or Division 23 Contractor is required to provide electrical work, he shall arrange for the work to be done by a licensed Division 26 Contractor, using qualified electricians. The Division 22 and/or Division 23 Contractor shall be solely and completely responsible for the correct functioning of all equipment regardless of who provided the electrical work.

22.2 The work under Division 22 and/or Division 23 shall include the following:

22.2.1 All motors required by mechanical equipment.

22.2.2 All starters for mechanical equipment which are not provided under the electrical division as part of a motor control center or otherwise indicated on the electrical drawings.

22.2.3 All wiring interior to packaged equipment furnished as an integral part of the equipment.

22.2.4 All control **wiring and conduit** for mechanical control systems.

22.2.5 All control systems required by mechanical equipment.

22.3 The work under Division 26 shall include the following:

22.3.1 All power wiring and conduit; and conduit only for EMS control conductors between each building and the main control panel.

22.3.2 Electrical disconnects as shown on the electrical drawings.

22.3.3 Starters forming part of a motor control center.

22.4 All power wiring and conduit to equipment furnished under Division 22 and/or Division 23 shall be provided under Division 26. Control wiring and conduit, whether line voltage or low voltage, shall be provided under the division which furnishes the equipment.

22.5 Power wiring shall be defined as all wiring between the panelboard switchboard overcurrent device, motor control center starter or switch, and the safety disconnect switch or control panel serving the equipment. Also, the power wiring between safety disconnect switch and the equipment line terminals.

22.6 Control wiring shall be defined as all wiring, either line voltage or low voltage, required for the control and interlocking of equipment, including but not limited to wiring to motor control stations, solenoid valves, pressure switches, limit switches, flow switches, thermostats, humidistats, safety devices, smoke detectors, and other components required for the proper operation of the equipment.

22.7 All motor starters which are not part of motor control centers and which are required for equipment furnished under this Division shall be furnished and installed by the Division furnishing the equipment and power wiring connected under Division 26. Motor starters and control devices in motor control centers shall be furnished and installed under Division 26.

22.8 Division 26 Contractor shall make all final connections of power wiring to equipment furnished under this Division.

22.9 Wiring diagrams complete with all connection details shall be furnished under each respective Section.

22.10 Motor starters supplied by Plumbing and/or Heating, Ventilating and Air Conditioning shall be fused combination type minimum NEMA Size 1, and

conform to appropriate NEMA standards for the service required. Provide NEMA type 3R/12 gasketed enclosures in wet locations. Provide all starters with appropriately sized overload protection and heater strips provided in each phase, hand/off auto switches, a minimum of 2 NO and NC auxiliary contacts as required, and an integral disconnecting means. For ½ horsepower motors and below, when control requirements do not dictate the use of a starter, a manual motor starter switch with overload protection in each phase may be provided. Acceptable manufacturers are Allen Bradley, General Electric, Square D, Furnas and Cutler Hammer.

ARTICLE 23 EQUIPMENT ROUGH-IN

23.1 Rough-in all equipment, fixtures, etc. as designed on the drawings and as specified herein. The drawings indicate only the approximate location of rough-ins. Mounting heights of all switches, receptacles, wall mounted fixtures and such equipment must be coordinated with the Architectural Designs. The Contractor shall obtain all rough-in information before progressing with any work for rough-in connections. Minor changes in the contract drawings shall be anticipated and provided for under this Division of the specifications to comply with rough-in requirements.

ARTICLE 24 OWNER FURNISHED AND OTHER EQUIPMENT

24.1 Rough-in and make final connections to all Owner furnished equipment shown on the drawings and specified, and all equipment furnished under other sections of the specifications.

ARTICLE 25 EQUIPMENT FINAL CONNECTIONS

25.1 Provide all final connections for the following:

25.1.1 All equipment furnished under this Division.

25.1.2 Electrical equipment furnished under other sections of the specification.

25.1.3 Owner furnished equipment as specified under this Division.

ARTICLE 26 INSERTS, ANCHORS, AND MOUNTING SLEEVES

26.1 Inserts and anchors must be:

26.1.1 Furnished and installed for support of work under this Division.

26.1.2 Mounting of equipment that is of such size as to be free standing and that equipment which cannot conveniently be located on walls, such as motor starters, etc., shall be rigidly supported on a framework of galvanized steel angle of Unistrut or B-line systems with all unfinished edges painted.

26.1.3 Furnish and install all sleeves as required for the installation of all work under all Sections of this Division and for all communication systems

including any communication systems described in this Section which are bid to the General Contractor. Sleeves through floors, roof, and walls shall be as described in “Conduit and Fittings” Section 26 05 33.

ARTICLE 27 SEISMIC ANCHORING

27.1 All switchgear and other free standing electrical equipment or enclosures shall be anchored to the floor and braced at the top of the equipment to the structure. Where details have not been provided on the drawings, anchorage shall comply with CBC Section 1616A.1.12. The Contractor shall submit drawings signed by the Contractors registered structural Engineer indicating method of compliance prior installation.

27.2 All sound systems, communication, signal or data networking equipment or enclosures shall be anchored to the structure. Where details have not been provided on the drawings, anchorage shall comply with CBC Section 1616A.1.12. The Contractor shall submit drawings signed by the Contractors registered Structural Engineer indicating method of compliance prior to installation.

ARTICLE 28 RUST PROOFING

28.1 Rust proofing must be applied to all ferrous metals and shall be in accordance with Section 05500 of these specifications and as noted below.

28.1.1 Hot-dipped galvanized shall be applied and after forming of angle-iron, bolts, anchors, etc.

28.1.2 Hot-dipped galvanized coating shall be applied after fabrication for junction boxes and pull boxes cast in concrete.

ARTICLE 29 GENERAL WIRING

29.1 Where located adjacent in walls, outlet boxes shall not be placed back to back, nor shall extension rings be used in place of double boxes, all to limit sound transmission between rooms. Provide short horizontal nipple between adjacent outlet boxes, which shall have depth sufficient to maintain wall coverage in rear by masonry wall.

29.2 In those instances where outlet boxes, recessed terminal boxes, or recessed equipment enclosures are installed in a fire rated assembly, provide "Flamesafe FSD 1077" fire stopping pads or approved equal, over the outlet or box.

29.3 Complete rough-in requirements of all equipment to be wired under the contract are not indicated. Coordinate with respective trades furnishing equipment or with the Architect as the case may be for complete and accurate requirements to result in a neat, workmanlike installation.

ARTICLE 30 SEPARATE CONDUIT SYSTEMS

30.1 Each electrical and signal system shall be contained in a separate conduit system as shown on the drawings and as specified herein. This includes each power system, each lighting system, each signal system of whatever nature, telephone, standby system, sound system, control system, fire alarm system, etc.

30.2 Further, each item of building equipment must have its own run of power wiring. Control wiring may be included in properly sized conduit for equipment feeders of #6 AWG and smaller, having separate conduit for larger sizes.

ARTICLE 31 CLEANUP

31.1 In addition to cleanup specified under other sections, thoroughly clean all parts of the equipment. Where exposed parts are to be painted, thoroughly clean off any spattered construction materials and remove all oil and grease spots. Wipe the surface carefully and scrape out all cracks and corners.

31.2 Use steel brushes on exposed metal work to carefully remove rust, etc., and leave smooth and clean.

31.3 During the progress of the work, keep the premises clean and free of debris.

ARTICLE 32 UTILITY SERVICES

32.1 The Division 26 Contractor shall contact the serving utility companies; notify the serving power, telephone and cable TV utilities of the following:

32.1.1 Name and address of Contractor.

32.1.2 Estimated times of construction start, completion and required service connections.

32.1.3 Project service voltage, phase load, and service size.

32.1.4 Provide to the Architect written verification from each utility company indicating their concurrence with the contract documents.

32.2 Contractor shall notify underground service alert 48 hours before start of construction to determine location of existing utilities by calling (800) 422-4133. All work shall be in accordance with the Division 1 Sections of these specifications.

32.3 All utility company requirements shall be complied with and approval shall be obtained from the utility company for service equipment. Such as, verification of a field test of the ground fault protection on the main service equipment, panic hardware and etc.

ARTICLE 33 TEST AND INSPECTION PROCEDURES – EXISTING MEDIUM VOLTAGE, AIR INSULATED, CIRCUIT BREAKER TESTS

33.1 Tests shall be done in accordance with ANSI/NETA Standards and by a contractor certified in medium voltage testing and procedures. Contractor qualifications shall be submitted to the electrical engineer of record for approval.

33.2 Testing shall not be done or scheduled until the outage is scheduled and approved by the owner. Outage shall not exceed 24 hours unless approved by the owner and coordinated with the CM and Architect of Record.

33.3 Visual and Mechanical Inspection

33.3.1 Inspect physical and mechanical condition.

33.3.2 Inspect anchorage, alignment, and grounding.

33.3.3 Verify that all maintenance devices are available for servicing and operating the breaker.

33.3.4 Clean the Unit.

33.3.5 Inspect arc chutes.

33.3.6 Inspect moving and stationary contacts for condition, wear, and alignment.

33.3.7 Close/open breaker and check for binding, friction, contact alignment, contact sequence, and penetration.

33.3.8 Perform all mechanical operation tests on the operating mechanism in accordance with manufacturer's published data.

33.3.9 Inspect bolted electrical connections for high resistance using one of the following methods:

33.3.9.1 Use of a low-resistance ohmmeter in accordance with Section 33.4.

33.3.9.2 Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data.

33.3.9.3 Perform a thermographic survey in accordance with NETA standards.

33.3.10 Verify cell fit and element alignment.

33.3.11 Verify racking mechanism operation.

33.3.12 Inspect puffer operation.

33.3.13 Use appropriate lubrication on moving current-carrying parts and on moving and sliding surfaces.

33.3.14 Record as-found and as-left operation-counter readings.

33.4 Electrical Tests

33.4.1 Perform resistance measurements through bolted connections with a low-resistance ohmmeter, if applicable. See Section 33.3.

33.4.2 Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with the circuit breaker closed, and across each open pole. Apply voltage in accordance with manufacturer's published data.

33.4.3 Perform a contact/pole-resistance test.

33.4.4 With the breaker in a test position, perform the following tests:

33.4.4.1 Trip and close breaker with the control switch.

33.4.4.2 Trip breaker by operating each of its protective relays. Recalibrate and adjust relay settings based on time current study to be done for the project.

33.4.4.3 Verify mechanism charge, trip-free, and antipump functions.

33.4.4.4 Verify blowout coil circuit continuity.

33.4.4.5 Verify operation of heaters, if applicable.

33.4.4.6 Test instrument transformers in accordance with NETA standards.

33.5 Test Values

33.5.1 Test Values – Visual and Mechanical

33.5.1.1 Bolt-torque levels should be in accordance with manufacturer's published data.

33.5.1.2 Results of the thermographic survey shall be in accordance with NETA standards.

33.5.1.3 Compare travel and velocity values to manufacturer's published data.

33.5.2 Test Values – Electrical

33.5.2.1 Compare bolted connection resistance values to values of similar connections. Investigate values which deviate from

those of similar bolted connections by more than 50 percent of the lowest value.

33.5.2.2 Circuit breaker insulation resistance should be in accordance with manufacturer's published standards.

33.5.2.3 Insulation-resistance values of circuit breakers should be in accordance with manufacturer's published data. Values of insulation resistance less than manufacturer's recommendations should be investigated.

33.5.2.4 Microhm or dc millivolt drop values shall not exceed the high levels of the normal range as indicated in the manufacturer's published data. If manufacturer's data is not available, investigate values that deviate from adjacent poles or similar breakers by more than 50 percent of the lowest value.

33.5.2.5 Breaker mechanism charge, close, open, trip, trip-free, and antipump features shall function as designed.

33.5.2.6 Minimum pickup for trip and close coils shall be in accordance with manufacturer's published data.

33.5.2.7 Power-factor or dissipation-factor and capacitance values should be within ten percent of nameplate rating for bushings. Hot collar tests are evaluated on a milliampere/milliwatt loss basis, and the results should be compared to values of similar bushings.

33.5.2.8 If no evidence of distress or insulation failure is observed by the end of the total time of voltage application during the over potential test, the circuit breaker is considered to have passed the test.

33.5.2.9 The blowout coil circuit should exhibit continuity.

33.5.2.10 Heaters should be operational.

33.5.2.11 The results of instrument transformer tests shall be in accordance with manufacturer's standards.

ARTICLE 34 PAINTING

34.1 Paint all unfinished metal as required in accordance with Division 1 of these specifications. (Galvanized and factory painted equipment shall be considered as having a sub-base finish.)

ARTICLE 35 GENERAL DEMOLITION REQUIREMENTS

35.1 Remove existing work and items which are required to be removed in such manner that minimum damage and disturbance is caused to adjacent and connection work scheduled to remain. Repair or replace existing work schedule.

35.2 Include preparation of existing areas to receive new materials and removal of materials and equipment to alter or repair the existing building as indicated and as specified.

35.3 Perform demolition exercising proper care to prevent injury to the public, workmen and adjoining property.

35.4 Perform the removal, cutting, drilling of existing work with extreme care and use small tools in order not to jeopardize the structural integrity of the building.

35.5 Rebuild to existing condition or better, existing work which has to be removed to allow the installation of new work as required.

35.6 Remove, protect and reinstall existing items as indicated. Replace materials scheduled for reuse which are damaged by the Contractor to the extent that they cannot be reused, with equal quality material, and installation.

35.7 Do not reuse in this project materials and items removed from existing site or building, except with specific written approval by the Architect in each case, unless such removed material or item is specifically indicated or specified to be reused.

35.8 Remove materials and equipment indicated to be salvaged for reinstallation and store to prevent damage, and reinstall as the work progresses. Do not reuse in this project, other materials and equipment removed from existing site or building, except with specific written approval by the Architect in each case.

35.9 Patch areas requiring patching, including damage caused by removing, relocating or adding fixtures and equipment, damages caused by demolition at adjacent materials.

35.10 Do not stockpile debris in the existing building, without the approval of the Architect. Remove debris as it accumulates from removal operations to a legal disposal area.

35.11 Contractor to assume existing oil filled and dry transformers, oil switches, ballasts, lamps, wooden poles, cross arms, computers, computer monitors, and conductor insulation containing materials considered hazardous. Comply with local, state and federal regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution. Contractor shall be responsible for removal of the above hazardous materials where encountered. Include all costs for such removal as part of this contract.

35.12 All fluorescent, compact fluorescent, high intensity discharge, metal halide, mercury vapor, high and low pressure sodium, and neon lamps are to be disposed of as required by the California Waste Rule Regulations as described in the California Code of Regulations, Title 22, Division 4.5 and Chapter 23.

35.13 **Communication System:** Where new communication systems, (including telephone, intercom, clock, security, fire alarm, data, multimedia, CATV or lighting controls) are installed to replace existing systems, unless where otherwise directed the existing systems shall remain fully operational until the new system has been installed and tested. Demolition of the existing systems shall include removal of all equipment and associated wiring and exposed conduits and providing new blank covers for all abandoned device locations.

35.14 **Salvage Power Equipment:** The Contractor shall carefully remove all existing switchboards, panelboards, transformers, and confirm in writing which items the Owner wishes to keep. These items shall be transported to the Owner's maintenance facilities by the Contractor. All remaining items shall be disposed of by the Contractor.

35.15 **Salvage Lighting Equipment:** The Contractor shall confirm in writing which items the Owner wishes to keep. These items shall be transported to the Owner's maintenance facilities by the Contractor. All remaining items shall be disposed of by the Contractor.

35.16 **Salvage Communication Equipment:** The Contractor shall carefully remove all communication devices (telephone, intercom, clock, security, fire alarm, data, multimedia, CATV or lighting controls) and box each type of devices separately. The Contractor shall deliver all items to the Owner's maintenance facility.

ARTICLE 36 PROJECT CLOSEOUT

36.1 Prior to completion of project, compile a complete equipment maintenance manual for all equipment supplied under sections of this Division, in accordance with Division 1 of these specifications and as described below.

36.2 Equipment Lists and Maintenance Manuals:

36.2.1 Prior to completion of job, Contractor shall compile a complete equipment list and maintenance manuals. The equipment list shall include the following items for every piece of material equipment supplied under this Section of the specifications:

36.2.1.1 Name, model, and manufacturer.

36.2.1.2 Complete parts drawings and lists.

36.2.1.3 Local supply for parts and replacement and telephone number.

36.2.1.4 All tags, inspection slips, instruction packages, etc., removed from equipment as shipped from the factory, properly identified as to the piece of equipment it was taken from.

36.3 Maintenance manuals shall be furnished for each applicable section of the specifications and shall be suitably bound with hard covers and shall include all available manufacturers' operating and maintenance instructions, together with "as-built" drawings to properly operate and maintain the equipment. The equipment lists and maintenance manuals shall be submitted in duplicate to the Architect for approval not less than 10 days prior to the completion of the job. The maintenance manuals shall also include the name, address, and phone numbers of all subcontractors involved in any of the work specified herein. Four copies of the maintenance manuals bound in single volumes shall be provided.

ARTICLE 37 RECORD DRAWINGS

37.1 The Division 26 Contractor shall maintain record drawings as specified in accordance with Division 1 of these specifications, and as noted below.

37.2 Drawings shall show locations of all concealed underground conduit runs, giving the number and size of conduit and wires. Underground ducts shall be shown with cross section elevations and shall be dimensioned in relation to permanent structures to indicate their exact location. Drawing changes shall not be identified only with referencing CORs and RFIs, the drawings shall reflect all of the actual additions or changes made. All as-built drawing information shall be prepared by the contractor in AutoCAD, updating the contract computer files as needed to reflect actual installed conditions for all site plans, lighting, power, communication, networking, audio visual, security or fire alarms systems included in the scope of work for this project.

37.3 One set of these record drawings shall be delivered to the Architect. The engineer will review documents for completeness, and will not be responsible for editing contractor computer files.

ARTICLE 38 CHANGES AND EXTRA WORK

38.1 When **changes** in work are requested, the Division 26 Contractor shall provide unit prices for the work involved in accordance with Division 1 of these specifications, and the following:

38.1.1 The material Costs shall **not exceed** the latest edition of the "Trade Service" end column "C" price list. The materials prices may be higher only where the Contractor can produce invoices to substantiate higher material costs. The Contractor shall submit a print out copy of the trade service sheets with the change order to substantiate these values.

38.1.2 The labor Costs shall **not exceed** the latest edition of the "NECA Manual of Labor Units" **normal column**.

38.2 When **credits** in work are requested, the Division 26 Contractor shall provide unit prices for the work involved in accordance with Division 1 of these specifications, and the following:

38.2.1 The Material Costs shall **not be less than 80% of** the latest edition of the "Trade Service" end column price list. The materials prices may be lower only where the Contractor can produce invoices to substantiate lower material costs. Restocking fees may also be included in this amount where applicable.

38.2.2 The Labor Costs shall **not be less than 80% of** the latest edition of the "NECA Manual of Labor Units" **normal column**.

38.3 Conduit pricing for conduits of all types sized 3" or smaller.

When changes in the scope of work require the Contractor to estimate conduit Installations, they shall **NOT include labor values (only material cost may be included)** for any of the below items. The labor values for conduit installation represented in the NECA manual are inflated to a point where additional labor for the below items can not be justified.

38.3.1 Couplings.

38.3.2 Set Screw or Compression Fittings, locknuts, Bushings and washers.

38.3.3 Conduit straps and associated screws or nails.

38.3.4 LB fittings or other specialty fittings or specialty mounting hardware may be included where needed.

38.4 Wire pricing for all types and sizes.

When changes in the scope of work require the Contractor to estimate wire installations they shall **NOT include labor values (only material cost may be included)** for any of the below items. The labor values for wire installation represented in the NECA manual are inflated to a point where additional labor for the below items can not be justified.

38.4.1 Locknuts, Bushings, tape, wire markers.

38.5 When changes in the scope of work require other equipment installations such as lighting fixtures, panelboards, switchboards, wiring devices, communications equipment etc. the Contractor shall **NOT include labor values (only material cost may be included)** for any of the below items. The labor values for these equipment items represented in the NECA manual are inflated to a point where additional labor for the below items can not be justified.

38.5.1 Associated screws, nails, bolts, anchors or supports.

38.5.2 Locknuts, washers, tape.

38.6 The total labor hours for extra work will be required to be calculated as follows:

38.6.1 Change orders with 1 to 30 total labor hours

General Laborer	10%	of total labor hours
Journeyman	10%	of total labor hours
Foreman	80%	of total labor hours

38.6.2 Change orders with 31 to 100 total labor hours

General Laborer	20%	of total labor hours
Journeyman	40%	of total labor hours
Foreman	40%	of total labor hours

38.6.3 Change orders with over 100 total labor hours

General Laborer	30%	of total labor hours
Journeyman	50%	of total labor hours
Foreman	20%	of total labor hours

38.7 When change orders are issued which allow the work to be completed in the normal sequence of construction, the labor rates shall be based on the most current "Prevailing Wage" – straight time total hourly rate. When change orders require the Contractor to work out of sequence the "Prevailing Wage" – daily overtime hourly rate shall apply. Special condition situations shall be reviewed on an individual basis for alternate hourly rate schedules.

38.8 Costs **will not** be permitted for additional supervision on site or office time for processing any change order other than the 10% overhead allowance as described in Division 1. Cost for special equipment required to install items for an individual change order are permitted and must be individually identified. Lump Sum cost for small tools or any other cost not specifically required for the change order are not permitted.

38.9 Contractor estimates shall be formatted to clearly identify each of the following:

38.9.1 Line item description of each type of material or labor item.

38.9.2 Description of quantity for each item.

38.9.3 Description of (material cost per / quantity).

38.9.4 Description of (labor cost per / quantity).

38.9.5 Description of total labor hour breakdown per Foreman, Journeyman or General Laborer as described above.

ARTICLE 39 ELECTRONIC FILES

39.1 The Contractor shall make a ***written*** request directly to Johnson Consulting Engineers for electronic drawing files. As a part of the written request, please include the following information:

39.1.1 Clearly indicate each drawing sheet needed (i.e., E1.1, E2.1, etc.).

39.1.2 Identify the name, phone number, mailing address and e-mail address of the person to receive the files.

39.1.3 Provide written confirmation and agreement with the requirements described for payment of computer files, as described below.

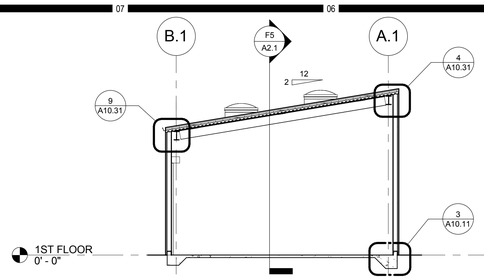
39.2 Detail or riser diagram sheets, or any other drawings other than floor plans or site plans, ***will not be made available to the Contractor***.

39.3 Files will only be provided in the AutoCAD format in which they were created.

39.4 Requests for files will be processed as soon as possible; a minimum of 7 working days should be the normal processing time. The Contractor shall be completely responsible for requesting the files in time for their use.

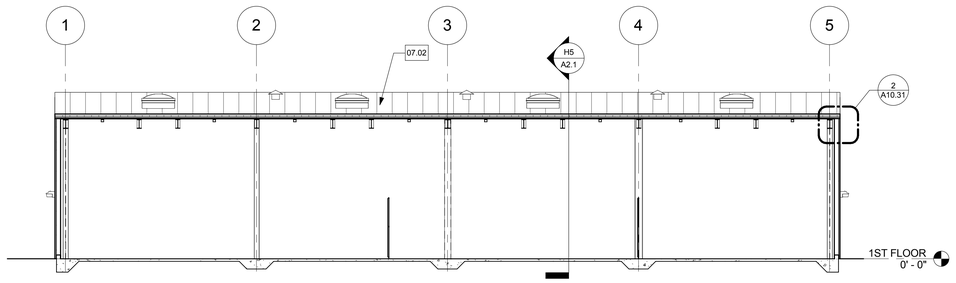
39.5 CAD files will be made available via e-mail or on disk, depending on the quantity of files requested. The Contractor requesting the files will be required to pay $50.00 per drawing plan, or $300.00 maximum, whichever is ***less***.

END OF SECTION



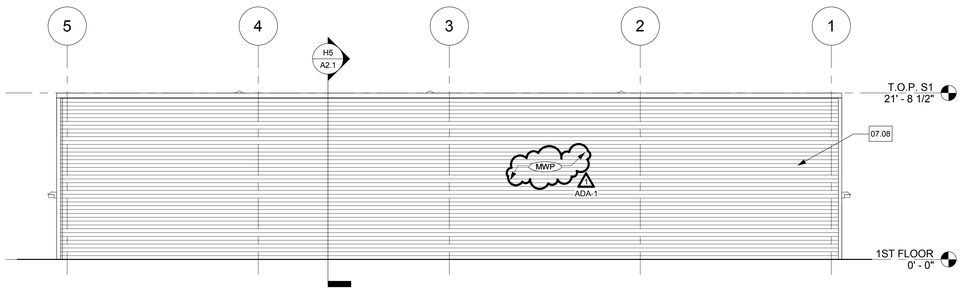
BUILDING SECTION | H5

1/8" = 1'-0"



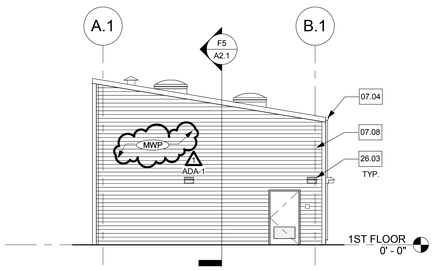
BUILDING SECTION | F5

1/8" = 1'-0"



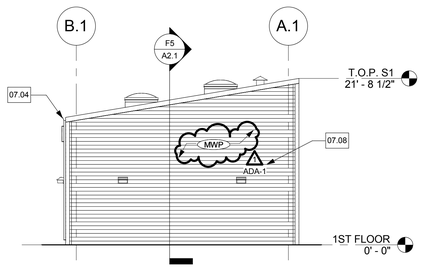
EXTERIOR ELEVATION BUILDING 1 - NORTH | D5

1/8" = 1'-0"



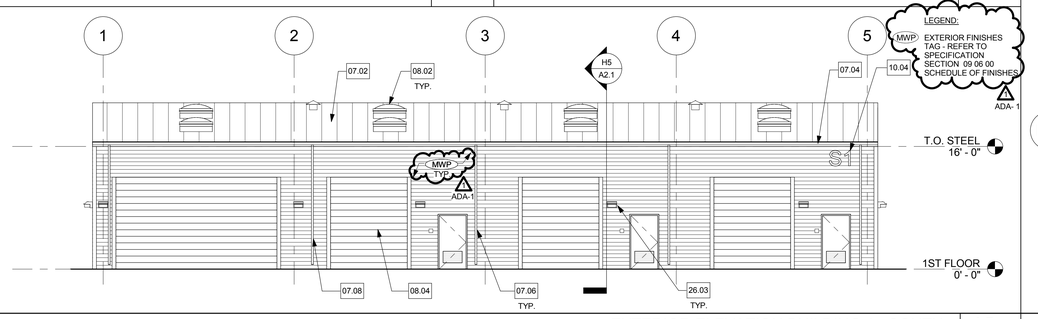
EXTERIOR ELEVATION BUILDING 1 - WEST | B7

1/8" = 1'-0"



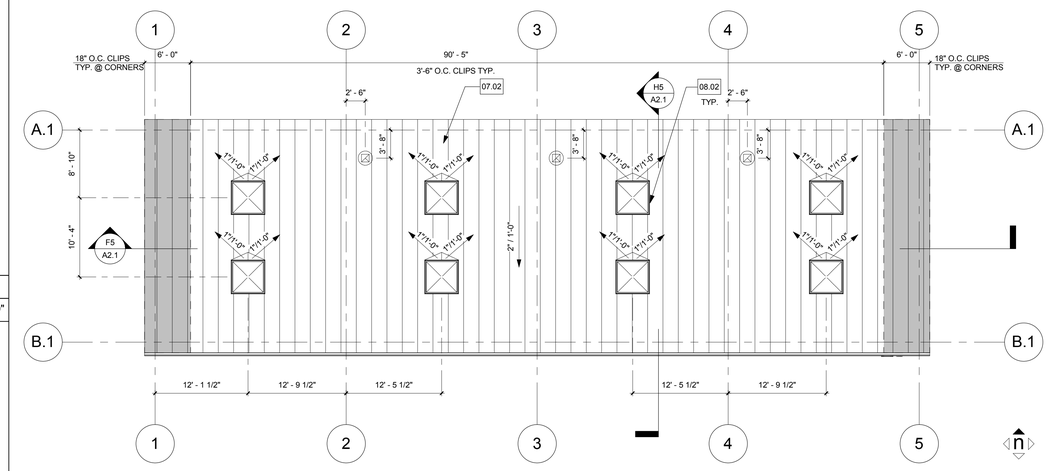
EXTERIOR ELEVATION BUILDING 1 - EAST | B5

1/8" = 1'-0"



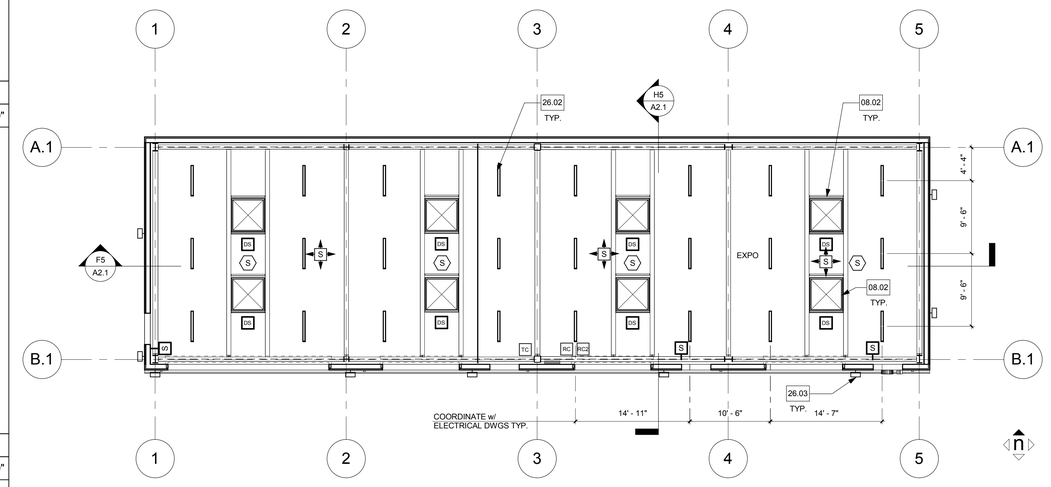
EXTERIOR ELEVATION BUILDING 1 - SOUTH | A5

1/8" = 1'-0"



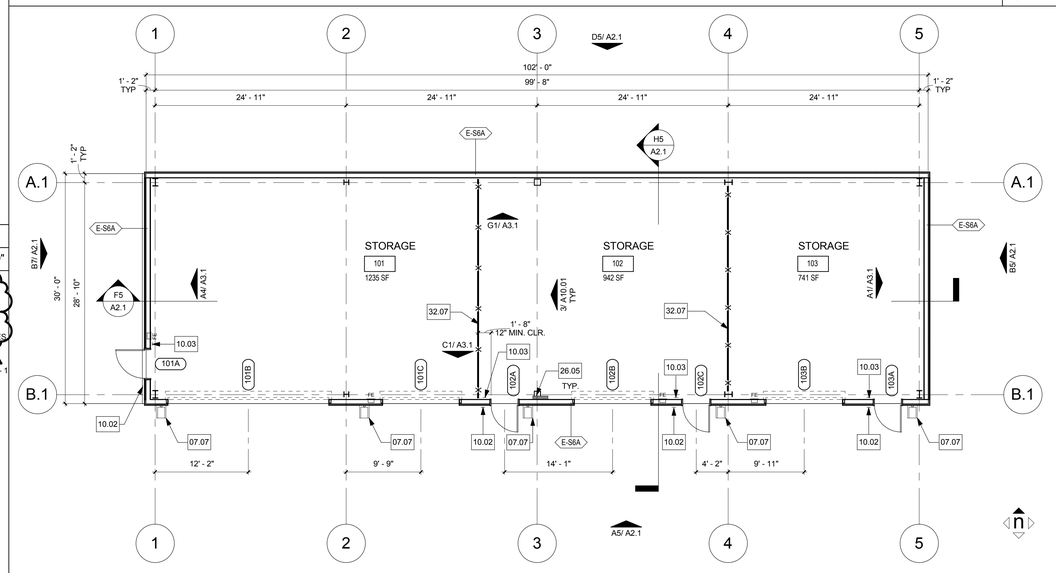
ROOF PLAN | G1

1/8" = 1'-0"



CEILING PLAN | D1

1/8" = 1'-0"



FLOOR PLAN | A1

1/8" = 1'-0"

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(SM)

KEYNOTES

NO.	NOTE - DETAIL
07.02	METAL ROOFING PANEL ASSEMBLY - 1/A10.31
07.04	GUTTER - 9/A10.31
07.06	DOWNSPOUT - 11/A10.11
07.07	SPLASHBLOCKS AT DOWNSPOUT LOCATIONS - 10/A10.11
07.08	METAL WALL PANELS - 1 & 2/A10.11
08.02	48" X 48" SKYLIGHT - 6&8/A10.31
08.04	OVERHEAD COILING DOOR
10.02	TACTILE ROOM IDENTIFICATION SIGN - 2/A10.81
10.03	TACTILE EXIT SIGN - 13/A10.81
10.04	EXTERIOR BUILDING SIGNAGE - 22/A10.31
26.02	INTERIOR LIGHT FIXTURES, SEE ELEC DWGS & 21/A10.81
26.03	EXTERIOR LIGHT FIXTURES/ F.A HORN DEVICE, SEE ELEC DWGS & 21/A10.31
26.05	ELECTRICAL/ F.A PANEL, F.A DEVICES SEE ELEC DWGS
32.07	8' - 0" HIGH CHAIN LINK FENCE - 1/A10.01

FLOOR PLAN LEGEND

SYMBOL	DESCRIPTION	DETAIL
	METAL STUD WALL	
FE	SEMI-RECESSED FIRE EXTINGUISHER CABINET OPERABLE LATCH @48" A.F.F.	PER 12 / A10-81
	30" x 48" ACCESSIBLE CLEAR SPACE	

CEILING / ROOF PLAN LEGEND

SYMBOL	DESCRIPTION	
EXPO	NO CEILING - EXPOSED TO STRUCTURE ABOVE	
(INTERIOR) (EXTERIOR)	LIGHTING FIXTURES	SEE ELEC DWGS
DS	MOUNT DAYLIGHT SENSOR	SEE ELEC DWGS
S	SEPERATE SWITCHING FOR TASK LIGHTING	SEE ELEC DWGS
S	MOUNT SENSOR	SEE ELEC DWGS
TC	TIME CLOCK	SEE ELEC DWGS
RC	TO CONTROL ZONE 'a'	SEE ELEC DWGS
RC2	TO CONTROL ZONES 'b' and 'C' SEPARATELY	SEE ELEC DWGS
S	CEILING MOUNTED SMOKE DETECTOR	SEE ELEC DWGS
H	CEILING MOUNTED HEAT DETECTOR	SEE ELEC DWGS
	48" x 48" SKYLIGHT	
	ROOF EXHAUST FAN	SEE ELEC DWGS
	ELECTRICAL/ F.A. PANEL	SEE ELEC DWGS

NOTES

1. REFER TO SHEET G0.1 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. ALL DIMENSIONS ARE TO FOS OR CENTER LINE OF STEEL UNLESS NOTED OTHERWISE.
3. FOR FLOOR ELEVATIONS, REFER TO CIVIL DRAWINGS.
4. FOR FINISHES, REFER TO SCHEDULES, SHEET A4.1.
5. FOR WALL TYPES, REFER TO SHEET A10.11.
6. FOR DOOR CLEARANCE REQUIREMENTS, REFER TO DETAIL 1 / A10.81
7. REFER TO SHEET A4.1 FOR DOOR SCHEDULES AND FRAME TYPES.
8. PROVIDE 6" CONC CURB AT ALL PERIMETER WALLS, (EXCEPT AT DOOR OPENINGS). REFER TO STRUCTURAL DETAIL 1A/S1.5

FLOOR FINISH LEGEND

CONC1, REFER TO SPEC SECTION 09 06 00 SCHEDULE FOR FINISHES

Consultant Seal

Agency Approval FILE NO.37431

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APPL. 04-115420
ACS _____ FLS _____ SSS _____
DATE _____

Project Title

PALOMAR COLLEGE
Learning for Success

PALOMAR COLLEGE
NEW STORAGE BUILDINGS
1140 W. MISSION RD.,
SAN MARCOS, CA 92069
(760) 744-1150

No.	Description	Date
1	ADDENDUM 1	1/16/2018

Drawing Title:
STORAGE BUILDING 1 - PLANS, ELEVATIONS, AND SECTIONS

Architect's Seal

LICENSED ARCHITECT
KENNETH SALYER
NO. C-19082
REN. 11-30-19
STATE OF CALIFORNIA

Designed:	DS	Project No.	3443001-302
Drawn:	VH,GS	Scale:	As indicated
QAQC	KS, GS	Drawing No.	A2.1
Date:	10/18/17		

"AS REVISED"

1

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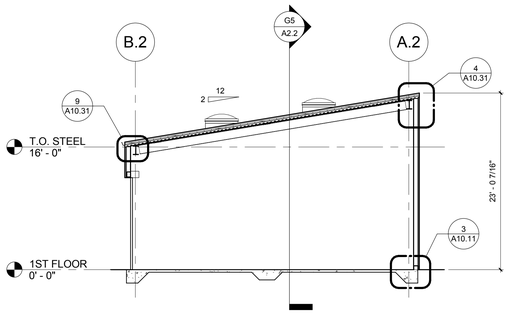
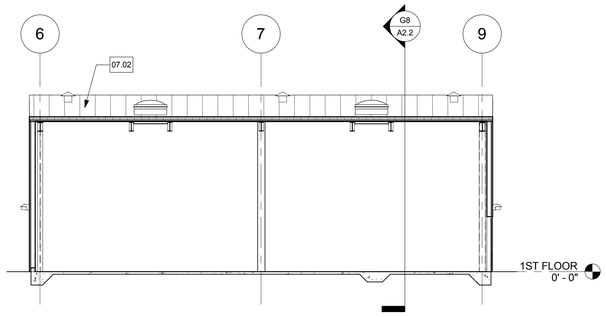
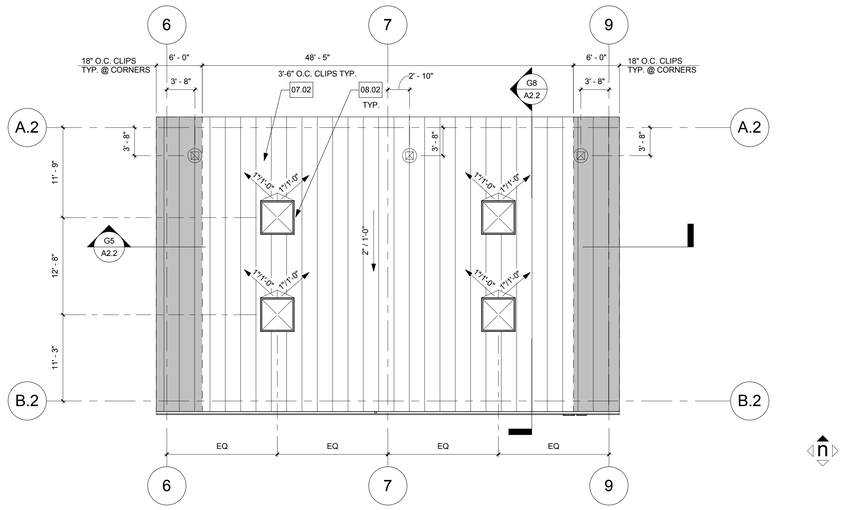


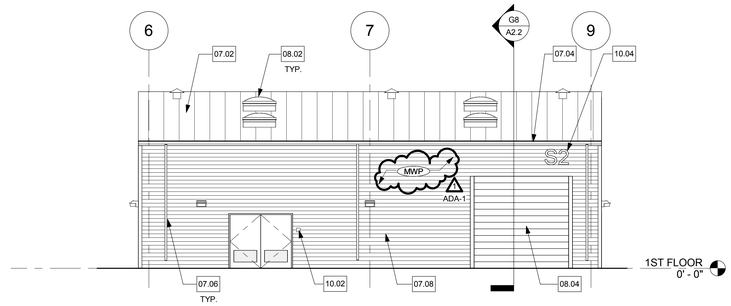
BUILDING SECTION | G8 | 1/8" = 1'-0"



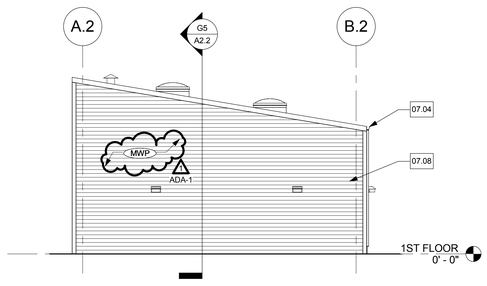
BUILDING SECTION | G5 | 1/8" = 1'-0"



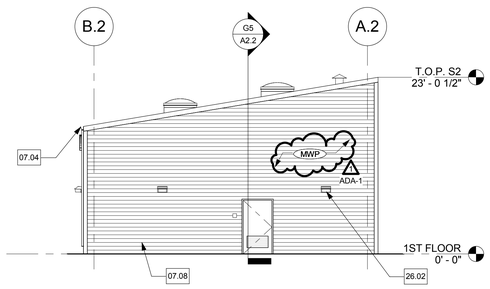
ROOF PLAN | G1 | 1/8" = 1'-0"



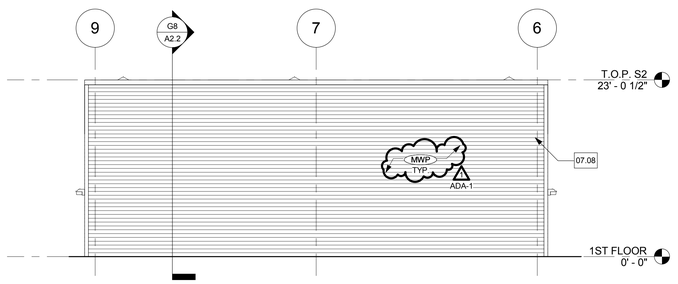
EXTERIOR ELEVATION BUILDING 2 - SOUTH | D5 | 1/8" = 1'-0"



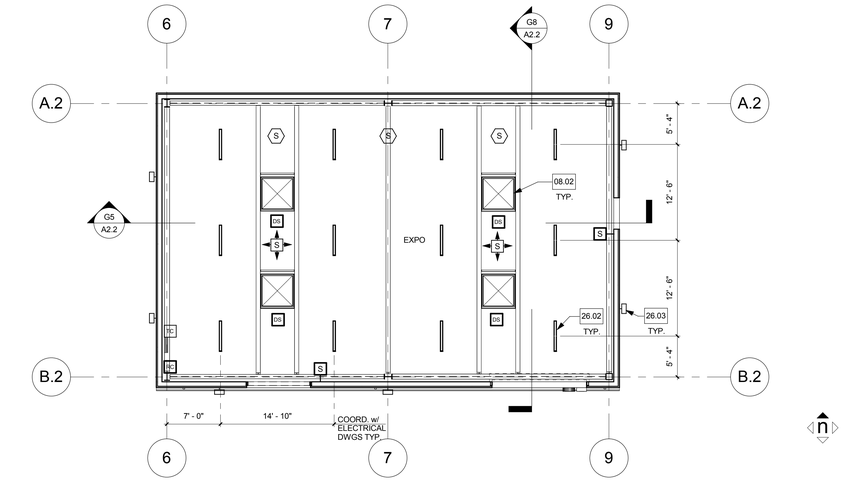
EXTERIOR ELEVATION BUILDING 2 - WEST | B7 | 1/8" = 1'-0"



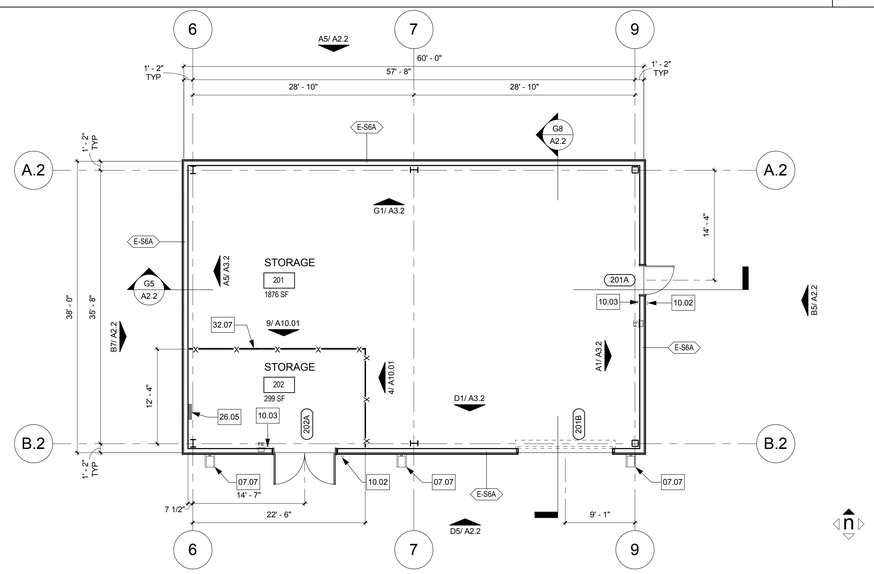
EXTERIOR ELEVATION BUILDING 2 - EAST | B5 | 1/8" = 1'-0"



EXTERIOR ELEVATION BUILDING 2 - NORTH | A5 | 1/8" = 1'-0"



CEILING PLAN | D1 | 1/8" = 1'-0"



FLOOR PLAN | A1 | 1/8" = 1'-0"

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SM

KEYNOTES

NO.	NOTE - DETAIL
07.02	METAL ROOFING PANEL ASSEMBLY - 1/A10.31
07.04	GUTTER - 9/A10.31
07.06	DOWNSPOUT - 11/A10.11
07.07	SPLASHBLOCKS AT DOWNSPOUT LOCATIONS - 10/A10.11
07.08	METAL WALL PANELS - 1 & 2/A10.11
08.02	48" X 48" SKYLIGHT - 6&8/A10.31
08.04	OVERHEAD COILING DOOR
10.02	TACTILE ROOM IDENTIFICATION SIGN - 2/A10.81
10.03	TACTILE EXIT SIGN - 13/A10.81
10.04	EXTERIOR BUILDING SIGNAGE - 22/A10.31
26.02	INTERIOR LIGHT FIXTURES, SEE ELEC DWGS & 21/A10.81
26.03	EXTERIOR LIGHT FIXTURES/ F.A HORN DEVICE, SEE ELEC DWGS & 21/A10.31
26.05	ELECTRICAL/ F.A PANEL, F.A DEVICES SEE ELEC DWGS
32.07	8' - 0" HIGH CHAIN LINK FENCE - 1/A10.01

FLOOR PLAN LEGEND

SYMBOL	DESCRIPTION	DETAIL
	METAL STUD WALL	
FE	SEMI-RECESSED FIRE EXTINGUISHER CABINET OPERABLE LATCH @48" A.F.F.	PER 12 / A10-81
	30" x 48" ACCESSIBLE CLEAR SPACE	

CEILING / ROOF PLAN LEGEND

SYMBOL	DESCRIPTION	
EXPO	NO CEILING - EXPOSED TO STRUCTURE ABOVE	
(INTERIOR) / (EXTERIOR)	LIGHTING FIXTURES	SEE ELEC DWGS
DS	MOUNT DAYLIGHT SENSOR	SEE ELEC DWGS
S	SEPERATE SWITCHING FOR TASK LIGHTING	SEE ELEC DWGS
S	MOUNT SENSOR	SEE ELEC DWGS
TC	TIME CLOCK	SEE ELEC DWGS
RC	TO CONTROL ZONE 'a'	SEE ELEC DWGS
RC2	TO CONTROL ZONES 'b' and 'C' SEPARATELY	SEE ELEC DWGS
S	CEILING MOUNTED SMOKE DETECTOR	SEE ELEC DWGS
H	CEILING MOUNTED HEAT DETECTOR	SEE ELEC DWGS
	48" x 48" SKYLIGHT	
	ROOF EXHAUST FAN	SEE ELEC DWGS
	ELECTRICAL/ F.A. PANEL	SEE ELEC DWGS

NOTES

1. REFER TO SHEET G0.1 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. ALL DIMENSIONS ARE TO FOS OR CENTER LINE OF STEEL UNLESS NOTED OTHERWISE.
3. FOR FLOOR ELEVATIONS, REFER TO CIVIL DRAWINGS.
4. FOR FINISHES, REFER TO SCHEDULES, SHEET A4.1.
5. FOR WALL TYPES, REFER TO SHEET A10.11
6. FOR DOOR CLEARANCE REQUIREMENTS, REFER TO DETAIL 1 / A10.81
7. REFER TO SHEET A4.1 FOR DOOR SCHEDULES AND FRAME TYPES.
8. PROVIDE 6" CONC CURB AT ALL PERIMETER WALLS, (EXCEPT AT DOOR OPENINGS). REFER TO STRUCTURAL DETAIL 1A/S1.5

FLOOR FINISH LEGEND

CONC1, REFER TO SPEC SECTION 09 06 00 SCHEDULE FOR FINISHES

Consultant Seal

Agency Approval FILE NO.37-C1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APPL. 04-115420
ACS_____ FLS_____ SSS_____
DATE _____

Project Title

PALOMAR COLLEGE
NEW STORAGE BUILDINGS
1140 W. MISSION RD.,
SAN MARCOS, CA 92069
(760) 744-1150

No.	Description	Date
1	ADDENDUM 1	1/16/2018

Drawing Title:
STORAGE BUILDING 2 - PLANS, ELEVATIONS AND SECTIONS

Architect's Seal
LICENSED ARCHITECT KENNETH SAITER NO. C-19082 REN. 11-30 STATE OF CALIFORNIA

Designed:	DS	Project No.	3443001-302
Drawn:	VH,GS	Scale:	As indicated
QAQC	KS	Drawing No.	A2.2
Date:	10/18/17		

"AS REVISED"

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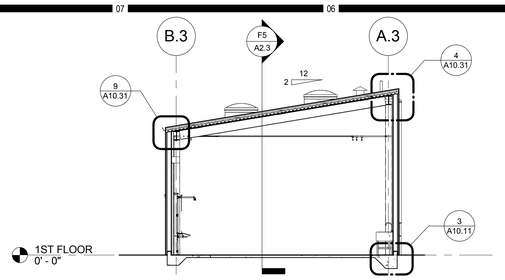
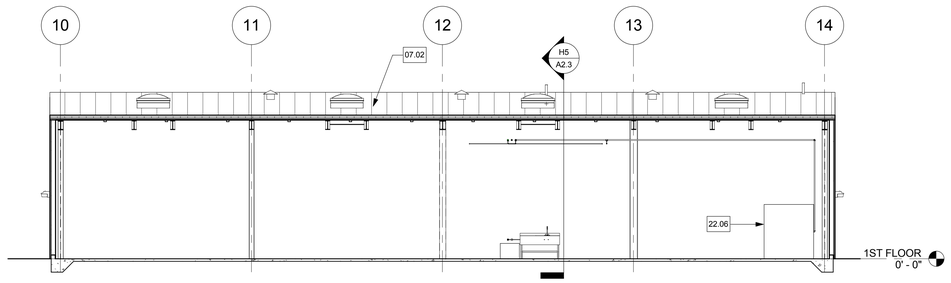


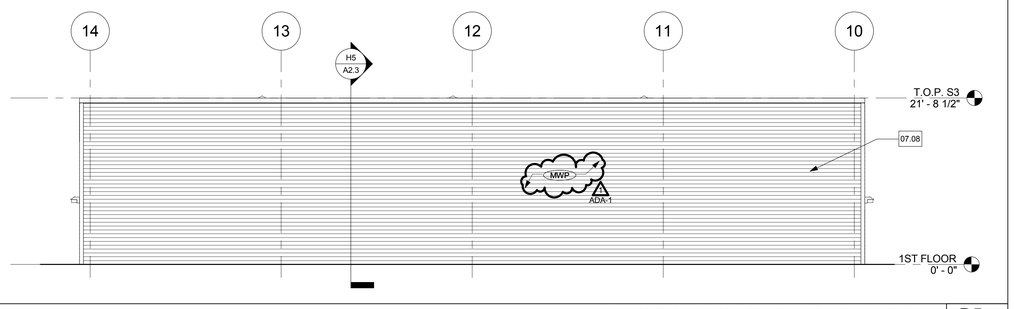
BUILDING SECTION H5

1/8" = 1'-0"



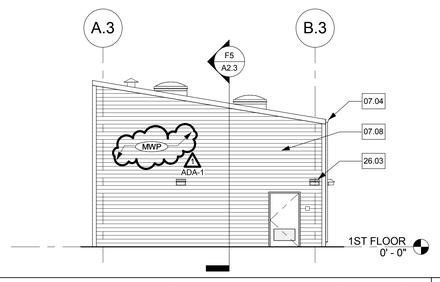
BUILDING SECTION F5

1/8" = 1'-0"



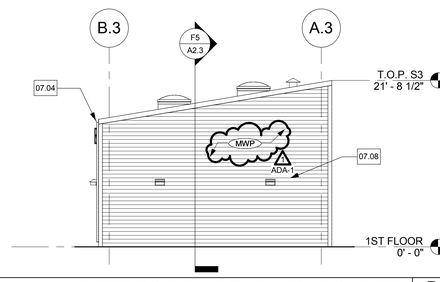
EXTERIOR ELEVATION BUILDING 3 - NORTH D5

1/8" = 1'-0"



EXTERIOR ELEVATION BUILDING 3 - WEST B7

1/8" = 1'-0"

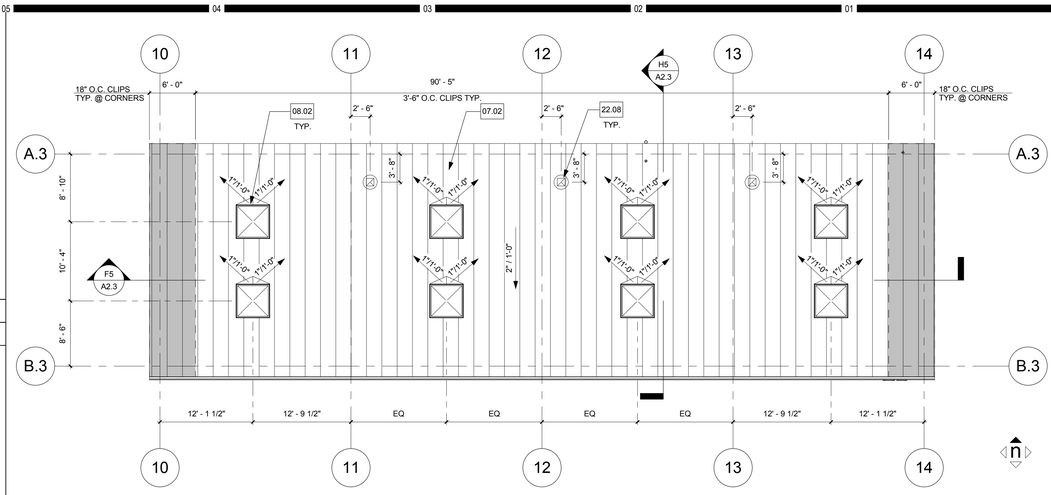


EXTERIOR ELEVATION BUILDING 3 - EAST B5

1/8" = 1'-0"

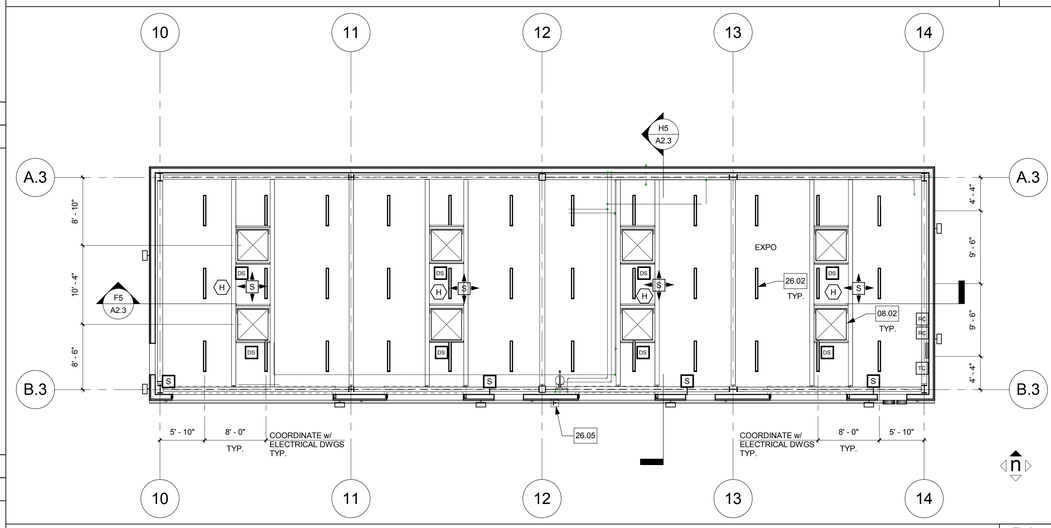
EXTERIOR ELEVATION BUILDING 3 - SOUTH A5

1/8" = 1'-0"



ROOF PLAN G1

1/8" = 1'-0"



CEILING PLAN D1

1/8" = 1'-0"

FLOOR PLAN A1

1/8" = 1'-0"

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KEYNOTES

NO.	NOTE - DETAIL
03.01	SLOPED FLOOR DEPRESSION
07.02	METAL ROOFING PANEL ASSEMBLY - 1/A10.31
07.04	GUTTER - 9/A10.31
07.06	DOWNSPOUT - 11/A10.11
07.07	SPLASHBLOCKS AT DOWNSPOUT LOCATIONS - 10/A10.11
07.08	METAL WALL PANELS - 1 & 2/A10.11
08.02	48" X 48" SKYLIGHT - 6&8/A10.31
09.01	FRP 5/A10.11, 3/A10.21, 11/A10.21
10.02	TACTILE ROOM IDENTIFICATION SIGN - 2/A10.81
10.03	TACTILE EXIT SIGN - 13/A10.81
10.04	EXTERIOR BUILDING SIGNAGE - 22/A10.31
11.01	EQUIPMENT - PER ANCHORAGE DTL. 23/A10.81
22.02	ACCESSIBLE COMBINATION EMERGENCY EYE WASH AND SHOWER
22.03	WATER HEATER
22.04	FLOOR DRAIN, SEE PLUMBING DWGS
22.05	DECONTAMINATION SHOWER/ EYEWASH
22.06	AIR COMPRESSOR ON CONC. PAD, SEE PLUMBING/ STRUCT. DWGS
22.08	ROOF EXHAUST FAN - 3/A10.31
26.02	INTERIOR LIGHT FIXTURES, SEE ELEC DWGS & 21/A10.81
26.03	EXTERIOR LIGHT FIXTURES/ F.A HORN DEVICE, SEE ELEC DWGS & 21/A10.31
26.05	ELECTRICAL/ F.A PANEL, F.A DEVICES SEE ELEC DWGS

FLOOR PLAN LEGEND

SYMBOL	DESCRIPTION	DETAIL
	METAL STUD WALL	
FE	SEMI-RECESSED FIRE EXTINGUISHER CABINET OPERABLE LATCH @48" A.F.F.	PER 12 / A10-81
	30" x 48" ACCESSIBLE CLEAR SPACE	

CEILING / ROOF PLAN LEGEND

SYMBOL	DESCRIPTION	
EXPO	NO CEILING - EXPOSED TO STRUCTURE ABOVE	
(INTERIOR) (EXTERIOR)	LIGHTING FIXTURES	SEE ELEC DWGS
DS	MOUNT DAYLIGHT SENSOR	SEE ELEC DWGS
S	SEPERATE SWITCHING FOR TASK LIGHTING	SEE ELEC DWGS
S	MOUNT SENSOR	SEE ELEC DWGS
TC	TIME CLOCK	SEE ELEC DWGS
RC	TO CONTROL ZONE 'a'	SEE ELEC DWGS
RCD	TO CONTROL ZONES 'b' and 'C' SEPARATELY	SEE ELEC DWGS
S	CEILING MOUNTED SMOKE DETECTOR	SEE ELEC DWGS
H	CEILING MOUNTED HEAT DETECTOR	SEE ELEC DWGS
	48" x 48" SKYLIGHT	
	ROOF EXHAUST FAN	SEE ELEC DWGS
	ELECTRICAL/ F.A. PANEL	SEE ELEC DWGS

NOTES

1. REFER TO SHEET G0.1 FOR TYPICAL SYMBOLS AND ABBREVIATIONS.
2. ALL DIMENSIONS ARE TO FOS OR CENTER LINE OF STEEL UNLESS NOTED OTHERWISE.
3. FOR FLOOR ELEVATIONS, REFER TO CIVIL DRAWINGS.
4. FOR FINISHES, REFER TO SCHEDULES, SHEET A4.1.
5. FOR WALL TYPES, REFER TO SHEET A10.11.
6. FOR DOOR CLEARANCE REQUIREMENTS, REFER TO DETAIL 1 / A10.81
7. REFER TO SHEET A4.1 FOR DOOR SCHEDULES AND FRAME TYPES.
8. PROVIDE 6" CONC CURB AT ALL PERIMETER WALLS, (EXCEPT AT DOOR OPENINGS). REFER TO STRUCTURAL DETAIL 1A/S1.5

FLOOR FINISH LEGEND

CONC1, REFER TO SPEC SECTION 09 06 00 SCHEDULE FOR FINISHES

Consultant Seal

Agency Approval FILE NO.37-C1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APPL. 04-115420
ACS_____ FLS_____ SSS_____
DATE _____

Project Title

PALOMAR COLLEGE
Learning for Success

PALOMAR COLLEGE
NEW STORAGE BUILDINGS
1140 W. MISSION RD.,
SAN MARCOS, CA 92069
(760) 744-1150

No.	Description	Date
1	ADDENDUM 1	1/16/2018

Drawing Title:
FABRICATION BUILDING 3 - PLANS, ELEVATIONS AND SECTIONS

Architect's Seal

LICENSED ARCHITECT
KENNETH SALTER
NO. C-19082
SIGN 11-30-18
STATE OF CALIFORNIA

Designed:	Designer	Project No.	3443001-302
Drawn:	Author	Scale:	As indicated
QAQC	Checker	Drawing No.	A2.3
Date:	10/18/17		

"AS REVISED"
1

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ROOM FINISH SCHEDULE STORAGE BLDG 2

NUMBER	NAME	FLOOR MATERIAL	BASE MATERIAL	BASE COLOR	WALLS NORTH MATERIAL	WALLS NORTH FINISH	WALLS EAST MATERIAL	WALLS EAST FINISH	WALLS SOUTH MATERIAL	WALLS SOUTH FINISH	WALLS WEST MATERIAL	WALLS WEST FINISH	CEILING MATERIAL	CEILING FINISH	REMARKS
201	STORAGE	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	
202	STORAGE	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	

STORAGE BLDG 2 - ROOM FINISH SCHEDULE — B5

DOOR SCHEDULE_STORAGE BLDG 2

DOOR NUMBER	DOOR SIZE WIDTH PANEL	DOOR SIZE WIDTH PANEL	DOOR SIZE HEIGHT	FIRE RATING	Door MATERIAL	Door FINISH	Door PANEL TYPE	Door UNDERCUT	FRAME MATERIAL	FRAME FINISH	FRAME FRAME TYPE	HARDWARE GROUP	PANIC	GLASS	DETAILS (SHEET A10.15 U.N.O.) HEAD	JAMB 1	JAMB 2	THRESH	SIGN DETAILS (SHEET A10.04)	COMMENTS	DOOR NUMBER
201A		3' - 9"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	552	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		201A
201B		12' - 4"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	201B
202A	4' - 0"	4' - 0"	7' - 0"	NR	HM	PT	06 : D	0' - 0"	HM	PT	A : D	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-	DOUBLE DOORS	202A

ADA-1 (HARDWARE GROUP 552)

ADA-1 (DOUBLE DOORS)

STORAGE BLDG 2 - DOOR SCHEDULE — G1

ROOM FINISH SCHEDULE FABRICATING BLDG 3

	NAME	FLOOR MATERIAL	BASE MATERIAL	BASE COLOR	WALLS NORTH MATERIAL	WALLS NORTH FINISH	WALLS EAST MATERIAL	WALLS EAST FINISH	WALLS SOUTH MATERIAL	WALLS SOUTH FINISH	WALLS WEST MATERIAL	WALLS WEST FINISH	CEILING MATERIAL	CEILING FINISH	REMARKS
301	FABRICATION	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	
302	FABRICATION	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	
303	FABRICATION	CONC	B	B1	PLY/FRP	PE/FRP	PLY	PE	PLY/FRP	PE/FRP	PLY	PE	-	PE	
304	FABRICATION	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	

FABRICATING BLDG 3 - ROOM FINISH SCHEDULE — E5

ROOM FINISH SCHEDULE STORAGE BLDG 1

ROOM NUMBER	NAME	FLOOR MATERIAL	BASE MATERIAL	BASE COLOR	WALLS NORTH MATERIAL	WALLS NORTH FINISH	WALLS EAST MATERIAL	WALLS EAST FINISH	WALLS SOUTH MATERIAL	WALLS SOUTH FINISH	WALLS WEST MATERIAL	WALLS WEST FINISH	CEILING MATERIAL	CEILING FINISH	REMARKS
101	STORAGE	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	
102	STORAGE	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	
103	STORAGE	CONC	B	B1	PLY	PE	PLY	PE	PLY	PE	PLY	PE	-	PE	

STORAGE BLDG 1 - ROOM FINISH SCHEDULE — E1

DOOR SCHEDULE FABRICATING BLDG 3

DOOR NUMBER	DOOR SIZE WIDTH # OF	DOOR SIZE WIDTH PANEL	DOOR SIZE HEIGHT	FIRE RATING	Door MATERIAL	Door FINISH	Door PANEL TYPE	Door UNDERCUT	FRAME MATERIAL	FRAME FINISH	FRAME FRAME TYPE	HARDWARE GROUP	PANIC	GLASS	DETAILS (SHEET A10.15 U.N.O.) HEAD	JAMB 1	JAMB 2	THRESH	SIGN DETAILS (SHEET A10.04)	COMMENTS	DOOR NUMBER
301A		3' - 9"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		301A
301B		21' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	301B
302A		3' - 6"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		302A
302B		10' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	302B
303A		3' - 6"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		303A
303B		10' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	303B
304A		3' - 6"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		304A
304B		10' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	304B

ADA-1 (CD)

ADA-1 (HARDWARE GROUP 452)

FABRICATING BLDG 3 - DOOR SCHEDULE — B5

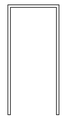
DOOR SCHEDULE STORAGE BLDG 1

DOOR NUMBER	DOOR SIZE WIDTH PANEL	DOOR SIZE WIDTH PANEL	DOOR SIZE HEIGHT	FIRE RATING	Door MATERIAL	Door FINISH	Door PANEL TYPE	Door UNDERCUT	FRAME MATERIAL	FRAME FINISH	FRAME FRAME TYPE	HARDWARE GROUP	PANIC	GLASS	DETAILS (SHEET A10.15 U.N.O.) HEAD	JAMB 1	JAMB 2	THRESH	SIGN DETAILS (SHEET A10.04)	COMMENTS	DOOR NUMBER
101A		3' - 9"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		101A
101B		21' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	101B
101C		10' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	101C
102A		3' - 6"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		102A
102B		10' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	102B
102C		3' - 6"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		102C
103A		3' - 6"	7' - 0"	NR	HM	PT	06 : S	0' - 0"	HM	PT	A : S	452	No	-	2/A10.21	3/A10.21	3/A10.21	1/A10.21	-		103A
103B		10' - 0"	12' - 0"	NR	HM	PT	CD	0' - 0"	HM	PT	-	960	No	-	7/A10.21	11/A10.21	11/A10.21	6/A10.21	-	OVERHEAD COILING DOORS	103B

ADA-1 (CD)

ADA-1 (HARDWARE GROUP 452)

STORAGE BLDG 1 - DOOR SCHEDULE — B1



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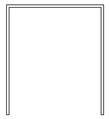

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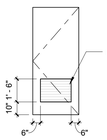

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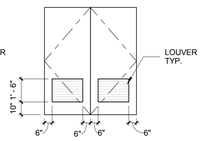

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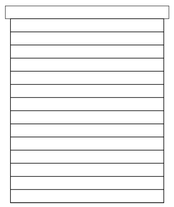

COILING DOOR (CD)

DOOR AND FRAME TYPES — A1

HMC Architects

3546 Concours Street / Ontario, CA 91764
T 909 989 9979 / www.hmcarchitects.com

SM

INTERIOR FINISH ABBREVIATIONS:

B	RUBBER BASE
CONC	CONCRETE
PE	PAINT - EGGSHELL
PM	PAINT - MATTE
PLY	PLYWOOD
FRP	FIBERGLASS REINFORCED PLASTIC

DOOR SCHEDULE ABBREVIATIONS:

AL	ALUMINUM
HM	HOLLOW METAL
LV	LOUVER
PT	PAINT
SS	STAINLESS STEEL

NOTES

1. DOOR LOUVER SIZE
   BUILDING 1 SHALL HAVE A MIN. OF 48 SQ IN. OF FREE LOUVER AREA.
   BUILDING 2 SHALL HAVE A MIN. 36 SQ IN. OF FREE LOUVER AREA.
   BUILDING 3 SHALL HAVE A MIN. OF 48 SQ IN. OF FREE LOUVER AREA.
2. COLORS PER SPEC 09 06 00 SCHEDULE FOR FINISHES

Consultant Seal

Agency Approval FILE NO.37-C1
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DATE _____

Project Title

PALOMAR COLLEGE®
Learning for Success

PALOMAR COLLEGE
NEW STORAGE BUILDINGS

1140 W. MISSION RD.,
SAN MARCOS, CA 92069
(760) 744-1150

No.	Description	Date
1	ADDENDUM 1	1/16/2018

Drawing Title:
BLDGS 1, 2 & 3 - SCHEDULES

Architect's Seal
LICENSED ARCHITECT KENNETH SALYER NO. C-19082 REN. 11-30-19 STATE OF CALIFORNIA

Designed:	DS	Project No.	3443001-302
Drawn:	VH,GS	Scale:	As indicated
QAQC	KS	Drawing No.	A4.1
Date:	10/18/17		

"AS REVISED"
1

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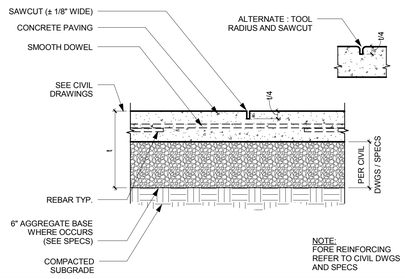
SM

NOT USED 25

NOT USED 20

CONCRETE CONTROL JOINT 15

1 1/2" = 1'-0"



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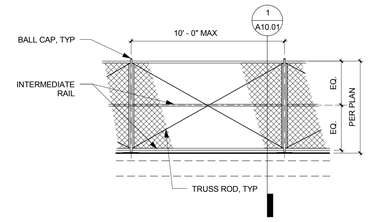
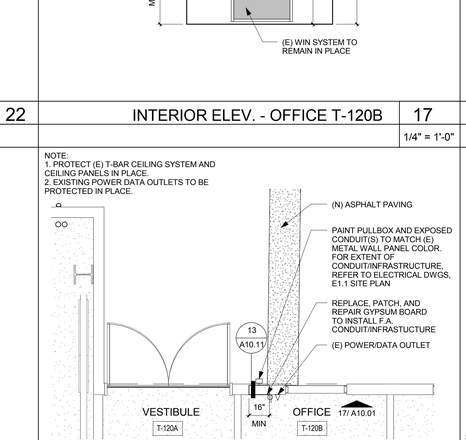
CHAIN LINK FENCE 5

1/4" = 1'-0"



05.200

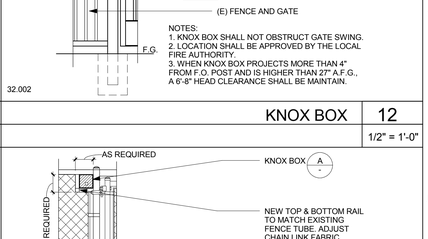
NOT USED 24



NOTE:
1. LOCATE AS DIRECTED BY ARCHITECT.
2. ALL WORDING TO BE APPROVED BY ARCHITECT BEFORE FABRICATION OR INSTALLATION.
3. SIGN AND FOOTINGS TO BE REMOVED AT COMPLETION OF WORK. RESTORE LANDSCAPING AND HARDSCAPE (WHERE OCCURS)

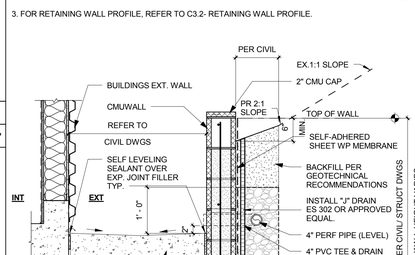
CONSTRUCTION JOINT 14

1 1/2" = 1'-0"



CHAIN LINK FENCE WEST ELEVATION - STORAGE BLDG 2 9

1/4" = 1'-0"



05.203

CHAIN LINK FENCE SOUTH ELEVATION - STORAGE BLDG 2 4

1/4" = 1'-0"

05.204

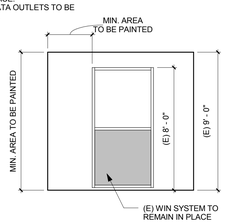
NOT USED 23

CONSTRUCTION SIGN 18

1/2" = 1'-0"

NOTE:
1. PROTECT (E) T-BAR CEILING SYSTEM AND CEILING PANELS IN PLACE.
2. EXISTING POWER DATA OUTLETS TO BE PROTECTED IN PLACE.

ADA-1



ASPHALT AT CONCRETE PAVING 13

1 1/2" = 1'-0"

32.001

CHAIN LINK FENCE ELEVATION - STORAGE BLDG 1 3

1/4" = 1'-0"

05.202

NOT USED 22

INTERIOR ELEV. - OFFICE T-120B 17

1/4" = 1'-0"

NOTE:
1. PROTECT (E) T-BAR CEILING SYSTEM AND CEILING PANELS IN PLACE.
2. EXISTING POWER DATA OUTLETS TO BE PROTECTED IN PLACE.

KNOX BOX 12

1/2" = 1'-0"

32.002

CONCRETE SITE WALL 6

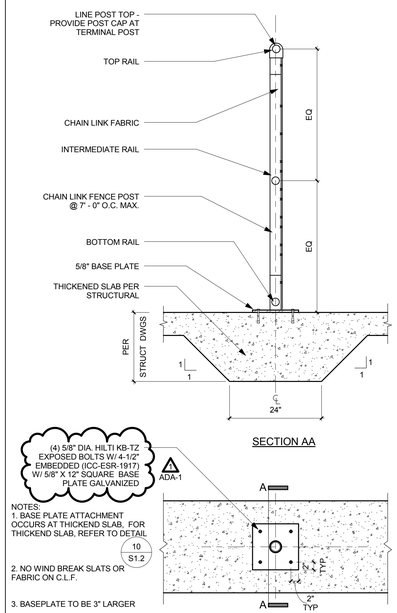
3/4" = 1'-0"

NOTES:
1. FOR MAX. CMU RETAINING WALL HEIGHTS, REFER TO STRUCT. DETAIL 1 S3.2 & CIVIL DETAIL 10 C1.1
2. APPLY WATER REPELLENT TO EXPOSED SURFACES.
3. FOR RETAINING WALL PROFILE, REFER TO C3.2- RETAINING WALL PROFILE.

32.053

CHAIN LINK FENCE AT THICKENED SLAB 1

3/4" = 1'-0"



NOTES:
1. BASE PLATE ATTACHMENT OCCURS AT THICKEND SLAB, FOR THICKEND SLAB, REFER TO DETAIL 10 S1.2
2. NO WIND BREAK SLATS OR FABRIC ON C.L.F.
3. BASEPLATE TO BE 3" LARGER

05.205

Consultant Seal

Agency Approval FILE NO.37-C1

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1140 W. MISSION RD.,
SAN MARCOS, CA 92069
(760) 744-1150

No.	Description	Date
1	ADDENDUM 1	1/16/2018

Drawing Title:
SITE & FENCE DETAILS

Architect's Seal
LICENSED ARCHITECT KENNETH R. SALTER REN. 11-30-18 NO. C-19082 STATE OF CALIFORNIA

Designed:	DS	Project No.	3443001-302
Drawn:	VH,GS	Scale:	As indicated
QAQC	KS	Drawing No.	A10.01
Date:	10/18/17		

"AS REVISED" 1

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