DSA **140**

APPLICATION FOR SUBMITTAL OF POST-APPROVAL DOCUMENT

This application is for submittal of documents, after the initial approval of the project (post-approval documents), that require Division of the State Architect (DSA) review and approval.This form shall be completed by the Design Professional in General Responsible Charge of the project, in accordance with California Code of Regulations, Title 24, Part 1, Sections 4-317, 4-323 and 4-338 and in compliance with DSA IR A-6: Construction Change Document Submittal and Approval Process.

DSA documents referenced within this form are available on the DSA Forms or DSA Publications webpages.

1. SUBMITTAL TYPE: (Is this a resubmittal? Yes ☐ No ☑)

Deferred Submittal ☐	Addendum Number: 1	Revision Number:	CCD Number: Category A ☐ or B ☐

2. PROJECT INFORMATION:

School District/Owner: Bakersfield City School District	DSA File Number: 15 6
Project Name/School: Martin Luther King Jr. Elementary School	DSA Application Number 03 122605

3. APPLICANT INFORMATION:

Date Submitted: 12/20/24	Attached Pages? No ☐ Yes ☑ Number of pages? 177		
Firm Name: Integrated Designs by SOMAM, Inc.	Contact Name: Sean Parker		
Work Email: sparker@somam.com	Work Phone: (559) 436-0881		
Firm Address: 6011 N. Fresno Street, Suite 130	City: Fresno	State: CA	Zip Code: 93710

4. REASON FOR SUBMITTAL: (Check applicable boxes)

☑ For revision or addendum prior to construction. ☐ For a project currently under construction.

☐ For a project that has a form *DSA 301-N: Notification of Requirement for Certification*, *DSA 301-P: Posted Notification of Requirement for Certification* or a 90-Day Letter issued.

☐ To obtain DSA approval of an existing uncertified building or buildings.

☐ For Category B CCD this is: ☐ a voluntary submittal, ☐ a DSA required submittal (attach DSA notice requiring submission).

5. DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE:

Name of the Design Professional In General Responsible Charge: Curtis E. Flynn

Professional License Number: C28966 Discipline: Architect

Design Professional in General Responsible Charge Statement: The attached post-approval documents have been examined by me for design intent and appear to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications. They are acceptable for incorporation into the construction of the project.

Signature: _____

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE

6. CONFIRMATION, DESCRIPTION AND LISTING OF DOCUMENTS:

For addenda, revisions, or CCDs: CHECK THIS BOX ☑ to confirm that *all* post-approval documents have been stamped and signed by the Responsible Design Professional listed on form *DSA 1: Application for Approval of Plans and Specifications* for this project. (For *Deferred Submittals*, refer to *IR A-18: Use of Construction Documents Prepared by Other Professionals,* and *IR A-19: Design Professional's Signature and Seal (Stamp) on Construction Documents*, when applicable, for signature and seal requirements.)

Provide a brief description of construction scope for this post-approval document (attach additional sheets if needed):

Final Coordination Items, Please see Project Manual

M3.11, E-1.0, E-3.1, E-4.0, E-5.0

List of DSA-approved drawings affected by this post-approval document:

C1.1, A0.01, A1.02, A2.10, A3.10, A3.11 A4.10, A5.10, A5.11, A6.10, A7.02, A7.03, S2.01, S3.01, S4.01, S6.01, S7.02, S7.03, S7.04, M0.01, M0.11, M2.11 M3.11, E-1.0, E-3.1, E-4.0, E-5.0

DSA USE ONLY

SSS_____ Date_____ ☐Approved ☐Disapproved ☐Not Required

Comments:_____

FLS_____ Date_____ ☐Approved ☐Disapproved ☐Not Required

Comments:_____

ACS_____ Date_____ ☐Approved ☐Disapproved ☐Not Required

Comments:_____

Returned	DSA STAMP
Date:	
By:	

ADDENDUM NO. 2

PROJECT MANUAL

MLK ELEMENTARY SCHOOL
WELLNESS CENTER
BAKERSFIELD CITY SCHOOL DISTRICT

Project No.: 5527
DSA File No. 15-6
DSA App No. 03-122605
December 19, 2024

This Addendum and Addendum drawings form a part of the Contract Documents. It modifies the original Project Manual and Drawings. Bidders are required to acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to acknowledge receipt of each addendum may subject bidder to disqualification.

GENERAL

2-01 **GEOTECH REPORT:** Add attached Geotech report in its entirety. See Exhibit 2-01

2-02 **BID FORM:** Replace Bid Form and Proposal document 004113 in its entirety. See Exhibit 2-02.

2-03 The contractor shall install owner furnished HVAC equipment per Exhibit 2-03.

2-04 District will provide Pelican Thermostat. Contractor to install. See Exhibit 2-04.

2-05 District will cut and cap existing irrigation lines as necessary for construction of new building.

PROJECT MANUAL

2-06 **PROJECT MANUAL, SPECIFICATION SECTION 000010 – TABLE OF CONTENTS:** Replace specification section 000010 in its entirety. See Exhibit 2-06

2-07 **PROJECT MANUAL, SPECIFICATION SECTION 102800 – TOILET ACCESSORIES:** Replace Part 2, section 1, sentence I to the following:

I. Specimen Pass-Through Cabinet PTC:

2-08 **PROJECT MANUAL, SPECIFICATION SECTION 271000 – STRUCTURED CABLING SYSTEM:** Add specification section 271000 in its entirety. See Exhibit 2-08.

DRAWINGS

CIVIL

2-09 **DRAWING, SHEET C1.1 – SEWER AND WATER PLAN:** Not the following changes (See C1.1 addendum 2 drawing):

1. Fire water line location has changed. See water note 6.
2. Storm drain lines were added at front columns. See storm drain note 2.
3. Add detail A/C1.1 post indicator valve assembly.
4. Add water construction notes 9, 10 and 11.

ARCHITECUTURAL

2-10 **DRAWING, SHEET A0.01 – SCHEDULES:** Note the following changes (See A0.01 Addendum 2 drawing):

1. Add plywood over GYP board in room 122. On the North, South and West walls.
2. Add plywood to the abbreviations.

2-11 **DRAWING, SHEET A1.02 – ENLARGED SITE PLAN:** Note the following changes (See A1.02 Addendum 2 drawing)

1. Locations for the fire water line has been modified.
2. Storm drain lines have been added on the West side of the building.
3. Keynote 27 has been added.
4. Planter symbol has been added to the legend.
5. Turf areas west of the new building have been replaced with planters. See keynote 27.

2-12 **DRAWING, SHEET A2.10 – FLOOR PLAN:** Note the following changes (See addendum 2 drawing):

1. Dimensions for pilasters and columns have been changed.
2. Electrical and low voltage panels in room 122 have been changed. See keynotes 30, 31, 32, 33 and 34 and Interior Elevations 3/A5.11
3. Delete cabinets from room 116.
4. Add cabinets to room 105. See keynote 1.
5. Add keynote 28 to room 103.
6. Add walk off carpet tiles to room 101. See keynote 10.
7. Add security keypad next to door 101B. See keynote 35.
8. Cabinets in room 112 have moved.
9. TVs have been deleted from room 121.
10. Window in room 117 has changed.
11. TVs have been added to rooms 101 and 105.

2-13 **DRAWINGS, SHEET A3.10 – EXTERIOR ELEVATIONS:** Note the following changes (See A3.10 addendum 2 drawing):

1. Window in elevation 4/A3.10 has changed.

2-14 **DRAWING, SHEET 3.11 – SECTIONS:** Note the following changes (See A3.11 Addendum 2 drawing)

1. Windows in section 4 have changed.

2-15 **DRAWING, SHEET A4.10 – ROOF PLAN:** Note the following changes (See A4.10 addendum 2 drawings):

1. Revise key note 12.
2. Add exhaust fan vent. See keynote 3.
3. Add roof walk mats. See keynote 9
4. Add hose bibb. See keynote 13.
5. Add roof vent penetrations. See keynote 16.
6. Add condensate pipe. See keynote 15.
7. Add details 1 and 2/A4.10.

2-16 **DRAWING, SHEET A5.10 – INTERIOR ELEVATIONS:** Note the following changes (See A5.10 addendum 2 drawings):

1. Elevation “B” lobby 101:
   i. Add TV. See keynote 34.
2. Elevation “C” lobby 101:
   i. Add TV. See keynote 34.
3. Elevation “C” unisex toilet 104:
   i. Add pass through cabinet. See keynote 33.
4. Exam rooms 106, 108, 112 and 107, 109, 110:
   i. Remove base cabinets. Provide countertop with drawers.
5. Medical assistant office 105:
   i. Add elevation “B” for added cabinets.
   ii. Modify elevation “A” to add TV.
6. Delete elevations office room 116.

2-17 **DRAWING, SHEET A5.11 – INTERIOR ELEVATIONS:** Note the following changes (see A5.11 addendum 2 drawing):

1. Delete TVs from training room 121.
2. Electrical server room 122.
   i. Add elevations B and C
   ii. Modify elevation A.
3. Elevation “B” therapy room 124
   i. Add TV. See keynote 7.

2-18 **DRAWING, SHEET A6.10 – REFLECTED CEILING PLAN:** Note the following changes (See A6.10 addendum 2 drawing):

1. Add ceiling access door to room 111.

2-19 **DRAWING, SHEET 7.02 – EXTERIOR DETAILS:** Note the following changes (See A7.02 addendum 2 drawing):

1. Replace roof drain details 2/A7.02 and 3/A7.02.
2. Add pipe penetration detail 6/A7.02

2-20 **DRAWING, SHEET A7.03 – EXTERIOR DETAILS:** Note the following changes (See A7.03 addendum 2 drawing):

1. Details 9, 10, 11 and 12 have new dimensions and show correct locations of the steel columns.

STRUCTURAL

2-21 **DRAWING, SHEET S2.01 – FOUNDATION PLAN:** Note the following changes (See S2.01 addendum 2 drawing):

1. Dimensions for columns and pilasters have been changed.

2-22 **DRAWING, SHEET S3.01 – CEILING FRAMING PLAN:** Note the following changes (See S3.01 addendum 2 drawing):

1. Add attic access door framing in janitor's room.

2-23 **DRAWING, SHEET S4.01 – ROOF FRAMING PLAN:** Note the following changes (See S4.01 addendum 2 drawing):

1. Dimensions for columns and pilaster have been changed.
2. Location of mechanical units has changed.

2-24 **DRAWING, SHEET S6.01 – FOUNDATION DETAILS:** Note the following changes (See S6.01 addendum 2 drawings):

1. Details 6, 7 and 8 the column pocket depth has bene changed to 6".
2. Detail 5 concrete ledge has been added for the block veneer.

2-25 **DRAWING, SHEET S7.02 – FRAMING DETAILS:** Note the following changes (See S7.02 addendum 2 drawing):

1. Detail 2/S7.02 has been added.
2. Detail 1/S7.02 has been modified

2-26 **DRAWING, SHEET S7.03 – FRAMING DETAILS:** Note the following changes (See detail S7.03 addendum 2 drawings):

1. Detail 2, 3 and 5/S7.03 have been modified.
2. Detail 4/S7.03 has been deleted.

2-27 **DRAWING, SHEET S7.04 – FRAMING DETAILS:** Note the following changes (See S7.04 on addendum 2 drawings):

1. Delete detail 2/S7.04
2. Add details 5 and 6/S7.04
3. Modify detail 1/S7.04

MECHANICAL

2-28 **DRAWING, SHEET M0.01 – GENERAL NOTES-LEGEND:** Note the following changes (See M0.01 addendum 2 drawing):

1. Add OFCI "Owner Furnished Contractor Installed" to schedules

2-29 **DRAWING, SHEET M0.11 – DETAILS:** Note the following changes (See M0.11 addendum 2 drawing):

1. Add detail 8 and 14/M0.11 in their entirety.

2-30 **DRAWING, SHEET M2.11 – HVAC PLAN:** Note the following changes (See M2.11 Addendum 2 drawing):

1. Change location of wireless repeater in room 122. See keynote 7.
2. Exhaust fans have been modified. See keynote 2.
3. Keynotes 1, 2, 4, 5, 6 and 7 have been modified.
4. Legend have been added.

2-31 **DRAWING, SHEET M3.11 – PLUMBING PLAN:** Note the following changes (See M3.11 addendum 2 drawing):

1. Condensate lines have been modified. See keynote 17.
2. Keynotes 2 and 17 have been modified.
3. Legend has been added.

ELECTRICAL

2-32 **DRAWING, SHEET E-1.0 – GENERAL NOTES, SYMBOLS AND DETAILS:** Note the following changes (See E1.0 addendum 2 drawing):

1. Data outlet symbol added.

2-33 **DRAWING, SHEET E-3.0 – ENLARGED ELCTRICAL SITE PLAN:** Note the following changes (See E3.0 addendum 2 drawing):

1. Light fixture schedule has been updated.
2. TVs added to panel schedule “LWC1”.

2-34 **DRAWING, SHEET E-4.0 – ELECTRICAL FLOOR PLAN:** Note the following changes (See E4.0 addendum 2 drawing):

1. Add electrical notes.
2. Add panels to electrical room and enlarged electrical room plan.
3. Update power and data outlets.
4. Add WAP and PA speakers.
5. Add exterior PA speakers.

2-35 **DRAWING, SHEET E-5.0 – LIGHTING AND FIRE ALARM PLANS:** Note the following changes (See E5.0 addendum 2 drawing):

1. Update light switch in room 114 and 111.

END ADDENDUM NO. 2

GEOTECHNICAL ENGINEERING &
GEOLOGIC HAZARDS INVESTIGATION
PROPOSED WELLNESS CENTER AND PARENT CENTER
MLK ELEMENTARY SCHOOL
1100 CITADEL STREET
BAKERSFIELD, KERN COUNTY, CALIFORNIA

PROJECT NO. 022-22124
OCTOBER 14, 2022

Prepared for:

MR. ROBERT VAN TASSEL
BAKERSFIELD CITY SCHOOL DISTRICT
1501 FELIZ DRIVE
BAKERSFIELD, CALIFORNIA 93307

Prepared by:

KRAZAN & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING DIVISION
2205 COY AVENUE
BAKERSFIELD, CALIFORNIA 93307
(661) 837-9200

EXHIBIT 2-01

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

October 14, 2022

KA Project No. 022-22124

Mr. Robert Van Tassel
Bakersfield City School District
1501 Feliz Drive
Bakersfield, California 93307

RE: Geotechnical Engineering & Geologic Hazards Investigation
Proposed Wellness Center and Parent Center
MLK Elementary School
1100 Citadel Street
Bakersfield, Kern County, California

Dear Mr. Van Tassel:

In accordance with your request, we have completed a Geotechnical Engineering and Geologic Hazards Investigation for the above-referenced site. The results of our investigation are presented in the attached report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (661) 837-9200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

REGISTERED PROFESSIONAL ENGINEER
DAVID R. JAROSZ II
2698
GEOTECHNICAL
STATE OF CALIFORNIA

David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

DRJ:ht

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October 14, 2022 KA Project No. 022-22124

GEOTECHNICAL ENGINEERING & GEOLOGIC HAZARDS INVESTIGATION
PROPOSED WELLNESS CENTER AND PARENT CENTER
MLK ELEMENTARY SCHOOL
1100 CITADEL STREET
BAKERSFIELD, KERN COUNTY, CALIFORNIA

INTRODUCTION

This report presents the results of our Geotechnical Engineering and Geologic Hazards Investigation for the proposed MLK Elementary School Wellness Center and Parent Center to be located at 1100 Citadel Street in Bakersfield, Kern County, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, Engineered Fill, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior flatwork, retaining walls and pavement design.

A site plan showing the approximate boring locations is presented following the text of this report. A description of the field investigation, boring logs, and the boring log legend are presented in Appendix A. Appendix A contains a description of the laboratory testing phase of this study, along with the laboratory test results. Appendices B and C contain guides to earthwork and pavement specifications. When conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE

This investigation was conducted to evaluate the soil and groundwater conditions at the site, to make geotechnical engineering recommendations for use in design of specific construction elements, and to provide criteria for site preparation and Engineered Fill construction.

Our scope of services was outlined in our proposal dated August 10, 2022 (KA Proposal No. P543-22) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- A review of available data for evaluation of subsurface conditions at the project site.
- Aerial photograph interpretation.
- A search of geologic and seismologic literature pertaining to the area of the site.

- Evaluation of potential geologic hazards.
- A field investigation consisting of drilling 4 borings to depths ranging from approximately 10 to 50 feet for evaluation of the subsurface conditions at the project site.
- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.
- Evaluation of the data obtained from the investigation and an engineering analysis to provide recommendations for use in the project design and preparation of construction specifications.
- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway. Some of the final details pertaining to the structures are unavailable. It is understood the project will include the addition of 2 new buildings: a 3,600 sq ft Wellness Center and a 960 sq ft Parent Center. On-site concrete flatwork areas and landscaping are associated with the development. The proposed development may also include paved access drives and parking areas.

It is anticipated the structures will utilize conventional shallow foundations and concrete slab-on-grade. Footing loads are anticipated to be light to moderate.

In the event, these structural or grading details are inconsistent with the final design criteria, the Soils Engineer should be notified so that we may update this writing as applicable.

SITE LOCATION, SITE HISTORY AND SITE DESCRIPTION

The proposed additions to the new school campus are located within the southern portion of the San Joaquin Valley, within the eastern portion of the City of Bakersfield, in Kern County, California (see Vicinity Map, Figure 1). The school campus is irregular in shape and encompasses approximately 33 acres of developed and vacant land in a developed area. The site is located about 600 feet south of Belle Terrace, at Citadel Street. The proposed elementary school campus is bound to the east by Cottonwood Road, a park, and several rural residential developments; to the south by East Branch Kern Island Canal and residential development; to the west by vacant land; and to the north by park/playground areas and drainage basins. The proposed elementary school campus is located at longitude 118.98978° West and latitude 35.34415° North. The US Geological Survey, Lamont, California 7.5-minute Quadrangle, dated 1992, indicates that surface elevations in the vicinity of the site are on the order of 390 to 395 feet above mean sea level. A significant watercourse identified as the Kern River is located approximately 3.7 miles northwest of the subject site. The East Branch Kern Island Canal trends along the southwest edge of the site. The Central Branch Kern Island Canal is located about 1.1 miles northwest of the site.

Site history was obtained by reviewing aerial photographs taken in 1937, 1942, 1952, 1956, 1968, 1973, 1975, 1981, 1984, 1992, 2003, 2006, 2010, 2012 and 2022. Review of the 1937 aerial photograph indicates that the proposed elementary school property consisted of agricultural land. No structures appeared to be located on the site. A tree-lined area appears to outline the location of a ditch that was observed within the north-central portion of the site still present during Krazan's August 2022 site reconnaissance. In addition, a canal trends northwest-southeast along the southwestern boundary of the site.

Review of the 1942 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1937 aerial photograph.

Review of the 1952 aerial photograph indicates that the project site conditions appeared to be relatively similar to that noted in the 1942 aerial photograph, except the on-site ditch is more evident due to the apparent removal of trees. The ditch appears to have previously trended northeasterly from the adjacent canal. The current observation during the August 2022 site reconnaissance observed the ditch to be present within the north-central portion of the site.

Review of the 1956, 1968, 1973 and 1975 aerial photographs indicate that the project site conditions appeared to be relatively similar to that noted in the 1952 aerial photograph.

Review of the 1981 aerial photograph indicates that the site may or may not be in agricultural use, but remains vacant with no structures. The southwest-northeast trending portion of the ditch had been removed and soil appears to have been worked in the area of the existing portion of the ditch.

Review of the 1984 and 1992 aerial photographs indicate that the project site conditions appeared to be relatively similar to that noted in the 1981 aerial photograph.

Review of the 2003 aerial photograph indicates that the project site predominately consisted of vacant land crisscrossed with unimproved roads or foot trails. The remaining site conditions appeared to be relatively similar to that noted in the previous aerial photographs.

Review of the 2006, 2010 and 2012 aerial photographs indicate that the project site conditions appeared to be relatively similar to that noted in the 2003 aerial photograph.

The conditions shown on the aerial photographs dating 1937 to 2022 (Scale: 1"= 500') indicate the site was predominately utilized as agricultural land until the 1980s. Since the early 1980s the site predominately consisted of vacant land. Presently, the site consists of a school with associated classroom buildings, play courts, playfields and parking lots. Portions of the site are covered by a sparse to moderate weed or grass growth and the surface soils have a loose consistency. A canal is located along the southwest edge of the site. Buried utility lines are located throughout the site. Several trees are located along the edges of the site and throughout portions of the site. Wood and chain-link fencing trend along the edges of the site. With the exception of the canal berms, the site is relatively level with no major changes in grade.

No evidence of surface faulting was observed on the property during our reconnaissance. No evidence of slope failures or instabilities was observed on the subject property or adjoining properties.

GEOLOGIC SETTING

General

The subject property is located along the eastern margin of the southern San Joaquin Valley portion of the Great Valley Geomorphic Province of California. The San Joaquin Valley is bordered to the north by the Sacramento Valley portion of the Great Valley, to the east by the Sierra Nevada, to the west by the Coast Ranges, and to the south by the Transverse Ranges. The San Joaquin sedimentary basin is separated from the Sacramento basin to the north by the buried Stockton arch and associated Stockton Fault. The buried Bakersfield arch near the south end of the valley separates the relatively small Maricopa-Tejon subbasin at the south end of the San Joaquin basin from the remainder of the basin. The 450-mile long Great Valley is an asymmetric structural trough that has been filled with a prism of Mesozoic and Cenozoic sediments up to 5 miles thick.

The Sierra Nevada, located east of the San Joaquin Valley, is gently southwesterly tilted fault block comprised of igneous and metamorphic rocks of pre-Tertiary age that comprise the basement beneath the San Joaquin Valley. The Coast Ranges, located west of the San Joaquin Valley, are comprised of folded and faulted sedimentary and metasedimentary rocks of Mesozoic and Cenozoic age.

The Kern River is the principal rivers in the area. Alluvial fans formed by this river are the predominant geomorphic features in the Bakersfield area. The area of the subject site is characterized by low alluvial fans and plains, which constitute a belt of coalescing alluvial fans of low relief between the dissected uplands, adjacent to the Sierra Nevada and the valley trough. This has resulted in a rather flat topography in the vicinity of the project site. The site is comprised of alluvial deposits which are mostly sands and silts.

A Regional Geologic Map, Regional Geologic Cross-Section, and Local Geologic Map are presented on Figures 4, 5, and 6, respectively.

Lithology

The thick accumulation of deposits within the San Joaquin Valley range in age from Jurassic to Holocene and include both marine and continental rocks and deposits. The 1964 Geologic Map of California, Bakersfield Sheet, indicates that the near-surface deposits in area of the subject site are identified as Quaternary Fan Deposits.

The 2011 Geologic Map of the Quaternary Surficial Deposits in Southern California, the Tehachapi 30' x 60' Quadrangle (Solomon McCrea and Shannon Utley, 2011) further defines the near-surface deposits in the area of the subject site as Quaternary Fan Deposits and Quaternary Old Alluvial Fan Deposits consisting of unconsolidated boulders, cobbles, gravel, sand and silt recently deposited where a river or stream issues from a confined valley or canyon; sediment typically deposited in a fan-shaped cone; gravelly sediment generally more dominant than sandy settlement.

The subsurface information obtained in this study indicates that the surface and near-surface soil deposits at the subject site generally consist of sandy silts, silty sands, and sands with some gravel. These observed deposits are consistent with those mapped in the area, and are further described in the Soil Profile and Subsurface Conditions section of this report.

Structure and Faults

The general area of the subject site is underlain by a homoclinal series of Cenozoic deposits dipping 4 degrees to 6 degrees to the southwest toward the center of the San Joaquin Valley. The contact between the Cenozoic and basement rocks dips nearly 8 degrees southwest, or at a slightly greater inclination than does the on-lapping homoclinal Cenozoic sequence. A slightly elevated basement structure, the Bakersfield Arch is located in the vicinity of the site. This structure is considered to have controlled sedimentation within the far southern portion of the valley.

The south end of the San Joaquin Valley is bordered on the west, south, and east by three major fault systems: the San Andreas, Garlock, and Breckenridge-Kern Canyon faults, respectively. All three of these faults zone appear to be directly related to the uplifting of the mountain ranges in which they are located and the downwarping of the intermediate land mass which constitutes the San Joaquin Valley portion of the Great Valley Geosyncline. The forces which have resulted in the formation of these major fault zones and the continuing movements along them have had great influence locally in the valley floor in the form of folding and faulting of the thick section of sedimentary beds and the underlying basement complex. Deformation of the sedimentary rocks in the area has not been restricted to faulting. Localized folding had also occurred within the geosyncline forming entrapments for oil and gas accumulations.

Adjacent to the San Joaquin Valley, the Sierra Nevada and Coast Ranges are geologically young mountain ranges that possess active and potentially active fault zones. Major active faults and fault zones occur at some distance to the east, west, and south of the project site. The Sierra Nevada and Owens Valley Fault Zones bound the eastern edge of the Sierra Nevada block approximately 68 and 73 miles east of the site, respectively. Numerous active faults are present within the San Joaquin Valley, San Emigdio Mountains, and Tehachapi Mountains south of the site including the White Wolf, Pleito Thrust, Garlock, and Big Pine Faults. These faults are located approximately 16, 24, 34, and 36 miles from the site, respectively.

The White Wolf Fault (responsible for a 1952 earthquake that caused extensive damage in the Bakersfield area) is located in the tectonically active Tehachapi Mountains as the southerly terminus of the valley, approximately 16 miles southeast of the subject site.

Numerous active faults are present within the central Coast Ranges west of the site including the San Andreas Fault located approximately 35 miles west of the subject site. The fault is considered active and is of primary concern in evaluating seismic hazards throughout western Kern County. The 684-mile-long San Andreas Fault Zone is the principal element of the San Andreas Fault system, a network of faults with predominately dextral strike-slip displacement that collectively accommodates the majority of relative north-south motion between the North America and Pacific plates. The San Andreas Fault

zone is the most extensively studied fault in California, and perhaps the world. The San Andreas Fault Zone is considered to be the Holocene and historically active dextral strike-slip fault that extends along most of coastal California from its complex junction with the Mendocino Fault zone on the north, southwest to the northern Transverse Range and inland to the Salton Sea, where a well defined zone of seismicity transfers the slip to the Imperial fault along a right-releasing step.

Two major surface-rupturing earthquakes have occurred on the San Andreas Fault in historic time: the 1857 Forth Tejon and 1906 San Francisco earthquakes. Additional historic surface rupturing earthquakes include the unnamed 1812 earthquake along the Mojave section and the northern part of the San Bernardino Mountains section, and a large earthquake in the San Francisco Bay area that occurred in 1838 that was probably on the Peninsula section. Historic fault creep rates are as high as 32 millimeters per year for the 82-mile-long creeping section in central California with creep rates gradually tapering to zero at the northwestern and southeastern ends of the section.

One of the nearest seismotectonic sources is the Great Valley Fault Zone (Coast Ranges-Central Valley boundary zone), located approximately 70 miles west of the site. The Great Valley Fault zone is the geomorphic boundary of the Coast Ranges and the Central Valley and is underlain by a 300-mile long seismically active fold and thrust belt that has been the source of recent earthquakes, such as the 1983 magnitude 6.5 Coalinga and the 1985 magnitude 6.1 Kettleman Hills earthquakes. Nearly the entire thrust system is concealed or "blind". The basal detachment of this thrust system dips at a shallow angle to the west. East-directed thrusting over ramps in the detachment and west-directed thrusting on backthrusts are responsible for the uplift along the eastern range front of the Coast Ranges. Based on earthquake focal mechanisms, movement on the thrust zone is generally perpendicular to the strike of the geomorphic boundary and trend of the San Andreas Fault system. Shortening along the geomorphic boundary is driven by a component of the Pacific-North American Plate motion that is normal to the plate boundary. The Great Valley Fault Zone is considered a dominant seismic feature with potential for affecting the subject site.

Tensional forces resulting in normal faults are reported to be related to crustal stress relief in the southeast portion of the San Joaquin Valley. Numerous relatively short, normal faults traverse this region. Creep activity is the prominent mode of slip on those faults in this region that are active. These movements have continued on an intermittent basis from the early Miocene to Recent time. This faulting is directly related to and controls the accumulation of oil in several oil fields within the easterly portion of the valley. Most authors agree that current creep movements can be ascribed to subsidence promoted by extensive withdrawal of petroleum, and in some cases, groundwater. Those faults considered to be active in the southern valley are the Kern Front, Premier, New Hope and Pond Faults located approximately 7.4, 10, 14 and 16 miles north of the subject site, respectively.

The Kern Front, Premier and New Hope Faults, are actively creeping westerly-dipping normal faults in oil-producing areas. The Buena Vista Fault, also located within a nearby oil producing area, is indicated to be a north-dipping thrust fault. Recent aseismic movement along these pre-existing faults is considered to be related to oil field fluid withdrawal. In addition, numerous unnamed faults are mapped within the oil fields in the vicinity of the site. The majority of the mapped faults associated with the oil fields, do not extend through the Kern River Formation to the surface and have been mapped based on

extensive subsurface exploration associated with the oil industry. The Pond Fault is a relatively minor, actively creeping west-dipping to vertical normal fault which is considered to be due to differential subsidence caused by groundwater withdrawal.

The Sierra Nevada and Owens Valley Fault Zones bound the eastern edge of the Sierra Nevada block more than 58 and 81 miles east of the site, respectively.

The northwest trending Clovis Fault and two unnamed related faults are believed to be located approximately 48 to 100 miles north to northeast of the City of Bakersfield, extending from an area just south of the San Joaquin River to a few miles south of Fancher Creek and from just south of the City of Dinuba to just south of the City of Porterville. These faults are considered pre-quaternary faults with no recognized Quaternary displacement. These faults are not necessarily inactive.

As noted above, several dominant faults with seisomgenic structures are located in the vicinity of the subject site. Table I is a listing of active faults or seismogenic structures within 60 miles of the site, and a Fault Map is provided on Figure 7.

GEOLOGIC HAZARDS

Fault Rupture Hazard Zones in California

The Alquist-Priolo Geologic Hazards Zones Act went into effect in March, 1973. Since that time, the act has been amended 10 times (Hart, 1994). The purpose of the Act, as provided in DMG Special Publication 42 (SP 42), is to prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." The act was renamed the Alquist-Priolo Earthquake Fault Zoning Act in 1994, and at that time, the originally designated "Special Studies Zones" was renamed the "Earthquake Fault Zones."

The subject site does not lie on a Fault Rupture Hazard Zones Map, and accordingly, the site is not within a Fault-Rupture Hazard Zone. The nearest zoned fault is a portion of the Kern Front Fault located more than 7 miles northwest of the subject site.

Seismic Hazard Zones in California

In 1990, the California State Legislature passed the Seismic Hazard Mapping Act to protect public safety from the effects of strong shaking, liquefaction, landslides, or other ground failure, and other hazards caused by earthquakes. The Act requires that the State Geologist delineate various seismic hazards zones on Seismic Hazards Zones Maps. Specifically, the maps identify areas where soil liquefaction and earthquake-induced landslides are most likely to occur. A site-specific geotechnical evaluation is required prior to permitting most urban developments within the mapped zones. The Act also requires sellers of real property within the zones to disclose this fact to potential buyers. The area of the subject site is not included on any of the state maps released to date. However, the site is located on the Seismic Hazard Atlas, Lamont Quadrangle, effective date November 1975. The site is noted to be located within an area of younger sediments (Pleistocene and younger), with no fault or landslide features within the site or vicinity.

Historic Seismicity/Earthquake Epicenter Distribution

The Bakersfield area has historically experienced a low to moderate degree of seismicity. A listing of historic earthquakes with magnitudes greater than 4.0 within approximately 50 miles (80 kilometers) of the subject site was obtained from the comprehensive California Geological Survey computerized earthquake catalog for the State of California, the Townley and Allen (1939) catalog and the U.S. Geological Survey Earthquake Data Base System. In addition, a listing was obtained for all historic earthquakes with magnitudes greater than 5.0 within approximately 100 miles of the site. The listings include the date, time, location, depth, magnitude, and intensity all recorded events within the search radius between 1800 and 2021. A review of the literature for pre-1900 earthquakes (Toppozada, 1991) does not reveal any significant recorded seismic events in the vicinity of the subject site prior to the period covered by the above listing.

The historic earthquake listings are included in Appendix D. A plot of epicenters associated with historic earthquakes in the region of the site with magnitudes greater than 5 is shown on Figure 8, Epicenter Map. The earthquake data indicates that 320 events with magnitudes greater than 4.0 occurred within 50 miles of the subject site between 1800 and 2021. None of the listed events occurred within 5 miles of the site. The data indicates that 151 events exceeded magnitudes 5.0 within 100 miles of the subject site. The nearest listed event occurred approximately 1.1 miles southwest of the site in 1870 with a magnitude of 4.3. Forty of the listed earthquakes with magnitudes greater than 5.0 occurred within 50 miles of the site. Numerous earthquakes are listed with magnitudes between 5.0 and 6.0 beyond about 60 miles of the site. Eight events were recorded with magnitudes greater than 6.0 within 50 miles of the site. The largest magnitude found in the search radius was 7.9 occurring January 9, 1857.

The geologic literature indicates that groundshaking of VIII intensity (Modified Mercalli Scale) was felt in Bakersfield from the 1857 Fort Tejon Earthquake and the 1952 Arvin-Tehachapi Earthquake. These are the largest known earthquake events to have affected the Bakersfield area. The most recent earthquake significant to the site area was the seismic event which occurred on July 21, 1952. A significant number of the listed historic earthquakes occurred in 1952 and are considered related to the Arvin-Tehachapi earthquake of July 21, 1952. This magnitude 7.7 event affected all of Kern County as well as parts of Los Angeles and Santa Barbara Countries. The earthquake took place near Wheeler Ridge on the White Wolf Fault, located approximately 24 miles southeasterly of the subject site. Vertical displacements of as much as three feet occurred at the fault line. Destruction in the communities of Arvin and Tehachapi was extensive; the quake caused numerous landslides and damaged highways, bridges, and railroads. Damage to Bakersfield from the main shock was slight, however, on July 29 and August 5, 1952, aftershocks generated just east of Bakersfield produced a great deal of damage to older buildings. Estimated average value of the maximum bedrock accelerations from the 1952 events are about 0.14 gravity (g) at the subject site.

Geologic Subgrade

Information obtained from the geologic literature, as well as data from the above-described site exploration, indicate the general soil profile at the site consists predominately of medium dense to very dense silty sands, sandy silts, and relatively clean sands underlain at a shallow depth by very dense decomposed granite and granitic rock. Assuming that any loose surface soil and fill material on the site are removed and recompacted as recommended in our Geotechnical Engineering Investigation, the geologic subgrade of the site can be conservatively approximated as "stiff soil". A Joyner-Boore Class C subgrade classification is considered appropriate for the soil profile and corresponds with a National Earthquake Hazard Reduction Program (NEHRP) (BSSC, 1994) Site Class D. The site class definition from the 2019 California Building Code that is most consistent with the site conditions is Site Class D.

Soil Liquefaction

Soil liquefaction is a state of soil particles suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs in soils such as sand in which the strength is purely friction. However, liquefaction has occurred in soils other than clean sand. Liquefaction usually occurs under vibratory conditions such as those induced by seismic event.

To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Groundwater depth;

2) Soil type;

3) Relative density;

4) Initial confining pressure;

5) Intensity and duration of groundshaking.

The soils encountered within a depth of 50 feet on the project site predominately consist of loose to very dense sandy silts, silty sands, and sands. Groundwater was not encountered within the soil borings advanced during subsurface exploration. Available groundwater data indicates that groundwater depth has been as shallow as 22 feet within the project site vicinity.

The potential for soil liquefaction during a seismic event was evaluated using the LIQUEFYPRO computer program (version 5.8h) developed by CivilTech Software. For the analysis, a maximum earthquake magnitude of 7.91 was used. A peak horizontal ground surface acceleration of 0.491g was considered conservative and appropriate for the liquefaction analysis. A groundwater depth of 22 feet was used for the analysis. The analysis indicates that soils above a depth of 22 feet are non-liquefiable due to the absence of groundwater. The soils below a depth of 22 feet are considered to be non-liquefiable to slightly liquefiable with factors of safety ranging from 0.68 to 5.0. The analysis indicates that the total and differential seismic induced settlement is not anticipated to exceed 2 inches and 1¼ inch, respectively. The project's Structural Engineer should consider the anticipated seismic settlements in the project design.

Due to the relatively low levels of expected groundshaking at the site, the density of the native soil deposits, and the recommendation that all loose fill within proposed building areas be excavated and recompacted, liquefaction is not considered a significant geologic hazard at the subject site.

Seismic Settlement

One of the most common phenomena during seismic shaking accompanying any earthquake is the induced settlement of loose unconsolidated soils. Based on the nature of the subsurface materials, the plan to excavate and recompact the upper soils and any loose fill soils within the proposed building areas and the relatively low to moderate seismicity of the region, we would not expect seismic settlement to represent a significant geologic hazard to the site, provided that the recommendations of our referenced Geotechnical Engineering Investigation are followed.

One of the most common phenomena during seismic shaking accompanying any earthquake is the induced settlement of loose unconsolidated soils. Based on the nature of the subsurface materials and the relatively low to moderate seismicity of the region, we would not expect seismic settlement or lateral spread to represent a significant geologic hazard to the site.

The estimated seismic settlement was determined at the site using the settlement analysis method by Tokimatsu, Seed, and Bolton (1987). The results of the settlement analysis are included as follows:

Location	Seismic Settlement (inches)				
	Saturated Settlement	Unsaturated Settlement	Total Settlement	Range of Differential Settlement	Design for Differential Settlement
B1	0.64	1.33	1.97	0.98 to 1.30	1¼ Inch in 100 Feet

The above settlement values were determined at specific boring locations. The consolidated settlement (under static load of specific structures) and differential settlement (per specified length in building area) are indicated in the Foundations section of this report.

The native soils within the project site are not conducive to hydrocollapse due to the relatively medium dense soil conditions, low void-ratio, and moderate to high penetration resistance measured. Any loose fill material at the site could be vulnerable to hydrocollapse. However, the proposed structure is planned to be supported on engineered fill. Therefore, the structures will not be vulnerable to hydrocollapse. In addition, this hazard can be mitigated by following the design and construction recommendations of current and future Geotechnical Engineering Investigations (over-excavation and rework of any loose soils and/or uncertified fill materials).

Two drainage basins are located about 230 feet north of the school campus within a park area. The basins may be up to 8 feet deep with sidewall slopes approximately 26 degrees. A canal is located along the southwest edge of the school campus. The canal is up to 8 feet deep with side slopes up to 26 degrees. The structures planned for development will be located greater than 50 feet away from the

basin and canal. The potential for lateral spreading was evaluated using the "Revised Multilinear Regression Equations for Prediction of Lateral Spread Displacement" by Youd, Hansen, Corbett and Bartlett (2002). Based on a lack of shallow liquefiable soils within the subject site, the distance of proposed structures from the basins and a lack of saturated cohesionless sediments with $(N1)_{60}$ less than 15, the site is not likely subject to lateral spreading hazards.

Subsidence Due to Fluid Withdrawal

Portions of the San Joaquin Valley have been subject to land subsidence due to fluid withdrawal (groundwater and petroleum). The Bakersfield area has been subject to significant subsidence hazards in the past. The Arvin-Maricopa area, which includes the Bakersfield area, is one of three principal areas of widespread subsidence in the San Joaquin Valley. As of 1970, 700 square miles of irrigable land, roughly 60 percent of the area, had subsided due to the intensive pumping of groundwater. Maximum subsidence exceeded 9 feet, and the total volume of subsidence (1926 – 1970) was about 1 million acre-feet. Subsidence results from the compaction of water-yielding deposits as inter-granular stresses are increased by water level declines. Also, scattered local areas are affected by the hydrocompaction of moisture-deficient surficial deposits and by subsidence due to the extraction of oil field fluids.

The use of groundwater in the Arvin-Maricopa area greatly increased during the late forties and fifties. This increase resulted in the accelerated decline of water levels and accompanying land subsidence in the central part of the area. Significantly, this was a period of below normal precipitation and severely deficient groundwater recharge. From 1947 to 1966 above normal runoff occurred in only 3 years, and a runoff deficiency of 2,500,000 acre-feet accumulated for the Kern River. With the return of normal precipitation and the importation of surface water from the Friant-Kern Canal and the California Aqueduct, the groundwater supply changed from one of shortage to one of excess. The groundwater levels of the late sixties could possibly be the lowest of all time – past and future.

As in other subsidence areas of the San Joaquin Valley, subsidence will continue in the Arvin-Maricopa area as long as declining water levels continue to cause increased effective stresses and will stop as soon as excess pore pressures in the aquitards are dissipated. Beginning in the mid-sixties, significant quantities of canal water were imported into the Arvin-Maricopa area; this water had the dual effect of increasing recharge to the groundwater reservoir and reducing groundwater pumpage.

Since the early 1970's land subsidence has continued in some locations, but has generally slowed due to reductions in groundwater pumpage and the accompanying recovery of groundwater levels made possible by supplemental use of surface water for irrigation. The surface water is diverted principally from the Sacramento-San Joaquin Delta and the San Joaquin, Kings, Kern, and Feather Rivers. Several droughts since 1975 have caused surface water deliveries in the valley to be sharply curtailed, and demonstrated the valley's vulnerability to continued land subsidence when groundwater pumpage is increased.

The history of land subsidence in the San Joaquin Valley is integrally linked to the development of agriculture and the availability of water for irrigation. Further agricultural development without accompanying subsidence is dependent on the continued availability of surface water, which is subject to

uncertainties due to climatic variability and pending regulatory decisions. Due to the current regulatory water use and storage requirements, subsidence is not anticipated to be a significant hazard in the project site area.

Land subsidence caused by the hydrocompaction of moisture deficient surficial deposits commonly identified as collapsible soils is common within the Kern County area. This type of subsidence is common in regions where rainfall, irrigation water, or other moisture has not penetrated the upper soils for an extended period of time. Areas where a hydrocompaction concern exist are typically defined during the Geotechnical Engineering Investigation phase of the development and corrective measures for dealing with these potentially collapsible soils are included as part of the site preparation section of this report.

Land subsidence caused by the extraction of oil field fluids is monitored by the State of California, Division of Oil, Gas, and Geothermal Resources. The State regulates oil and gas withdrawal and re-pressurizing of the fields. This type of subsidence is not significant enough to be of serious concern.

Expansive Soils

The surface and near-surface soils observed on the site surface consist of sandy silts, silty sands, and relatively clean sands. These materials are considered to have a low expansion potential.

Inundation Hazards

A review of Federal Emergency Management Agency (FEMA) Flood Insurance Mapping for the area of the subject site (Community Panel Number 06029C2325E, dated September 26, 2008, indicates that the subject site is within "Zone "X" - Areas determined to be outside the 0.2 percent annual chance flood."

A review of the Office of Emergency Services and Corps of Engineers Dam Inundation Mapping for the area of the subject site indicates that the subject site is outside the "Inundation Area" should a failure occur at the Isabella Lake Dam, located 36 miles east.

Tsunamis and Seiches

A tsunami is a series of ocean waves generated in the ocean by an impulsive disturbance. Due to the inland location of the subject site, tsunamis are not considered a threat to the site. Seiches are standing waves in a body of water such as a lake or reservoir. Because such a body of water is not located near the site, seiches are not anticipated to affect the subject site.

Slope Stability and Potential for Slope Failure

Due to the generally flat-lying nature of the site and surrounding areas, problems from landslides are not anticipated to affect this site.

Volcanic Hazards

The subject site is not within an area known to be affected by volcanic hazards (Miller, 1989, USGS Bulletin, 1847).

County Seismic Safety Element

Documentation and mapping included in the Health and Safety Element of the Kern County General Plan, dated March 2007, and the Seismic Safety Element of the Metropolitan Bakersfield General Plan, dated December 2002, and General Plan Update EIR dated June 2002, were reviewed. The seismic information contained within the Safety and Land Use Elements is somewhat dated and or generalized and is superseded by more recent information and analyses described herein. The referenced documents generally indicate that the site area is subject to relatively low to moderate seismicity and related hazards.

FIELD AND LABORATORY INVESTIGATIONS

A previous Geotechnical Engineering Investigation was performed at this site by Krazan & Associates, Inc. in November 2017 (KA Project No. 022-17101). An additional subsurface soil investigation consisting of exploratory drilling was performed at the site as part of this report. Subsurface soil conditions were recently explored by drilling 4 borings to depths ranging from approximately 10 to 50 feet below existing site grade, using a truck-mounted drill rig. The approximate boring locations are shown on the site geologic map, Figure No. 2. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsoils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. Site geologic cross sections based on the exploratory drilling data are provided on Figure No. 3.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory testing program was formulated with emphasis on the evaluation of natural moisture, density, gradation, shear strength, consolidation potential, and moisture density relationships of the materials encountered. In addition, chemical tests were performed to evaluate the soil-cement reactivity. Details of the laboratory test program and results of the laboratory tests are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. In general, the surface soils consisted of 6 to 12 inches of very loose silty sand. These soils are disturbed, have low strength characteristics, and are highly compressible when saturated.

Below the loose surface soils, approximately 2 to 3 feet of loose to medium dense silty sand or silty sand/sandy silt was encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 9 to 36 blows per foot. Dry densities ranged from 93 to 131 pcf. Representative soil samples consolidated approximately 2 percent under a 2 ksf load when saturated. Representative soil samples had angles of internal friction of 29 to 40 degrees.

Below 3 to 4 feet, layers of predominately loose to very dense silty sand, silty sand/sand, sand, silty sand/sandy silt or sandy silt were encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 8 blows per foot to greater than 50 blows per 6 inches. Dry densities ranged from 97 to 122 pcf. A representative soil sample consolidated approximately 1½ percent under a 2 ksf load when saturated. These soils had similar strength characteristics as the upper soils and extended to the termination depth of our borings.

For additional information about the soils encountered, please refer to the boring logs in Appendix A.

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. Free groundwater was not encountered within the depths explored (50 feet). Review of the Department of Water Resources groundwater level readings from November 1941 to March 2022 indicates that historic high groundwater within the project site and vicinity range from 22 to 196 feet below site grade. Groundwater information was obtained from 7 groundwater wells located within 1.4 miles of the subject site (Well Nos.: 29S28E31J001M, 29S28E32L001M, 30S28E03D001M, 30S28E06C001M, 30S28E07B001M, 30S28E09B001M, and 30S28E09E001M).

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use and climatic conditions, as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

Administrative Summary

In brief, the subject site and soil conditions with the exception of the loose surface soils and existing development, appear to be conducive to the development of the project. The surface soils have a loose consistency. These soils are disturbed, have low strength characteristics, and are highly compressible when saturated. Accordingly, it is recommended that the surface soils be recompacted. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation.

Fill material was not encountered in our borings. However, fill may be present between and beyond our boring locations. The extent of fill material was determined based on limited test borings and visual observation. Verification of the extent of fill should be determined during site grading. It is recommended that fill soils which have not been properly compacted and certified be excavated and stockpiled so that the native soils can be prepared properly. It is anticipated the fill material will be suitable for reuse as Engineered Fill, provided it is cleansed of excessive organics and debris.

Presently, portions of the site are surrounded by existing developments. Associated with these developments are buried structures, such as utility lines and irrigation lines, that trend throughout the site. Demolition activities should include removal of any buried structures. Any buried structures encountered during construction should be properly removed and the resulting excavations backfilled. It is suspected that demolition activities of the existing structures will disturb the upper soils. After demolition activities, it is recommended that the disturbed soils be removed and/or recompacted. This compaction effort should stabilize the upper soils and located any unsuitable or pliant areas not found during our field investigation. The resulting excavations should be backfilled with Engineered Fill.

A canal trends along the southwestern edge of the site. If the canal will be backfilled, all deleterious materials and loose soils should be removed from the canal and the resulting excavation should be cleaned to firm native soil, and backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

In order to reduce the potential for differential settlement and provide uniform support for the planned structures, it is recommended that following stripping, fill removal operations, and demolition activities, the upper 24 inches of exposed subgrade within the proposed building areas be excavated, worked until uniform and free from large clods, moisture-conditioned to near optimum moisture content, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. In addition, it is recommended that proposed structural elements be supported by a minimum of 12 inches of Engineered Fill. Over-excavation should extend to a minimum of 5 feet beyond proposed footing lines. The excavation should be backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Prior to fill placement, Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional removal will be required.

Several trees and shrubs are located throughout the site. If not utilized for the proposed development, tree and shrub removal operations should include roots greater than 1 inch in diameter. The resulting excavations should be backfilled with Engineered Fill.

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy soils.

Relatively clean sands were encountered at various locations throughout the site. The possibility exists that site grading operations could expose these soils in areas of proposed buildings, pavements, and/or retaining walls. The Contractor should note that these soils lack the cohesion necessary to stand

vertically, even in shallow excavations such as footing trenches. If these conditions are encountered, it will be necessary to over-excavate the affected area(s) to a minimum of 2 feet below the proposed bearing surface. These areas may be backfilled using a mix of the silty sand and sand soils that contains at least 20 percent fines and meeting the requirements for Engineered Fill. This material may be obtained from elsewhere at the site, imported to the site from an approved off-site source, or manufactured through blending of the excavated clean sand with other suitable material containing a higher percentage of fines to result in material meeting the requirements for Engineered Fill.

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structure footings may be design utilizing an allowable bearing pressure of 2,500 psf for dead-plus-live loads. Footings should have a minimum embedment of 18 inches.

Groundwater Influence on Structures/Construction

Based on our findings and historical records, it is not anticipated that groundwater will rise within the zone of structural influence or affect the construction of foundations and pavements for the project. However, if earthwork is performed during our soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

Site Preparation

General site clearing should include removal of asphaltic concrete; concrete; vegetation and existing utilities; and structures; including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for reuse as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Fill material was not encountered in our borings. However, fill may be present between and beyond our boring locations. The extent of fill material was determined based on limited test borings and visual observation. Verification of the extent of fill should be determined during site grading. It is recommended that fill soils which have not been properly compacted and certified be excavated and stockpiled so that the native soils can be prepared properly. It is anticipated the fill material will be suitable for reuse as Engineered Fill, provided it is cleansed of excessive organics and debris.

Structures are located within portions of the site. Any surface or buried structures, including utilities and loosely backfilled excavations, encountered during construction should be properly removed and/or relocated. The resulting excavations should be cleaned to firm native ground and backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Excavations, depressions, or soft and pliant areas extending below planned finish

subgrade level should be cleaned to firm undisturbed soil, and backfilled with Engineered Fill. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Concrete footings should be removed to an equivalent depth of at least 3 feet below proposed footing elevations or as recommended by the Soils Engineer. Any other buried structures should be removed in accordance with the recommendations of the Soils Engineer. The resulting excavations should be backfilled with Engineered Fill.

A canal trends along the southwestern edge of the site. If the canal will be backfilled, all deleterious materials and loose soils should be removed from the canal and the resulting excavation should be cleaned to firm native soil, and backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Several trees and shrubs are located throughout the project site. If not utilized for the proposed development, tree and shrub removal operations should include roots greater than 1 inch in diameter. The resulting excavation should be cleansed to firm ground and backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

In order to reduce the potential for differential settlement and provide uniform support for the planned structures, it is recommended that following stripping, fill removal operations, and demolition activities, the upper 24 inches of the exposed subgrade within the proposed building areas be excavated, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. In addition, it is recommended that proposed structural elements be supported by a minimum of 12 inches of Engineered Fill. Over-excavation should extend to a minimum of 5 feet beyond proposed footing lines. The excavation should be backfilled with Engineered Fill compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Prior to backfilling, the exposed subgrade should be proof-rolled and observed by Krazan & Associates, Inc. to verify stability. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation. Soft or pliant areas encountered should be excavated to firm native ground.

Following stripping, tree and shrub removal, fill removal operations, and demolition activities, the exposed subgrade in exterior flatwork and pavement areas should be excavated to a depth of at least 12 inches, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of recompaction should extend 2 feet beyond the edge of pavements or sidewalks. Prior to backfilling, the exposed subgrade should be proof-rolled and observed by Krazan & Associates, Inc. to verify stability. This compaction effort should stabilize the surface soils and locate any unsuitable or pliant areas not found during our field investigation. Soft or pliant areas encountered should be excavated to firm native ground.

It is recommended that any uncertified fill material encountered within pavement areas be removed and/or recompacted. The fill material should be moisture-conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the Owner may elect not to recompact the existing fill within paved areas. However, the

Owner should be aware that the paved areas may settle which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned as necessary and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

The upper soils, during wet winter months, become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction and stability of the material. The Soils Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section and the Engineered Fill section.

Supplemental Site Preparation - Geogrid Option

Subsurface soils within the site are prone to seismic settlement under high groundshaking acceleration during an earthquake. If the potential differential settlement is not acceptable, the proposed structures can be constructed over a geogrid reinforced soil mat. If this option is utilized, the building area should be excavated to a minimum depth of 3 feet below the bottom of the deepest foundation and the resulting excavation should be backfilled with a layered system of Engineered Fill and geogrid reinforcement. The depth of the over-excavation should be measured from existing ground or rough pad grade, whichever is deeper.

The first layer of geogrid reinforcement will be placed directly at the bottom of the excavation. The geogrid material should be overlapped a minimum of 3 feet in all directions. The geogrid strips should be "shingled" such that the exposed geogrid edge is opposite the direction of fill placement (as roof shingles to rain runoff). The interlock between the geogrid and Engineered Fill will provide load transfer. No vehicles may traverse the geogrid prior to placement of the Engineered Fill cover.

The next layer of geogrid should be placed on top of the compacted Engineered Fill. This and subsequent layers need only be overlapped a minimum of 1 foot on all sides. The geogrid strips of this layer, and all subsequent layers within the footprint, should be placed with lengths perpendicular to those in the layer immediately below. The fill soils excavated from the area beneath the structure may be moisture-conditioned and recompacted between geogrid layers as reinforced fill. The reinforced fill should be conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM D1557 Test Method.

A total of 3 geogrid layers, including the layer at the base of the excavation, should be installed at vertical increments of 1 foot. The geogrid layers should extend to a minimum of 5 feet beyond the exterior footing perimeter of the structure. The geogrid reinforcement fabric should consist of Tensar® BX6200 Geogrid, TriAx TX-5 or equivalent. Any unstable soils within building areas should be excavated and backfilled with Engineered Fill as requested by the Soil Engineer.

It is recommended that each building site be excavated at once, and soils be stockpiled. The geogrid and excavated soil may then be placed and recompacted as recommended herein. Alternatively, the Contractor may elect to excavate the site in two stages, where excavated soil can be stockpiled over one-half of the site while the other half is mitigated. However, if the Contractor elects the option of two stages over the preferred option of using one stage, a minimum of 5 feet of geogrid from the first half should overlap the second half. Furthermore, the overlapping geogrid should be protected from damages, which may be caused by operating equipment. It is further recommended that flexible utility connections be used for the project.

Engineered Fill

The organic-free, on-site, upper native and fill soils are predominately silty sand, silty sand/sandy silt, sandy silt, and silty sand/sand. Preliminary testing indicates the on-site soils will be suitable for reuse as Engineered Fill, provided they are cleansed of excessive organics and debris.

The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor since he has complete control of the project site at that time.

Imported Fill material should be predominately non-expansive granular material with a plasticity index less than 10 and a UBC Expansion Index less than 15. Imported Fill should be free from rocks and clods greater than 4 inches in diameter. All Imported Fill material should be submitted to the Soils Engineer for approval at least 48 hours prior to delivery at the site.

Fill soils should be placed in lifts approximately 6 inches thick, moisture-conditioned to near optimum moisture content, and compacted to achieve at least 90 percent maximum density based on ASTM Test Method D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

Drainage and Landscaping

The ground surface should slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the 2019 California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of 5 percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations should be sloped a minimum of 2 percent. Impervious surfaces, such as pavement and

exterior concrete flatwork, within 10 feet of building foundations should be sloped a minimum of 1 percent away from the structure. Drainage gradients should be maintained to carry all surface water to collection facilities and off-site. These grades should be maintained for the life of the project.

Utility Trench Backfill

Utility trenches should be excavated according to accepted engineering practices following OSHA (Occupational Safety and Health Administration) standards by a Contractor experienced in such work. The responsibility for the safety of open trenches should be borne by the Contractor. Traffic and vibration adjacent to trench walls should be reduced; cyclic wetting and drying of excavation side slopes should be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced; especially during or following periods of precipitation.

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy soils.

Utility trench backfill placed in or adjacent to buildings and exterior slabs should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Utility trench backfill placed in pavement areas should be compacted to at least 90 percent of the maximum density based on ASTM Test Method D1557. Pipe bedding should be in accordance with pipe manufacturer's recommendations.

The Contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The Contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

Foundations

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed structure may be supported on a shallow foundation system bearing on a minimum of 12 inches of Engineered Fill. Spread and continuous footings supported by a minimum of 12 inches of Engineered Fill can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,875 psf
Dead-Plus-Live Load	2,500 psf
Total Load, including wind or seismic loads	3,325 psf

The footings should have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings should have a minimum width of 12 inches, regardless of load. Ultimate design of foundations and reinforcement should be performed by the project Structural Engineer.

The total static settlement is not expected to exceed ¾ inch. Differential static settlement should be less than ⅜ inch. Most of the settlement is expected to occur during construction as the loads are applied. However, additional post-construction settlement may occur if the foundation soils are flooded or saturated. The total seismic-induced settlement is not expected to exceed 2 inches. Differential settlement caused by a seismic event should be less than 1¼ inches. If the structure is supported on geogrid reinforced Engineered Fill, the differential settlement associated with a seismic event should be less than ¾ inch. The anticipated differential settlement associated with a seismic event is estimated over a horizontal distance of 100 feet.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.4 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an equivalent fluid passive pressure of 350 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A ⅓ increase in the above value may be used for short duration, wind, or seismic loads.

Foundations - Drilled Caissons

The proposed structures can be supported on caissons using an allowable sidewall adhesion of 400 psf. This value is for dead-plus-live loads. This value may be increased ⅓ for short duration loads, such as wind or seismic. Uplift loads can be resisted by caissons using an allowable sidewall adhesion of 275 psf of the surface area and the weight of the pier. The upper 2 feet should be neglected from friction calculations. The caissons should have a minimum embedment depth of 8 feet. The total settlement of the light pole is not expected to exceed 1 inch. Differential settlement should be less than ½ inch. Most of the settlement is expected to occur during construction as the loads are applied.

Sandy soil conditions were encountered at the site. Due to the sandy soil conditions, casing of the caissons may be required.

Lateral Loading Criteria - Caissons

Lateral resistance of the poles may be calculated utilizing the CBC flagpole formula per Section 1807.3.2.1 for nonconstrained poles or Section 1807.3.2.2 constrained poles. In using the flagpole formula, the allowable lateral bearing capacity may be calculated using an allowable equivalent fluid pressure of 175 pounds per cubic foot, with an allowable deflection of ¼ inch at the ground surface. This value may be increased up to 350 pcf, based upon the assumption that the isolated poles are not adversely affected by a ½ inch motion at the ground surface. Furthermore, an additional ⅓ increase is allowed for short-term transient lateral loads such as wind or seismic. The upper 2 feet should be neglected from lateral resistance calculations.

Excavation Stability

Temporary excavations planned for the construction of the building and other associated structures may be excavated, according to the accepted engineering practices following Occupational Safety and Health Administration (OSHA) standards by a Contractor experienced in such work. Open, unbraced excavations in undisturbed soils should be made according to the table below.

Recommended Excavation Slopes	
Depth of Excavation (ft)	**Slope (Horizontal:Vertical)**
	Temporary
0-5	1:1
5-10	1½:1
10-15	1¾:1
15+	2:1

If, due to space limitations, excavation near existing structures or roads is performed in a vertical position, braced shorings or shields may be used for supporting vertical excavations. Therefore, in order to comply with the local and state safety regulations, a properly designed and installed shoring system would be required to accomplish planned excavation and installation. A specialty Shoring Contractor should be responsible for the design and installation of such a shoring system during construction. The lateral pressures provided below may be used in the design of a braced-type shoring system.

Recommended Lateral Earth Pressure for Braced Shoring	
Depth of Excavation Below Ground Surface (feet)	**Lateral Soil Pressure (psf)**
0	30 H
0.25 H	30 H
H	30 H
Where H is the total depth of the excavation in feet.	

The foregoing does not include excess hydrostatic pressure or surcharge loading. Fifty percent of any surcharge load, such as construction equipment weight, should be added to the lateral load given above.

Since the Contractor has the ultimate responsibility for excavation stability, he may design a different shoring system for the excavation.

The excavation/shoring recommendations provided herein are based on soil characteristics derived from limited test borings within the site. Variations in soil conditions will likely be encountered during the excavations. Krazan & Associates, Inc. should be afforded the opportunity to provide field review to evaluate the actual conditions and account for field condition variations not otherwise anticipated in the preparation of this recommendation.

Floor Slabs and Exterior Flatwork

Concrete slab-on-grade floors that will include moisture-sensitive floor coverings should be underlain by a water vapor retarder. The water vapor retarder should be installed in accordance with accepted engineering practice. The water vapor retarder should consist of a vapor retarder sheeting underlain by a minimum of 3 inches of compacted, clean, gravel of ¾-inch maximum size. To aide in concrete curing an optional 2 to 4 inches of granular fill may be placed on top of the vapor retarder. The granular fill should consist of damp clean sand with at least 10 to 30 percent of the sand passing the 100 sieve. The sand should be free of clay, silt, or organic material. Rock dust which is manufactured sand from rock crushing operations is typically suitable for the granular fill. This granular fill material should be compacted.

The exterior floors should be poured separately in order to act independently of the walls and foundation system. All fills required to bring the building pads to grade should be Engineered Fills.

Moisture within the structure may be derived from water vapors, which were transformed from the moisture within the soils. This moisture vapor can travel through the vapor membrane and penetrate the slab-on-grade. This moisture vapor penetration can affect floor coverings and produce mold and mildew in the structure. To reduce moisture vapor intrusion, it is recommended that a vapor retarder be installed. It is recommended that the utility trenches within the structure be compacted, as specified in our report, to reduce the transmission of moisture through the utility trench backfill. Special attention to the immediate drainage and irrigation around the building is recommended. Positive drainage should be established away from the structure and should be maintained throughout the life of the structure. Ponding of water should not be allowed adjacent to the structure. Over-irrigation within landscaped areas adjacent to the structure should not be performed. In addition, ventilation of the structure (i.e. ventilation fans) is recommended to reduce the accumulation of interior moisture.

Lateral Earth Pressures and Retaining Walls

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 32 pounds per square foot per foot of depth. Walls that are incapable of this deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 52 pounds per square foot per foot per depth. Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations, or roadways.

During grading and backfilling operations adjacent to any walls, heavy equipment should not be allowed to operate within a lateral distance of 5 feet from the wall or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand operated equipment ("whackers," vibratory plates, or pneumatic compactors) should be used to compact the backfill soils.

Seismic Parameters – 2019 California Building Code

The Site Class per Section 1613A of the 2019 California Building Code (2019 CBC) and ASCE 7-16, Chapter 20 is based upon the site soil conditions. It is our opinion that a Site Class D is most consistent with the subject site soil conditions. For seismic design of the structures based on the seismic provisions of the 2019 CBC, we recommend the following parameters:

Seismic Item	Value	CBC Reference
Site Class	D	Section 1613A.2.2
Site Coefficient F_a	1.118	Table 1613A.2.3 (1)
S_s	0.956	Section 1613A.2.1
S_{MS}	1.068	Section 1613A.2.3
S_{DS}	0.712	Section 1613A.2.4
Site Coefficient F_v	1.955	Table 1613A.2.3 (2)
S_1	0.345	Section 1613A.2.1
S_{M1}	0.674	Section 1613A.2.3
S_{D1}	0.450	Section 1613A.2.4
T_S	0.632	Section 1613A.2

* Based on Equivalent Lateral Force (ELF) Design Procedure being used.

Soil Cement Reactivity

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete (or stucco) and the soil. HUD/FHA and UBC have developed criteria for evaluation of sulfate levels and how they relate to cement reactivity with soil and/or water.

Soil samples were obtained from the site and tested in accordance with State of California Materials Manual Test Designation 417. The sulfate concentrations detected from these soil samples were less than 150 ppm and are below the maximum allowable values established by HUD/FHA and UBC. However, it is recommended that a Type II cement be used within the concrete to compensate for sulfate reactivity with the cement.

Pipe Corrosion

Below grade, metal piping should be protected against corrosion in accordance with the pipe manufacturer recommendations. In addition, below grade metal systems should be electrically isolated from the building and reinforcing steel in the CMU walls and/or foundation to prevent development of the galvanic cells and premature corrosion of the below grade metal systems.

Compacted Material Acceptance

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The Soils Engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with an in-situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

Testing and Inspection

A representative of Krazan & Associates, Inc., should be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc. will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

LIMITATIONS

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

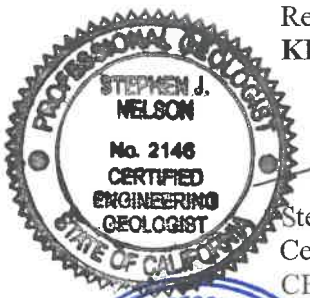
The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Engineering and Geologic Hazards Investigation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (661) 837-9200.

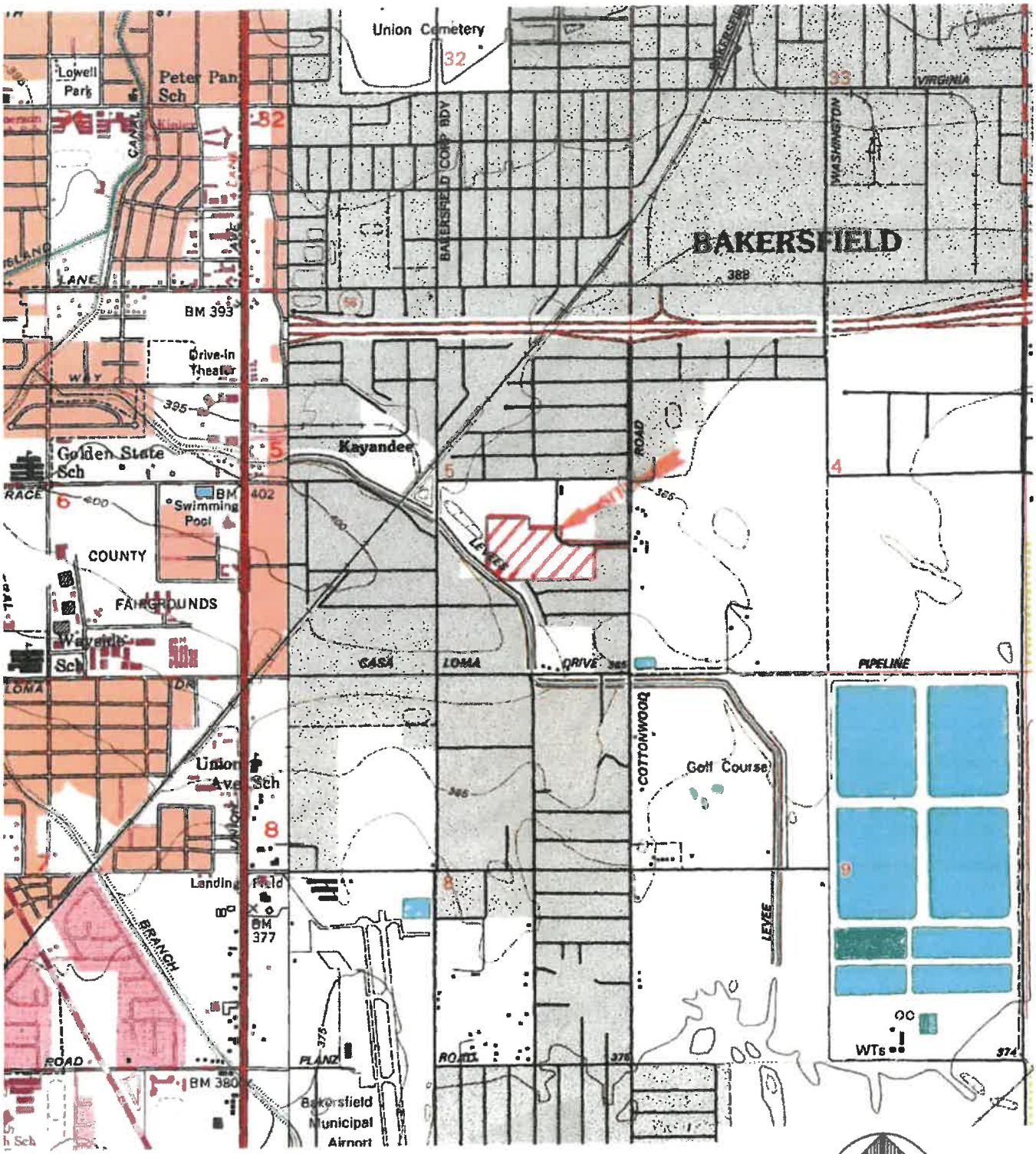
Respectfully submitted,
KRAZAN & ASSOCIATES, INC.



Stephen J. Nelson
Certified Engineering Geologist
CEG No. 2146

David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

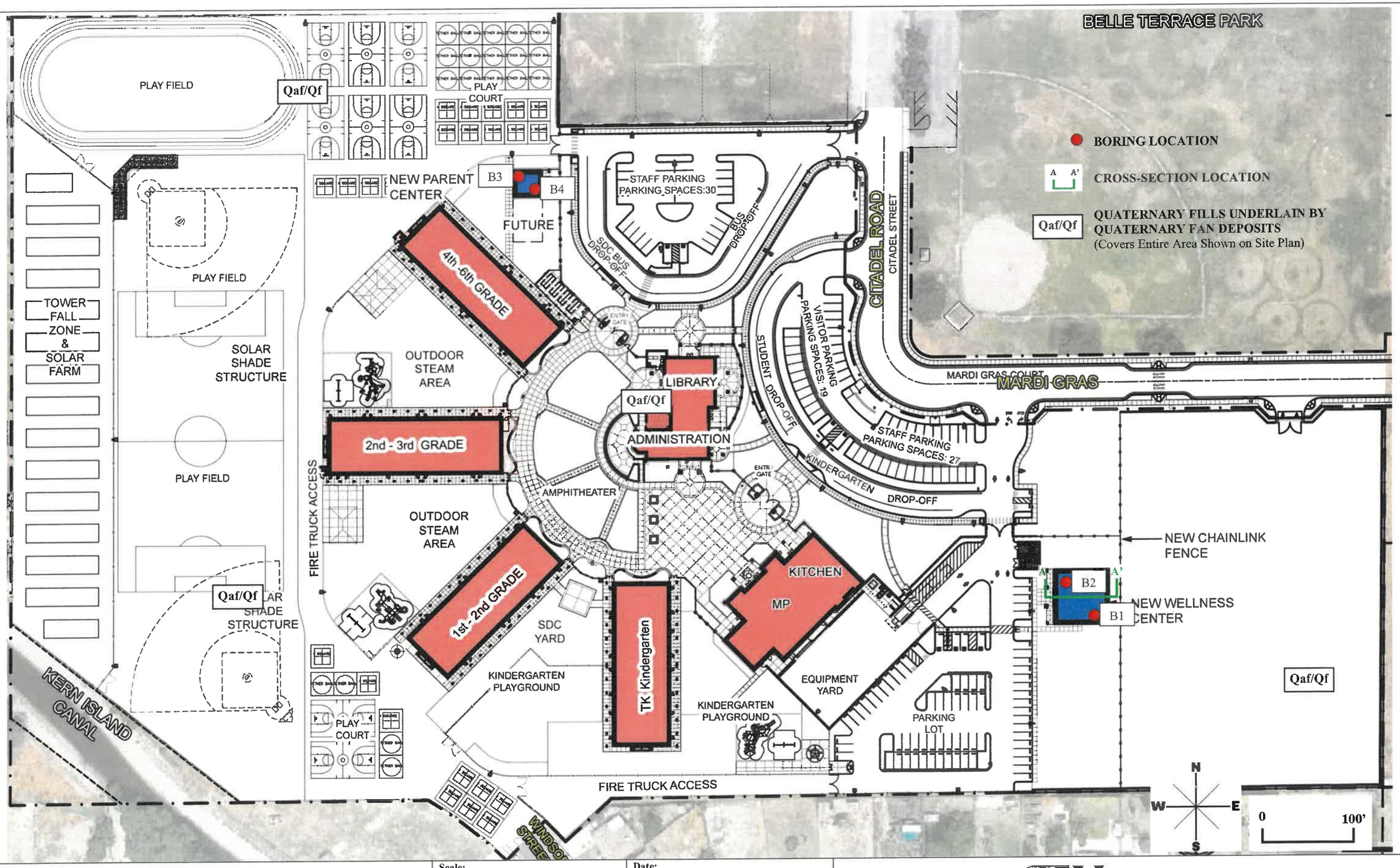
SJN/DRJ:ht



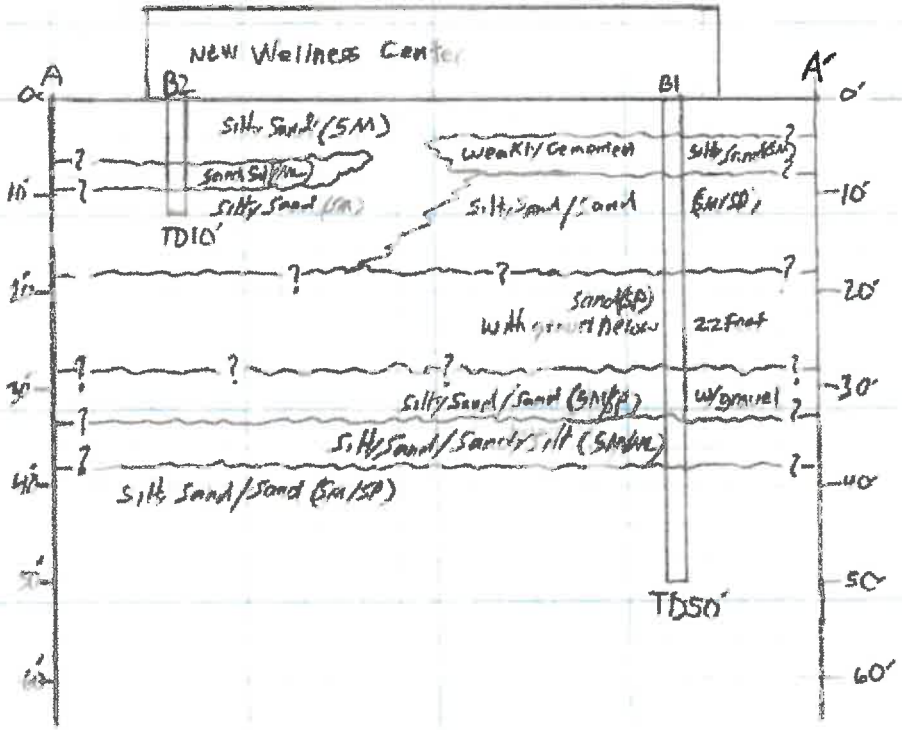
VICINITY MAP

MAP SOURCE:
U.S.G.S. "LAMONT, CA." QUADRANGLE 7.5
MINUTE SERIES (TOPO), DATED 1992

GEOTECHNICAL ENGINEERING INVESTIGATION **MLK ELEMENTARY SCHOOL** 1100 Citadel Street Bakersfield, California	**Scale:** As Shown	**Date:** Oct. 2022	Krazan GEOTECHNICAL ENGINEERING
	Drawn by: HT	**Approved by:** SN	
	Project No. 022-22124	**Figure No.** 1	

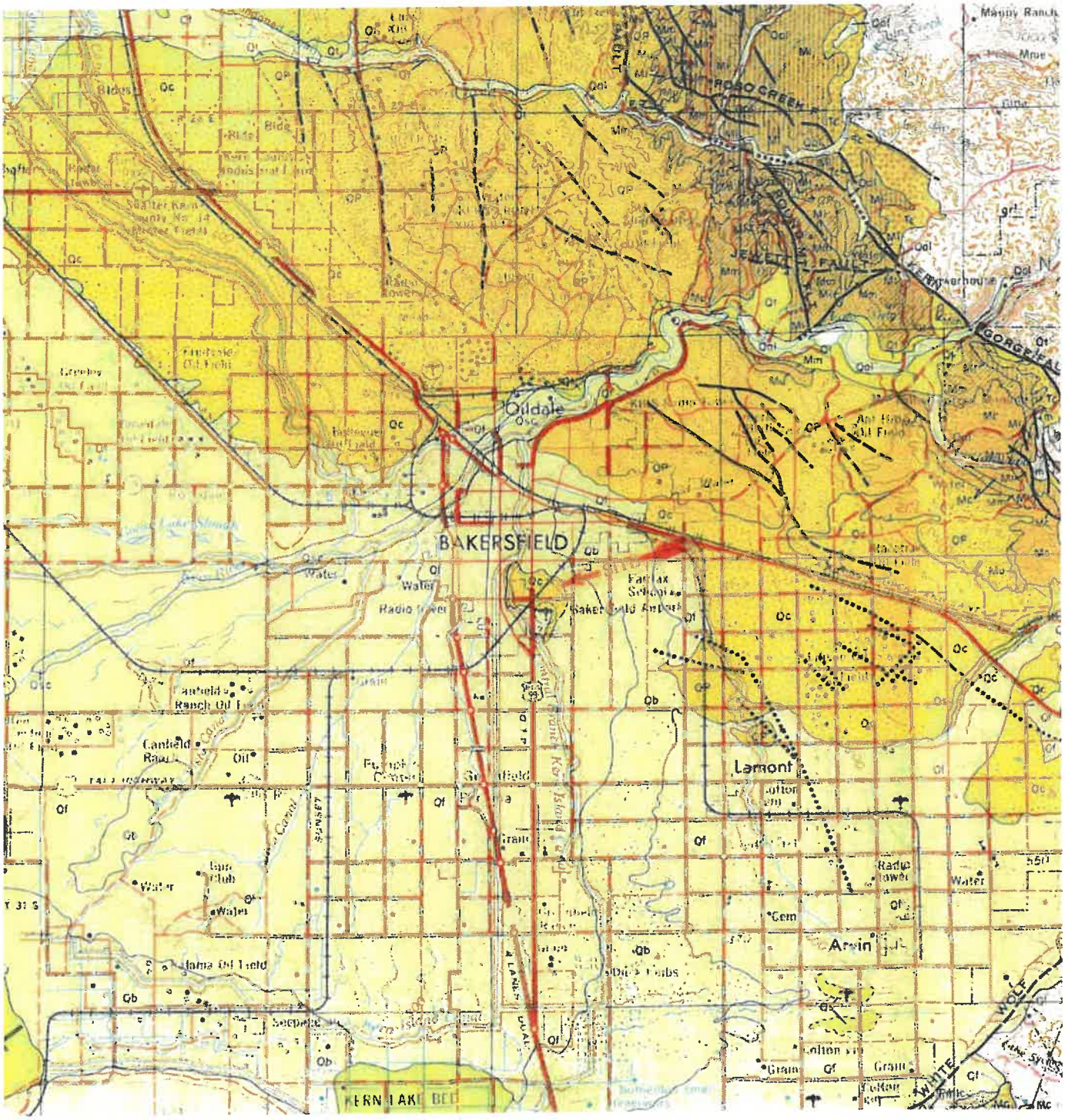


SITE MAP	**Scale:** As Shown	**Date:** October 2022	Krazan GEOTECHNICAL ENGINEERING
MLK Elementary School Wellness Center and Parent Center **1100 Citadel Street** **Bakersfield, California**	**Drawn by:** HT	**Approved by:** DJ	
	Project No. 022-22124	**Figure No.** 2	



0 ——— 20'

SITE GEOLOGIC CROSS-SECTION	Scale: As Shown	Date: October 2022	Krazan GEOTECHNICAL ENGINEERING
MLK ELEMENTARY SCHOOL 1100 Citadel Street Bakersfield, California	Drawn by: HT	Approved by: DJ	
	Project No. 022-22124	Figure No. 3	



REGIONAL GELOGIC MAP

NORTH

0 4 8

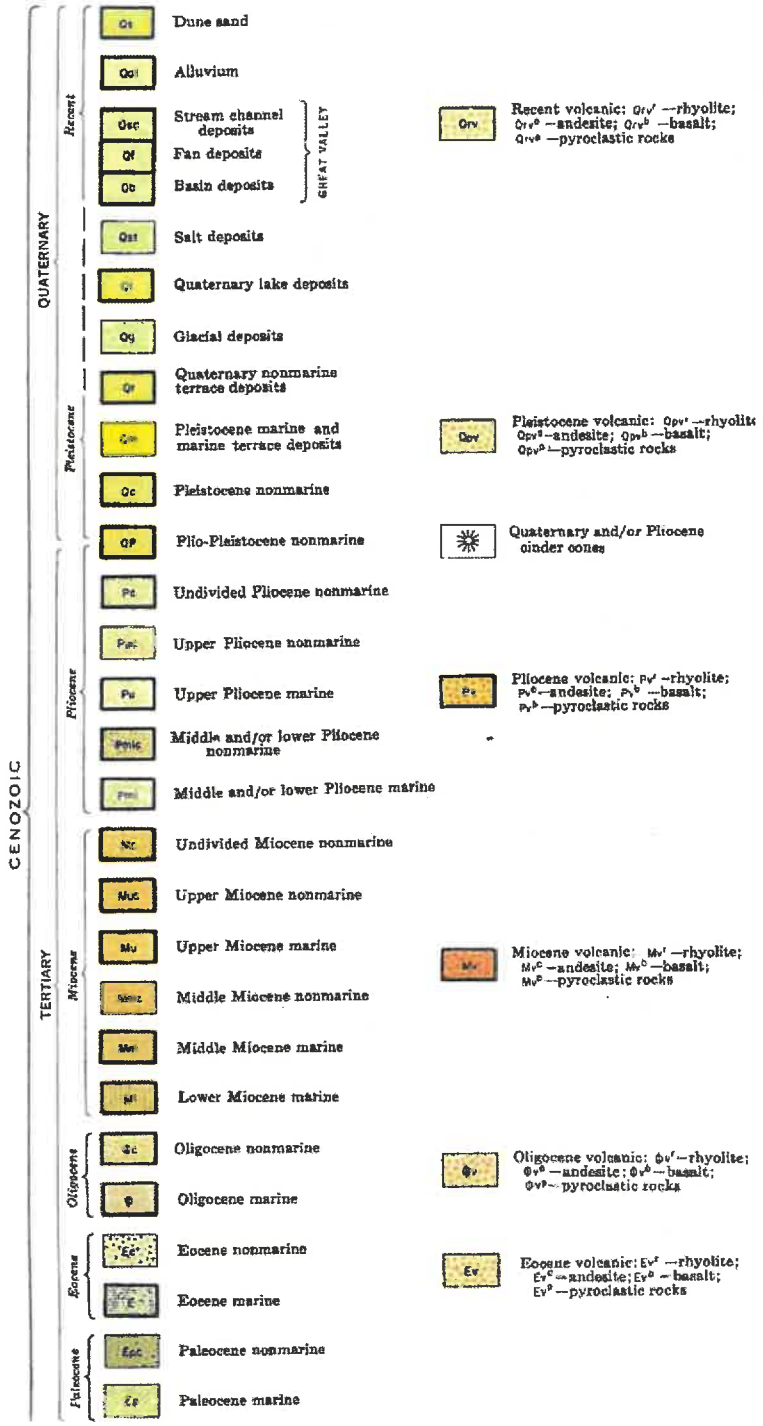
SCALE IN MILES (±)

FROM:
GEOLOGIC MAP OF CALIFORNIA-BAKERSFIELD SHEET
OLAF P. JENKINS EDITION,
COMPLIATION BY ARTHUR R. SMITH, 1964

GEOTECHNICAL ENGINEERING INVESTIGATION
MLK ELEMENTARY SCHOOL
1100 Citadel Street
Bakersfield, California

Scale:	Date:
As Shown	Oct. 2022
Drawn by:	**Approved by:**
HT	SN
Project No.	**Figure No.**
022-22124	4

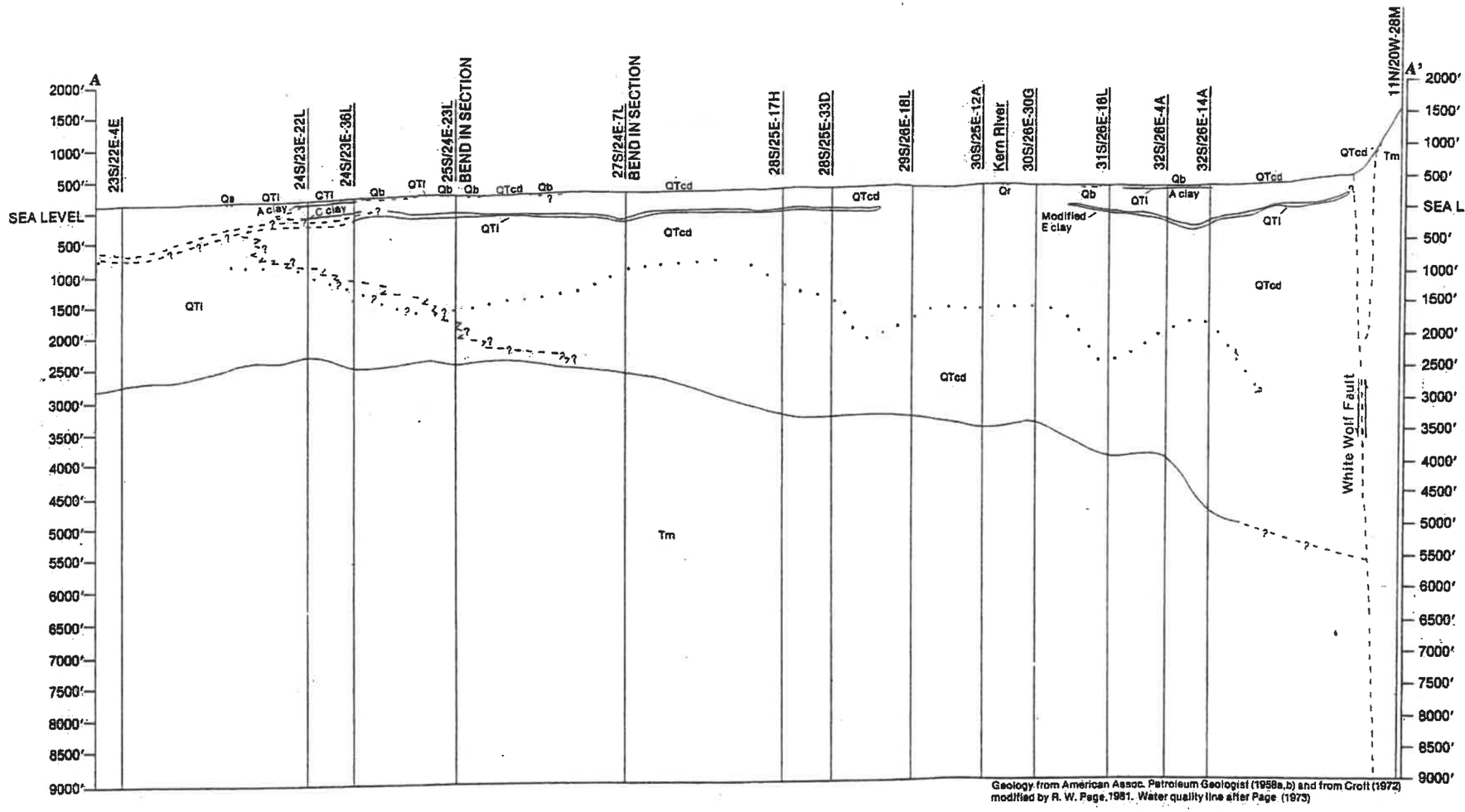
Krazan
GEOTECHNICAL ENGINEERING



REGIONAL GELOGIC MAP
EXPLANATION

FROM:
GEOLOGIC MAP OF CALIFORNIA-BAKERSFIELD SHEET
OLAF P. JENKINS EDITION,
COMPLIATION BY ARTHUR R. SMITH, 1964

GEOTECHNICAL ENGINEERING INVESTIGATION **MLK ELEMENTARY SCHOOL** 1100 Citadel Street Bakersfield, California	**Scale:** As Shown	**Date:** Oct. 2022	Krazan GEOTECHNICAL ENGINEERING
	Drawn by: HT	**Approved by:** SN	
	Project No. 022-22124	**Figure No.** 4a	



Geology from American Assoc. Petroleum Geologist (1958a,b) and from Croft (1972) modified by R. W. Page,1981. Water quality line after Page (1973)

EXPLANATION

Qs	*SAND DUNES (HOLOCENE)*
Qb	*FLOOD BASIN DEPOSITS (HOLOCENE)*
QTi	*LACUSTRINE & MARSH DEPOSITS (PLIOCENE TO HOLOCENE)*
QTcd	*CONTINENTAL ROCKS & DEPOSITS (OLIGOCENE TO HOLOCENE)*
Tm	*MARINE ROCKS & DEPOSITS (EOCENE, OLIGOCENE, MIOCENE, & PLIOCENE)*
TpT	*CONTINENTAL & MARINE ROCKS & DEPOSITS (PRE-TERTIARY TO OLIGOCENE)*
pTgm	*GRANITE & METAMORPHIC ROCKS (PRE-TERTIARY)*
—?—	*STRATIGRAPHIC UNIT CONTACT APPROXIMATELY LOCATED; QUERIED WHERE DATA ARE INCONCLUSIVE*

NOTE:

SEE FAULT MAP FOR LOCATION OF GEOLOGIC CROSS SECTION

REGIONAL GELOGIC CROSS-SECTION SHOWING THE SAN JOAQUIN VALLEY

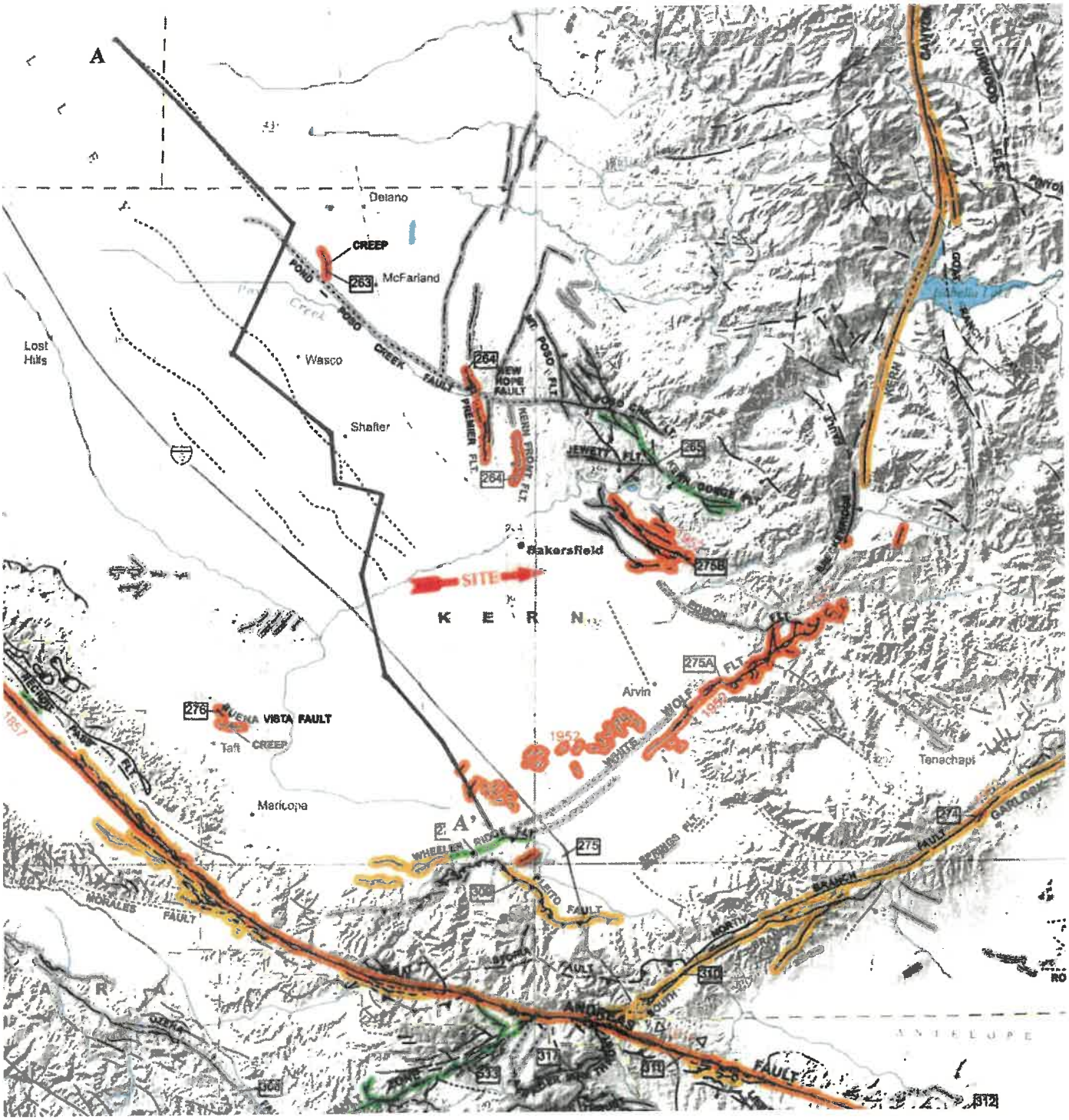
NOTE:

SEE FAULT MAP FOR LOCATION OF GEOLOGIC CROSS-SECTION.

GEOTECHNICAL ENGINEERING INVESTIGATION
MLK ELEMENTARY SCHOOL
1100 Citadel Street
Bakersfield, California

Scale: NTS	Date: Oct. 2022
Drawn by: HT	Approved by: DJ
Project No. 022-22124	Figure No. 5

Krazan
GEOTECHNICAL ENGINEERING



FAULT MAP

NOTES:

PREPARED FROM THE C.G.S. "FAULT ACTIVITIY MAP OF CALIFORNIA" JENNINGS AND BRYANT, 2010

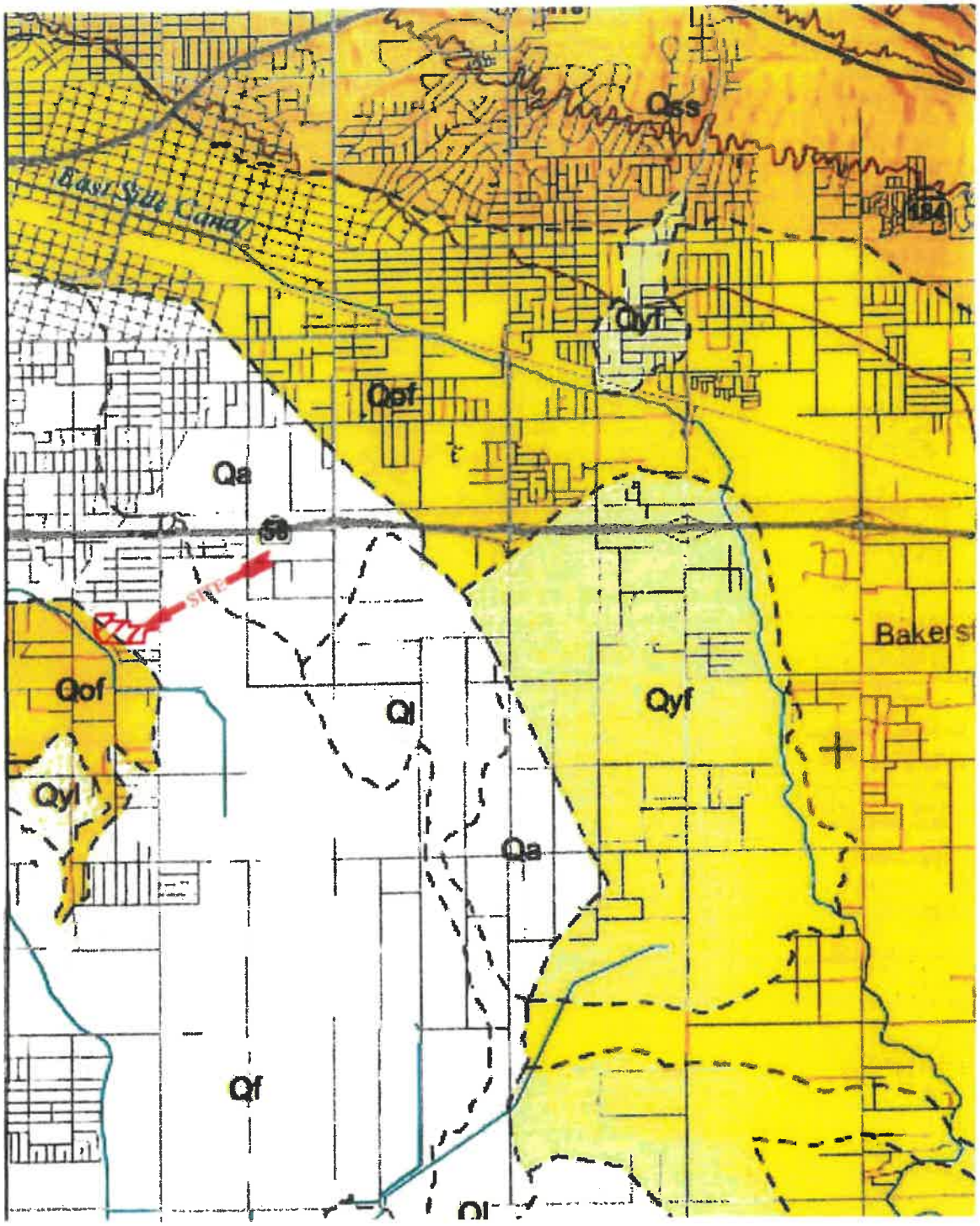
FAULT TRACES ON LAND ARE INDICATED BY SOLID LINES WHERE WELL LOCATED, BY DASHED LINES WHERE CONCEALED BY YOUNGER ROCKS OR BY LAKES OR BAYS. FAULT TRACES ARE QUERIED WHERE CONTINUATION OR EXISTENCE IS UNCERTAIN.

NORTH

0 12 24

SCALE IN MILES (±)

GEOTECHNICAL ENGINEERING INVESTIGATION **MLK ELEMENTARY SCHOOL** 1100 Citadel Street Bakersfield, California	**Scale:** As Shown	**Date:** Oct. 2022	Krazan GEOTECHNICAL ENGINEERING
	Drawn by: HT	**Approved by:** SN	
	Project No. 022-22124	**Figure No.** 7	



LOCAL GELOGIC MAP

FROM:
GEOLOGIC MAP OF THE QUATERNARY SURFICIAL DEPOSITS IN SOUTHERN CALIFORNIA, EAST HALF OF TEHACHAPI 30 X 60 QUADRANGLE BY W.D. HAYDON & C.A. HAYHURST, 2011

NORTH

0 5,000 10,000

SCALE IN FEET(±)

GEOTECHNICAL ENGINEERING INVESTIGATION **MLK ELEMENTARY SCHOOL** 1100 Citadel Street Bakersfield, California	**Scale:** As Shown	**Date:** Oct. 2022	Krazan GEOTECHNICAL ENGINEERING
	Drawn by: HT	**Approved by:** SN	
	Project No. 022-22124	**Figure No.** 6	

MAP UNITS

Late Holocene (Surficial Deposits)

af — **Artificial Fill** - deposits of fill resulting from human construction, mining, or quarrying activities; includes engineered fill for buildings, roads, dams, airport runways, harbor facilities, and waste landfills

Qsu — **Undifferentiated Surficial Deposits** - includes colluvium, slope wash, talus deposits, and other surface deposits of all ages; generally unconsolidated but locally may contain consolidated layers

Qls — **Landslide Deposits** - may include debris flows and older landslides of various earth material and movement types; unconsolidated to moderately well-consolidated

Qw — **Alluvial Wash Deposits** - unconsolidated sandy and gravelly sediment deposited in recently active channels of streams and rivers; may contain loose to moderately loose sand and silty sand

Qf — **Alluvial Fan Deposits** - unconsolidated boulders, cobbles, gravel, sand, and silt recently deposited where a river or stream issues from a confined valley or canyon; sediment typically deposited in a fan-shaped cone; gravelly sediment generally more dominant than sandy sediment

Qa — **Alluvial Valley Deposits** - unconsolidated clay, silt, sand, and gravel recently deposited parallel to localized stream valleys and/or spread more regionally onto alluvial flats of larger river valleys; sandy sediment generally more dominant than gravelly sediment

Qt — **Terrace Deposits** - includes marine and stream terrace deposits; marine deposits include slightly to moderately consolidated and bedded gravel and conglomerate, sand and sandstone, and silt and siltstone; river terrace deposits consist of unconsolidated thin- to thick-bedded gravel

Ql — **Lacustrine, Playa, and Estuarine (Paralic) Deposits** - mostly unconsolidated fine-grained sand, silt, mud, and clay from fresh water (lacustrine) lakes, saline (playa) dry lakes that are periodically flooded, and estuaries; deposits may contain salt and other evaporites

Qe — **Eolian and Dune Deposits** - unconsolidated, generally well-sorted wind-blown sand; may occur as dune forms or sheet sand

Holocene to Late Pleistocene (Surficial Deposits)

Qyw — **Young Alluvial Wash Deposits** - unconsolidated to slightly consolidated, undissected to slightly dissected sandy and gravelly stream bed sediments in marginal parts of active and recently active washes and river channels

Qyf — **Young Alluvial Fan Deposits** - unconsolidated to slightly consolidated, undissected to slightly dissected boulder, cobble, gravel, sand, and silt deposits issued from a confined valley or canyon

Qya — **Young Alluvial Valley Deposits** - unconsolidated to slightly consolidated, undissected to slightly dissected clay, silt, sand, and gravel along stream valleys and alluvial flats of larger rivers

Qyt — **Young Terrace Deposits** - unconsolidated to slightly consolidated, undissected to slightly dissected marine and stream terrace deposits

Qyl — **Young Lacustrine, Playa, and Estuarine (Paralic) Deposits** - unconsolidated to slightly consolidated, undissected to slightly dissected fine-grained sand, silt, mud and clay from lake, playa, and estuarine deposits of various types

Qye — **Young Eolian and Dune Deposits** - unconsolidated to slightly consolidated, undissected to slightly dissected wind-blown sands

LOCAL GEOLOGIC MAP

EXPLANATION

FROM:
GEOLOGIC MAP OF THE QUATERNARY SURFICIAL DEPOSITS IN SOUTHERN CALIFORNIA, EAST HALF OF THE TEHACHAPI 30' X 60' QUADRANGLE BY W.D. HAYTON AND C.A. HAYHURST, 2011.

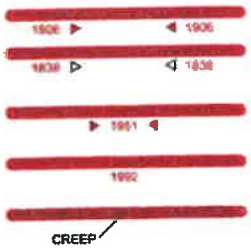
GEOTECHNICAL ENGINEERING INVESTIGATION MLK ELEMENTARY SCHOOL 1100 Citadel Street Bakersfield, California	Scale: As Shown	Date: Oct. 2022	Krazan GEOTECHNICAL ENGINEERING
	Drawn by: HT	Approved by: SN	
	Project No. 022-22124	Figure No. 6a	

Fault along which historic (last 200 years) displacement has occurred and is associated with one or more of the following:

(a) a recorded earthquake with surface rupture. (Also included are some well-defined surface breaks caused by ground shaking during earthquakes, e.g. extensive ground breakage, not on the White Wolf fault, caused by the Arvin-Tehachapi earthquake of 1952). The date of the associated earthquake is indicated. Where repeated surface ruptures on the same fault have occurred, only the date of the latest movement may be indicated, especially if earlier reports are not well documented as to location of ground breaks.

(b) fault creep slippage - slow ground displacement usually without accompanying earthquakes.

(c) displaced survey lines.



A triangle to the right or left of the date indicates termination point of observed surface displacement. Solid red triangle indicates known location of rupture termination point. Open black triangle indicates uncertain or estimated location of rupture termination point.

Date bracketed by triangles indicates local fault break.

No triangle by date indicates an intermediate point along fault break.

Fault that exhibits fault creep slippage. Hachures indicate linear extent of fault creep. Annotation (creep with leader) indicates representative locations where fault creep has been observed and recorded.

Square on fault indicates where fault creep slippage has occured that has been triggered by an earthquake on some other fault. Date of causative earthquake indicated. Squares to right and left of date indicate terminal points between which triggered creep slippage has occurred (creep either continuous or intermittent between these end points).

Holocene fault displacement (during past 11,700 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. Unnumbered Quaternary faults were based on Fault Map of California, 1975. See Bulletin 201, Appendix D for source data.

Pre-Quaternary fault (older that 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissnce nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

FAULT MAP EXPLANATION

NOTES:

PREPARED FROM THE C.G.S. "FAULT ACTIVITIY MAP OF CALIFORNIA" JENNINGS AND BRYANT, 2010

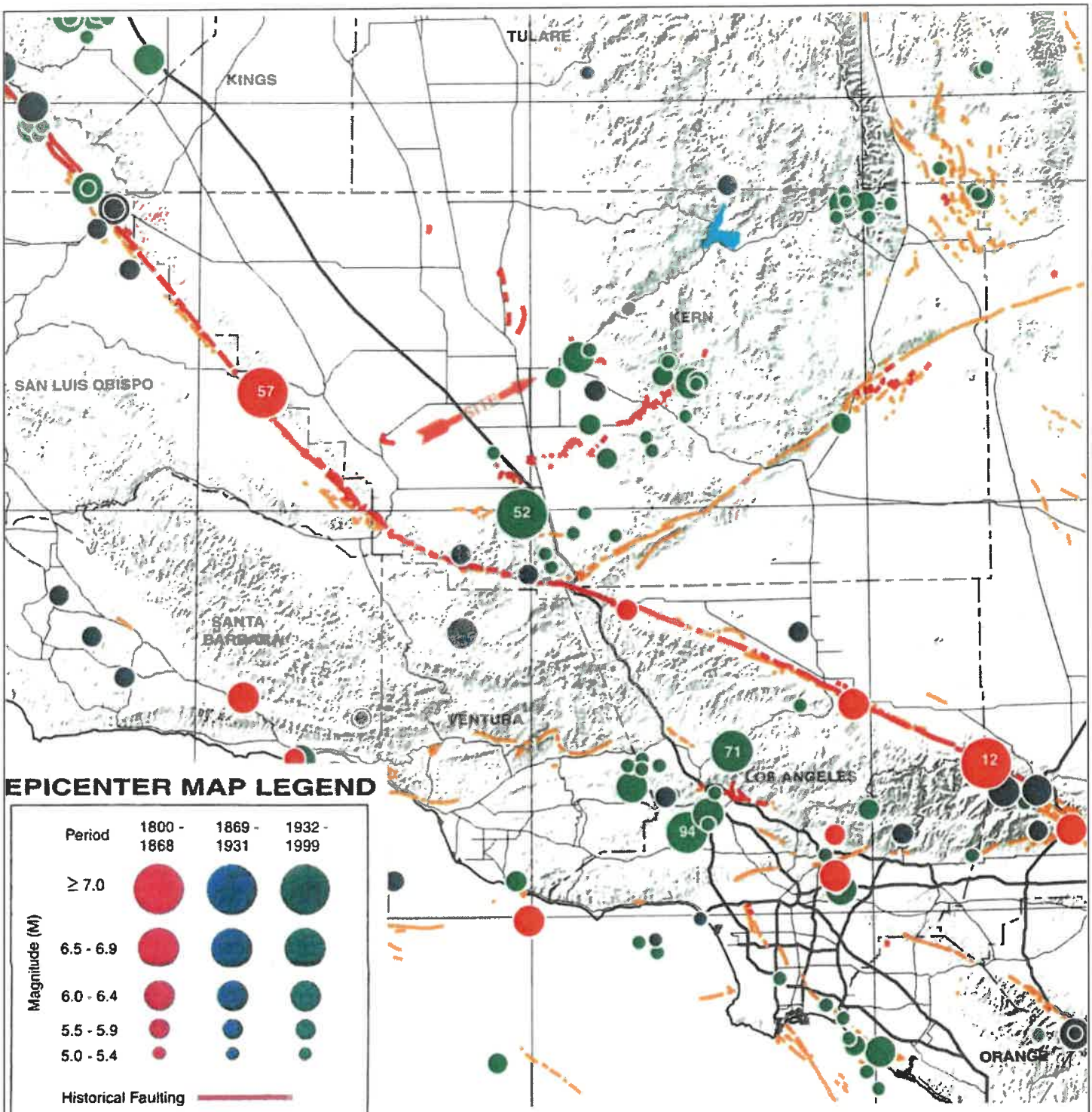
FAULT TRACES ON LAND ARE INDICATED BY SOLID LINES WHERE WELL LOCATED, BY DASHED LINES WHERE CONCEALED BY YOUNGER ROCKS OR BY LAKES OR BAYS. FAULT TRACES ARE QUERIED WHERE CONTINUATION OR EXISTENCE IS UNCERTAIN.

CROSS SECTION LOCATION
A ——— A'

GEOTECHNICAL ENGINEERING INVESTIGATION
MLK ELEMENTARY SCHOOL
1100 Citadel Street
Bakersfield, California

Scale:	Date:
As Shown	Oct. 2022
Drawn by:	**Approved by:**
HT	SN
Project No.	**Figure No.**
022-22124	7a

Krazan
GEOTECHNICAL ENGINEERING



EPICENTER MAP LEGEND

Period	1800 - 1868	1869 - 1931	1932 - 1999
Magnitude (M) ≥ 7.0			
6.5 - 6.9			
6.0 - 6.4			
5.5 - 5.9			
5.0 - 5.4			

Historical Faulting

Holocene Faulting

Highways (Major)

Highways (Minor)

Lakes

65 — Last two digits of M ≥ 6.5 earthquake year

EPICENTER MAP

MAP SOURCE:
CGS MAP SHEET 49
EPICENTERS OF AND AREAS DAMAGED BY M > 5 CALIFORNIA EARTHQUAKES, 1800–1999
BY TOPPOZADA, BRANUM, PETERSEN, HALLSTROM, CRAMER & REICHLE, 2000

NORTH

0 40' 80'

SCALE IN KILOMETERS (±)

GEOTECHNICAL ENGINEERING INVESTIGATION
MLK ELEMENTARY SCHOOL
1100 Citadel Street
Bakersfield, California

Scale:	Date:
As Shown	Oct. 2022
Drawn by:	**Approved by:**
HT	SN
Project No.	**Figure No.**
022-22124	8

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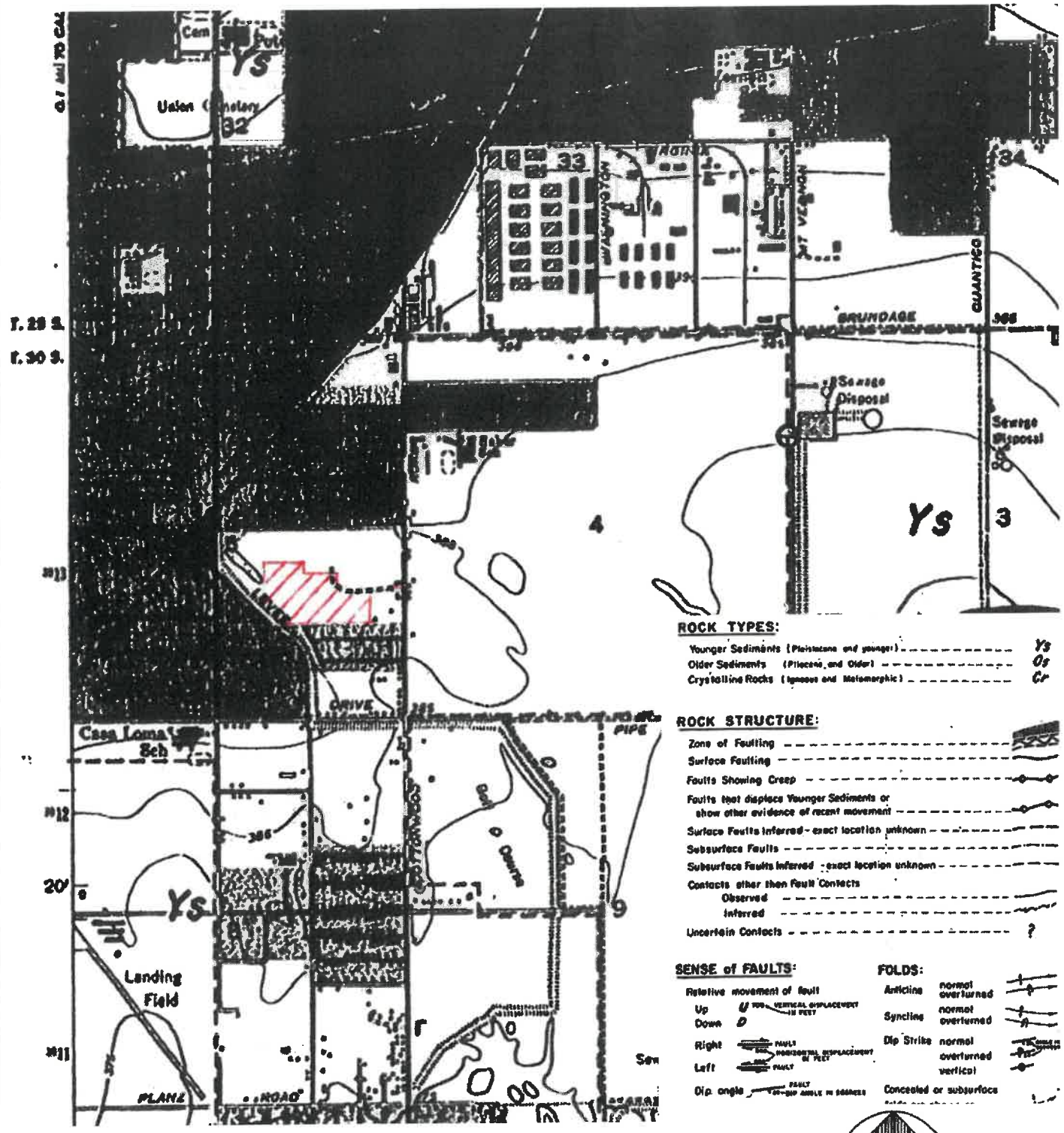
GEOTECHNICAL ENGINEERING



SEISMIC HAZARDS ATLAS

KERN COUNTY OFFICIAL MAP EFFECTIVE NOVEMBER 1975

NORTH

0 2,000' 4,000'

SCALE IN FEET (±)

MAP SOURCE:
U.S.G.S. "LAMONT, CA." QUADRANGLE 7.5
MINUTE SERIES (TOPO), DATED 1954, 1968

GEOTECHNICAL ENGINEERING INVESTIGATION
MLK ELEMENTARY SCHOOL
1100 Citadel Street
Bakersfield, California

Scale:	Date:
As Shown	Oct. 2022
Drawn by:	**Approved by:**
HT	SN
Project No.	**Figure No.**
022-22124	9

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GEOTECHNICAL ENGINEERING

AERIAL PHOTO 2021

800 ft

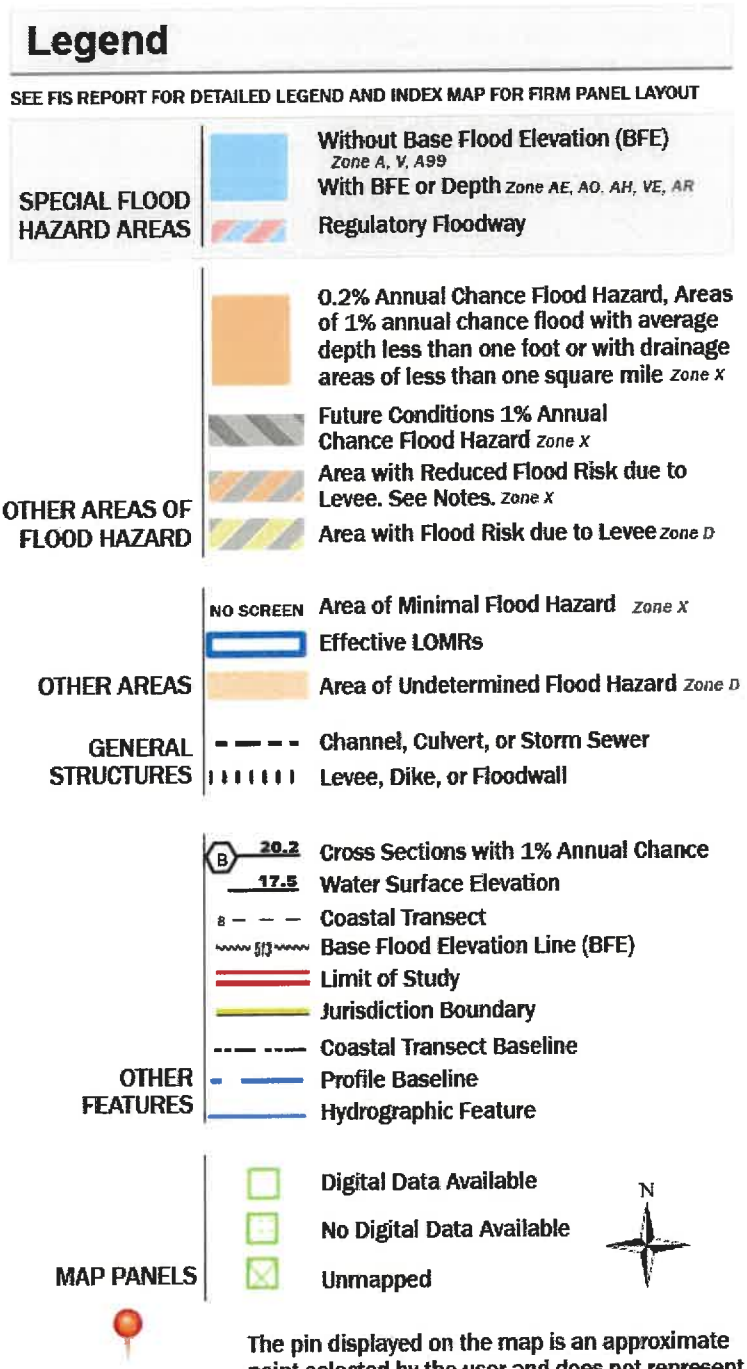
GEOTECHNICAL ENGINEERING INVESTIGATION **MLK ELEMENTARY SCHOOL** 1100 Citadel Street Bakersfield, California	**Scale:** As Shown	**Date:** Oct. 2022	Krazan GEOTECHNICAL ENGINEERING
	Drawn by: HT	**Approved by:** SN	
	Project No. 022-22124	**Figure No.** 10	

FLOOD MAP

NOTE:

ALL OF FEMA FLOOD INSURANCE MAP IS SHOWN WITHIN "ZONE X" UNLESS OTHERWISE NOTED

GEOTECHNICAL ENGINEERING INVESTIGATION **MLK ELEMENTARY SCHOOL** 1100 Citadel Street Bakersfield, California	**Scale:** As Shown	**Date:** Oct. 2022	Krazan GEOTECHNICAL ENGINEERING
	Drawn by: HT	**Approved by:** SN	
	Project No. 022-22124	**Figure No.** 11	



FLOOD MAP

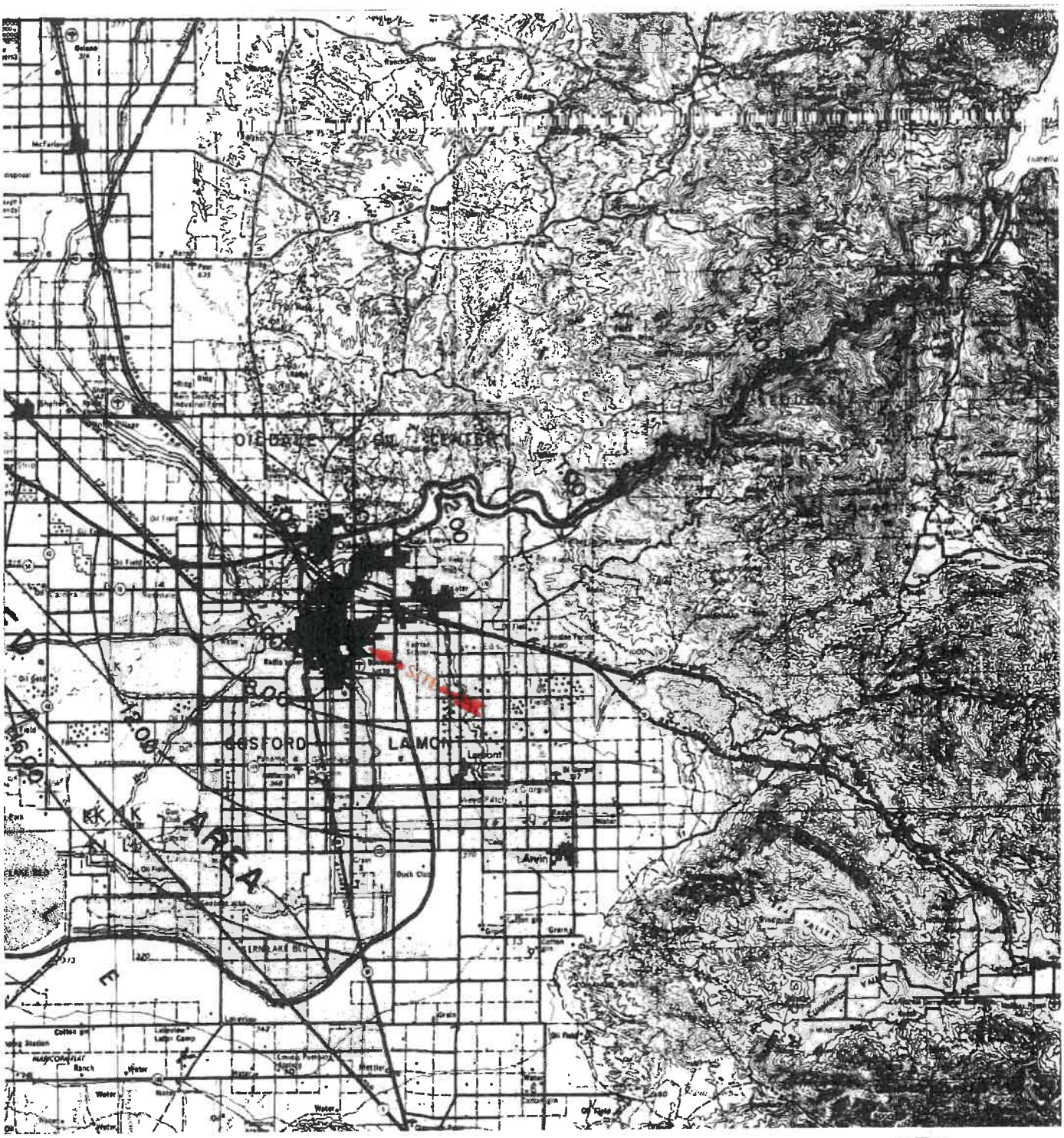
EXPLANATION

NOTE:

ALL OF FEMA FLOOD INSURANCE MAP IS SHOWN WITHIN "ZONE X" UNLESS OTHERWISE NOTED

GEOTECHNICAL ENGINEERING INVESTIGATION **MLK ELEMENTARY SCHOOL** 1100 Citadel Street Bakersfield, California	**Scale:** As Shown	**Date:** Oct. 2022
	Drawn by: HT	**Approved by:** SN
	Project No. 022-22124	**Figure No.** 11a

Krazan
GEOTECHNICAL ENGINEERING



DAM INUNDATION MAP
ISABELLA LAKE DAM

NORTH

0 2.5 5

SCALE IN MILES (±)

FROM:
U.S. DEPARTMENT OF INTERIOR
BUREAU OF RECLAMATION
DECEMBER 6, 1974

GEOTECHNICAL ENGINEERING INVESTIGATION
MLK ELEMENTARY SCHOOL
1100 Citadel Street
Bakersfield, California

Scale:	Date:
As Shown	Oct. 2022
Drawn by:	**Approved by:**
HT	SN
Project No.	**Figure No.**
022-22124	12

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Input

Edition

Dynamic: Conterminous U.S. 2014 (upd...

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

35.34415

Time Horizon

Return period in years

2475

Longitude

Decimal degrees, negative values for western longitudes

-118.98978

Site Class

259 m/s (Site class D)

Hazard Curve

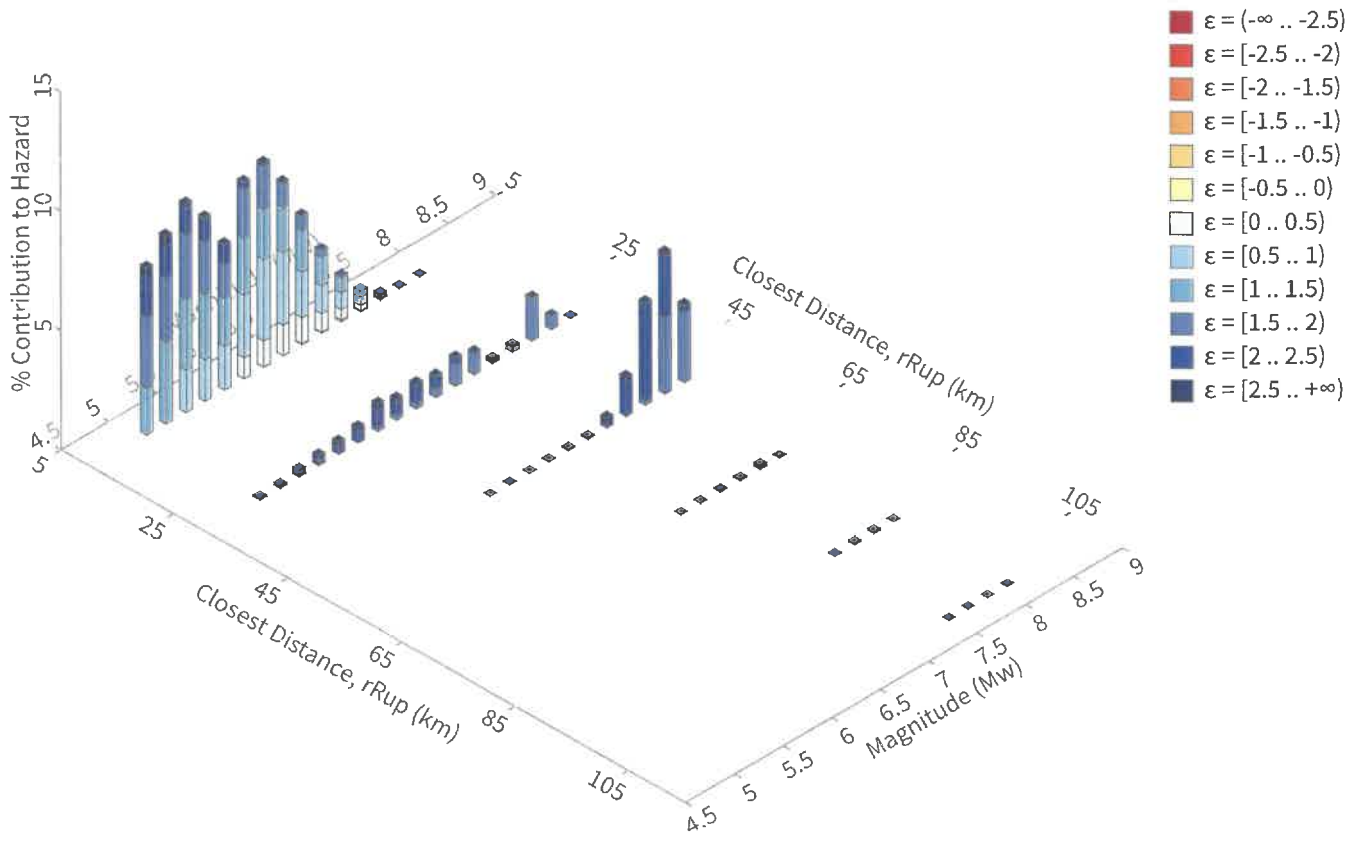
Please select “Edition”, “Location” & “Site Class” above to compute a hazard curve.

Compute Hazard Curve

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.53122883 g

Recovered targets

Return period: 2847.8207 yrs
Exceedance rate: 0.0003511457 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.09 %

Mean (over all sources)

m: 6.4
r: 19.46 km
ε_0: 1.49 σ

Mode (largest m-r bin)

m: 5.5
r: 10.06 km
ε_0: 1.48 σ
Contribution: 8.73 %

Mode (largest m-r-ε_0 bin)

m: 7.91
r: 56.19 km
ε_0: 2.18 σ
Contribution: 4.04 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
UC33brAvg_FM31 (opt)	Grid							39.51
PointSourceFinite: -118.990, 35.385		6.59	5.77	0.96	118.990°W	35.385°N	0.00	5.12
PointSourceFinite: -118.990, 35.385		6.59	5.77	0.96	118.990°W	35.385°N	0.00	5.11
PointSourceFinite: -118.990, 35.403		7.76	5.84	1.10	118.990°W	35.403°N	0.00	3.05
PointSourceFinite: -118.990, 35.403		7.76	5.84	1.10	118.990°W	35.403°N	0.00	3.04
PointSourceFinite: -118.990, 35.448		11.03	6.02	1.42	118.990°W	35.448°N	0.00	2.53
PointSourceFinite: -118.990, 35.448		11.03	6.02	1.42	118.990°W	35.448°N	0.00	2.53
PointSourceFinite: -118.990, 35.430		9.68	5.95	1.30	118.990°W	35.430°N	0.00	2.17
PointSourceFinite: -118.990, 35.430		9.68	5.95	1.30	118.990°W	35.430°N	0.00	2.17
PointSourceFinite: -118.990, 35.439		10.35	5.98	1.36	118.990°W	35.439°N	0.00	1.53
PointSourceFinite: -118.990, 35.439		10.35	5.98	1.36	118.990°W	35.439°N	0.00	1.53
PointSourceFinite: -118.990, 35.502		15.39	6.21	1.74	118.990°W	35.502°N	0.00	1.33
PointSourceFinite: -118.990, 35.502		15.39	6.21	1.74	118.990°W	35.502°N	0.00	1.33
UC33brAvg_FM32 (opt)	Grid							39.46
PointSourceFinite: -118.990, 35.385		6.59	5.77	0.96	118.990°W	35.385°N	0.00	5.11
PointSourceFinite: -118.990, 35.385		6.59	5.77	0.96	118.990°W	35.385°N	0.00	5.11
PointSourceFinite: -118.990, 35.403		7.76	5.83	1.10	118.990°W	35.403°N	0.00	3.04
PointSourceFinite: -118.990, 35.403		7.76	5.83	1.10	118.990°W	35.403°N	0.00	3.04
PointSourceFinite: -118.990, 35.448		11.03	6.02	1.42	118.990°W	35.448°N	0.00	2.53
PointSourceFinite: -118.990, 35.448		11.03	6.02	1.42	118.990°W	35.448°N	0.00	2.53
PointSourceFinite: -118.990, 35.430		9.68	5.95	1.30	118.990°W	35.430°N	0.00	2.17
PointSourceFinite: -118.990, 35.430		9.68	5.95	1.30	118.990°W	35.430°N	0.00	2.16
PointSourceFinite: -118.990, 35.439		10.35	5.98	1.36	118.990°W	35.439°N	0.00	1.53
PointSourceFinite: -118.990, 35.439		10.35	5.98	1.36	118.990°W	35.439°N	0.00	1.52
PointSourceFinite: -118.990, 35.502		15.40	6.21	1.74	118.990°W	35.502°N	0.00	1.33
PointSourceFinite: -118.990, 35.502		15.40	6.21	1.74	118.990°W	35.502°N	0.00	1.32
UC33brAvg_FM31	System							10.55
San Andreas (Big Bend) [3]		56.58	8.07	2.06	119.138°W	34.850°N	193.82	6.44
Pleito [2]		39.28	7.91	1.79	119.058°W	34.996°N	189.17	1.33
UC33brAvg_FM32	System							10.48
San Andreas (Big Bend) [3]		56.58	8.07	2.06	119.138°W	34.850°N	193.82	6.41
Pleito [2]		39.28	7.91	1.79	119.058°W	34.996°N	189.17	1.29

U.S. Geological Survey - Earthquake Hazards Program

2008 National Seismic Hazard Maps - Source Parameters

New Search

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)
16.51	White Wolf	CA	2	75	S	reverse	0	14	63
23.47	Pleito	CA	2	46	S	reverse	0	14	44
33.75	Garlock;GC+GW	CA	n/a	90	V	strike slip	0.4	12	210
33.75	Garlock;GE+GC+GW	CA	n/a	90	V	strike slip	0.3	12	256
33.75	Garlock;GW	CA	6	90	V	strike slip	0.7	14	98
35.10	S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	85		strike slip	0.1	13	390
35.10	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	512
35.10	S. San Andreas;BB+NM+SM	CA	n/a	90	V	strike slip	0	14	184
35.10	S. San Andreas;PK+CH+CC+BB	CA	n/a	90	V	strike slip	0.1	12	208
35.10	S. San Andreas;PK+CH+CC+BB+NM	CA	n/a	90	V	strike slip	0.1	12	245
35.10	S. San Andreas;PK+CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0.1	13	342
35.10	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0.1	13	377
35.10	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0.1	13	421
35.10	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0.1	13	479
35.10	S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	548
35.10	S. San Andreas;BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	220
35.10	S. San Andreas;BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	263
35.10	S. San Andreas;BB+NM+SM+NSB+SSB+BG	CA	n/a	84		strike	0	14	321

						slip			
35.10	S. San Andreas;CH+CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14	306
35.10	S. San Andreas;CC+BB	CA	n/a	90	V	strike slip	0	15	109
35.10	S. San Andreas;CC+BB+NM	CA	n/a	90	V	strike slip	0	15	146
35.10	S. San Andreas;CC+BB+NM+SM	CA	n/a	90	V	strike slip	0	14	243
35.10	S. San Andreas;CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	279
35.10	S. San Andreas;CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	322
35.10	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	85		strike slip	0	14	380
35.10	S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO	CA	n/a	86		strike slip	0.1	13	449
35.10	S. San Andreas;BB	CA	34	90	V	strike slip	0	15	50
35.10	S. San Andreas;CH+CC+BB	CA	n/a	90	V	strike slip	0	14	171
35.10	S. San Andreas;CH+CC+BB+NM	CA	n/a	90	V	strike slip	0	14	208
35.10	S. San Andreas;CH+CC+BB+NM+SM+NSB	CA	n/a	90	V	strike slip	0	14	341
35.10	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	14	384
35.10	S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG	CA	n/a	86		strike slip	0	14	442
35.10	S. San Andreas;BB+NM	CA	n/a	90	V	strike slip	0	15	87
36.20	S. San Andreas;CC	CA	34	90	V	strike slip	0	15	59
36.20	S. San Andreas;CH+CC	CA	n/a	90	V	strike slip	0	14	122
36.20	S. San Andreas;PK+CH+CC	CA	n/a	90	V	strike slip	0.2	11	158
37.40	S. San Andreas;NM+SM+NSB+SSB+BG	CA	n/a	83		strike slip	0	14	271
37.40	S. San Andreas;NM+SM+NSB+SSB+BG+CO	CA	n/a	84		strike slip	0.1	13	340
37.40	S. San Andreas;NM+SM+NSB	CA	n/a	90	V	strike	0	13	170

						slip			
37.40	S. San Andreas;NM+SM+NSB+SSB	CA	n/a	90	V	strike slip	0	13	213
37.40	S. San Andreas;NM	CA	27	90	V	strike slip	0	15	37
37.40	S. San Andreas;NM+SM	CA	n/a	90	V	strike slip	0	14	134
43.91	San Gabriel	CA	1	61	N	strike slip	0	15	71
49.60	S. San Andreas;PK+CH	CA	n/a	90	V	strike slip	0.4	8	99
49.60	S. San Andreas;CH	CA	34	90	V	strike slip	0	12	63

APPENDIX A

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

The field investigation consisted of a surface reconnaissance and a subsurface exploratory program. Four 4½-inch to 6½-inch exploratory borings were advanced. The boring locations are shown on the site plan.

The soils encountered were logged in the field during the exploration and with supplementary laboratory test data are described in accordance with the Unified Soil Classification System.

Modified standard penetration tests and standard penetration tests were performed at selected depths. These tests represent the resistance to driving a 2½-inch and 1½-inch diameter core barrel, respectively. The driving energy was provided by a hammer weighing 140 pounds falling 30 inches. Relatively undisturbed soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the auger cuttings. The modified standard penetration tests are identified in the sample type on the boring logs with a full shaded in block. The standard penetration tests are identified in the sample type on the boring logs with half of the block shaded. All samples were returned to our Clovis laboratory for evaluation.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the foundation soil underlying the site. Test results were used as criteria for determining the engineering suitability of the surface and subsurface materials encountered.

In-situ moisture content, dry density, consolidation, direct shear, and sieve analysis tests were completed for the undisturbed samples representative of the subsurface material. These tests, supplemented by visual observation, comprised the basis for our evaluation of the site material.

The logs of the exploratory borings and laboratory determinations are presented in this Appendix.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)		
		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)		
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)		
		SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)		
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of 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 AND CLAYS Liquid limit 50% or greater		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 silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

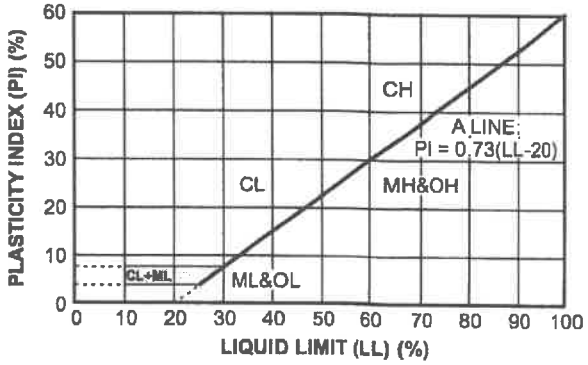
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.42
Fine-grained	No. 40 to No. 200	0.42 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Boring B1

Project: MLK Elementary School Welness Center and Parent Center

Project No: 022-22124

Client: Bakersfield City School District

Figure No.: A-1

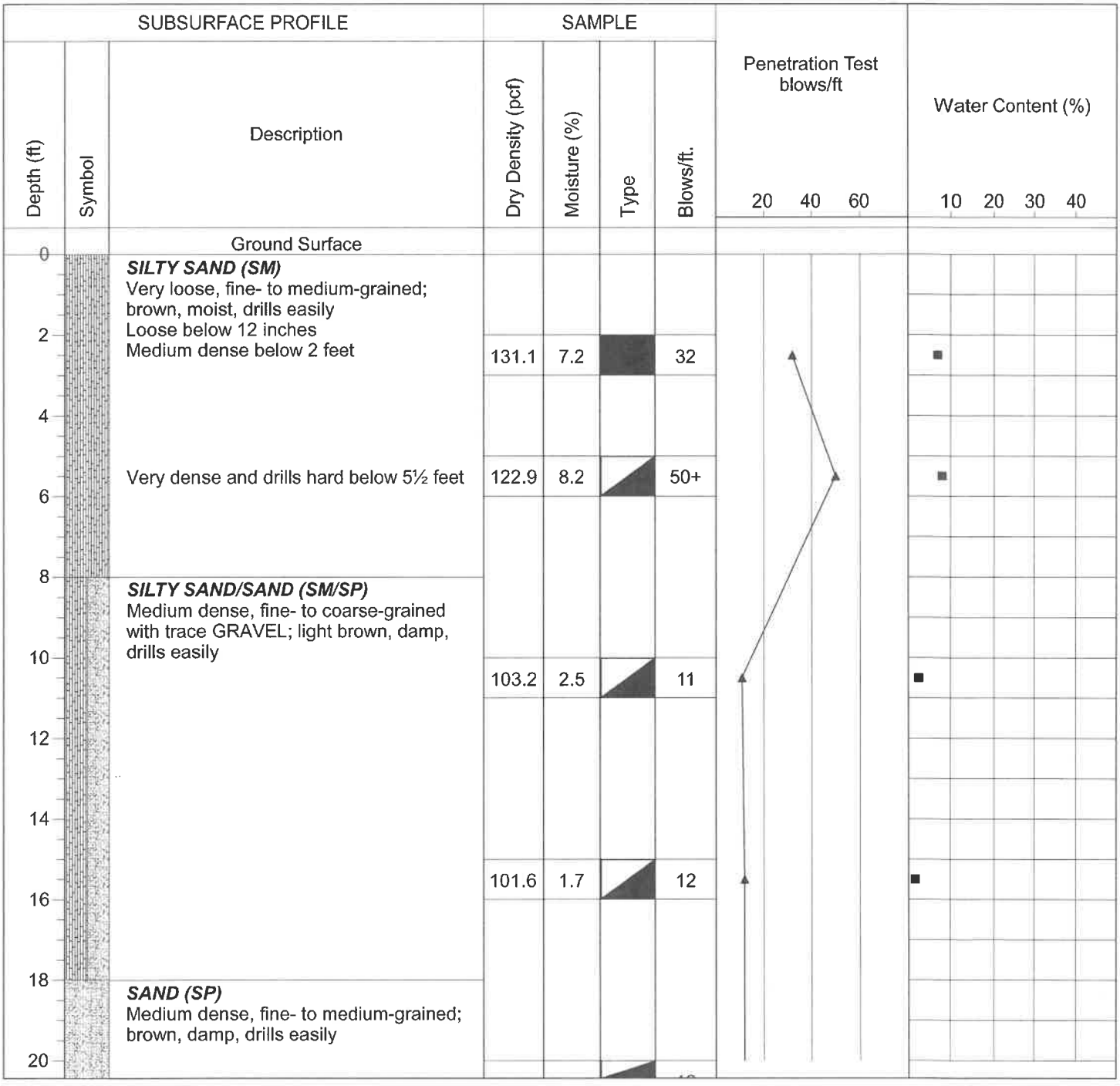
Location: 1100 Citadel Street, Bakersfield, California

Logged By: Erick Escobar

Depth to Water>

Initial: None

At Completion: None



Drill Method: Hollow Stem

Drill Date: 8-15-22

Drill Rig: CME 45C

Krazan and Associates

Hole Size: 6½ Inches

Driller: Eddie Tapia

Elevation: 50 Feet

Log of Boring B1

Project: MLK Elementary School Welness Center and Parent Center | **Project No:** 022-22124

Client: Bakersfield City School District | **Figure No.:** A-1

Location: 1100 Citadel Street, Bakersfield, California | **Logged By:** Erick Escobar

Depth to Water> | **Initial:** None | **At Completion:** None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
22			96.8	3.1		12
24		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to medium-grained; brown, damp, drills easily				
26			102.8	1.8		28
28		***SILTY SAND/SAND (SM/SP)*** Medium dense, fine- to coarse-grained; with trace GRAVEL brown, damp, drills easily				
30			113.0	1.9		28
32						
34		***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained; brown, moist, drills easily				
36			115.6	11.5		23
38		***SILTY SAND/SAND (SM/SP)*** Dense, fine- to medium-grained; brown, damp, drills firmly				
40						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Hollow Stem | **Drill Date:** 8-15-22

Drill Rig: CME 45C | **Hole Size:** 6½ Inches

Driller: Eddie Tapia | **Elevation:** 50 Feet

Krazan and Associates

Log of Boring B1

Project: MLK Elementary School Welness Center and Parent Center

Project No: 022-22124

Client: Bakersfield City School District

Figure No.: A-1

Location: 1100 Citadel Street, Bakersfield, California

Logged By: Erick Escobar

Depth to Water>

Initial: None

At Completion: None

SUBSURFACE PROFILE			SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
42			109.2	1.8		39		
44								
46			115.0	1.9		34		
48		***SANDY SILT (ML)*** Dense, fine- to medium-grained; brown, damp, drills firmly						
50		End of Borehole						
52								
54								
56								
58								
60								

Drill Method: Hollow Stem

Drill Date: 8-15-22

Drill Rig: CME 45C

Krazan and Associates

Hole Size: 6½ Inches

Driller: Eddie Tapia

Elevation: 50 Feet

Log of Boring B2

Project: MLK Elementary School Welness Center and Parent Center

Project No: 022-22124

Client: Bakersfield City School District

Figure No.: A-2

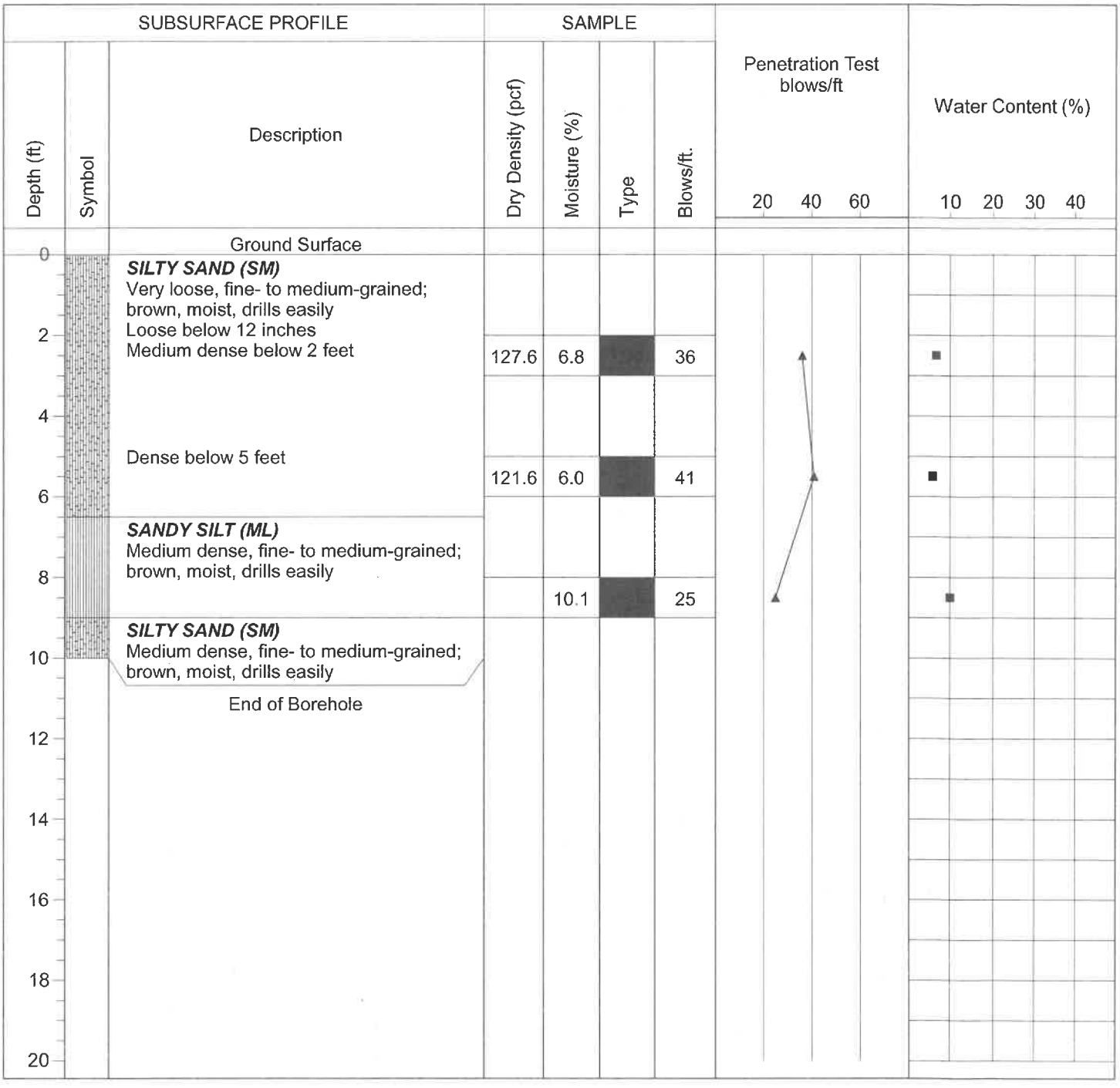
Location: 1100 Citadel Street, Bakersfield, California

Logged By: Erick Escobar

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 8-15-22

Drill Rig: CME 45C

Krazan and Associates

Hole Size: 4½ Inches

Driller: Eddie Tapia

Elevation: 10 Feet

Sheet: 1 of 1

Log of Boring B3

Project: MLK Elementary School Welness Center and Parent Center

Project No: 022-22124

Client: Bakersfield City School District

Figure No.: A-3

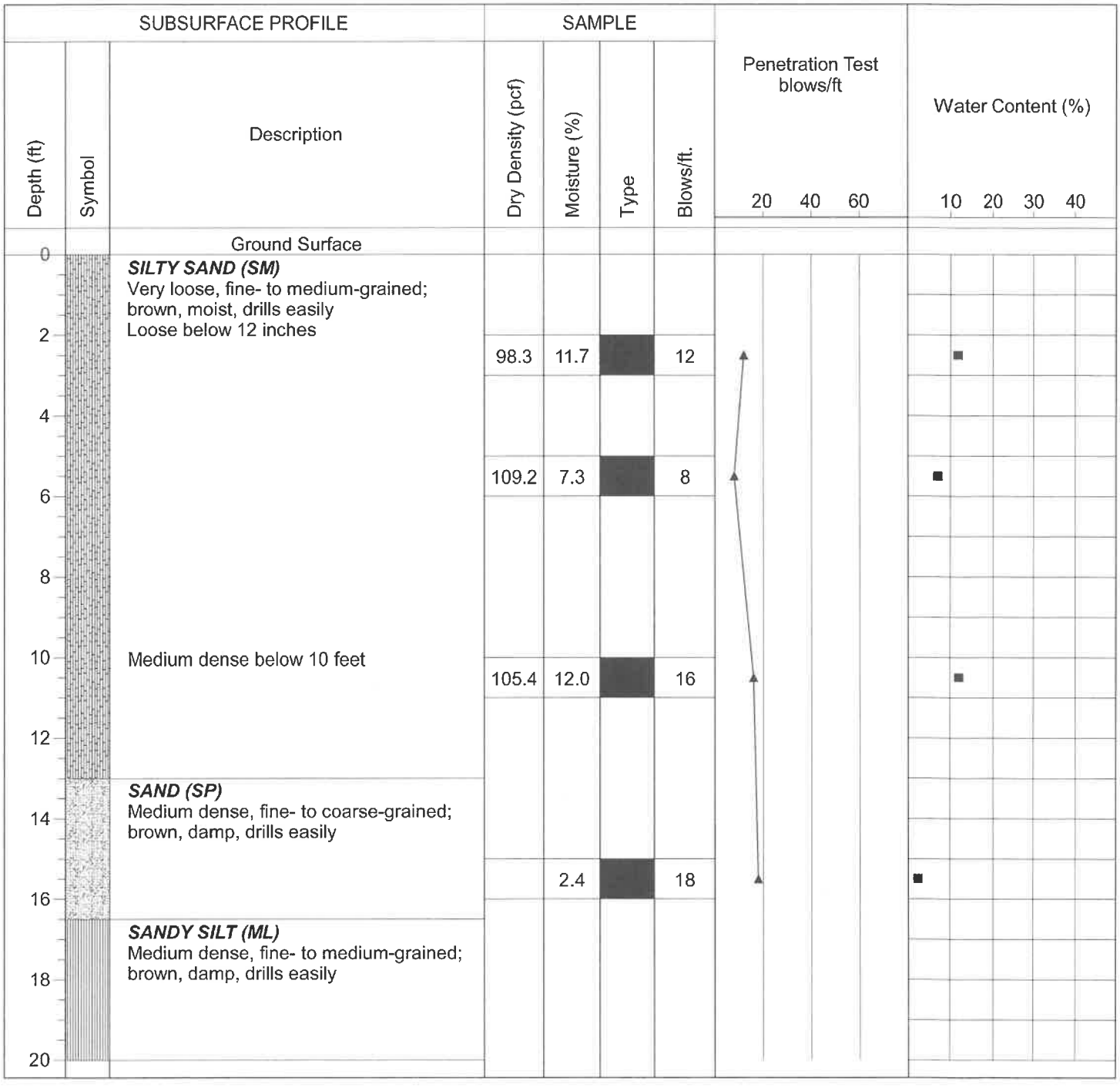
Location: 1100 Citadel Street, Bakersfield, California

Logged By: Erick Escobar

Depth to Water>

Initial: None

At Completion: None



Drill Method: Solid Flight

Drill Date: 8-15-22

Drill Rig: CME 45C

Krazan and Associates

Hole Size: 4½ Inches

Driller: Eddie Tapia

Elevation: 20 Feet

Log of Boring B4

Project: MLK Elementary School Welness Center and Parent Center

Project No: 022-22124

Client: Bakersfield City School District

Figure No.: A-4

Location: 1100 Citadel Street, Bakersfield, California

Logged By: Erick Escobar

Depth to Water>

Initial: None

At Completion: None

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0		Ground Surface				
0		***SILTY SAND (SM)*** Very loose, fine- to medium-grained; brown, moist, drills easily Loose with thin lenses of SILTY SAND/SANDY SILT below 12 inches				
2			93.3	22.2		9
4						
6			108.1	8.5		9
8						
10		End of Borehole				
12						
14						
16						
18						
20						

Penetration Test blows/ft: 20 40 60

Water Content (%): 10 20 30 40

Drill Method: Solid Flight

Drill Date: 8-15-22

Drill Rig: CME 45C

Krazan and Associates

Hole Size: 4½ Inches

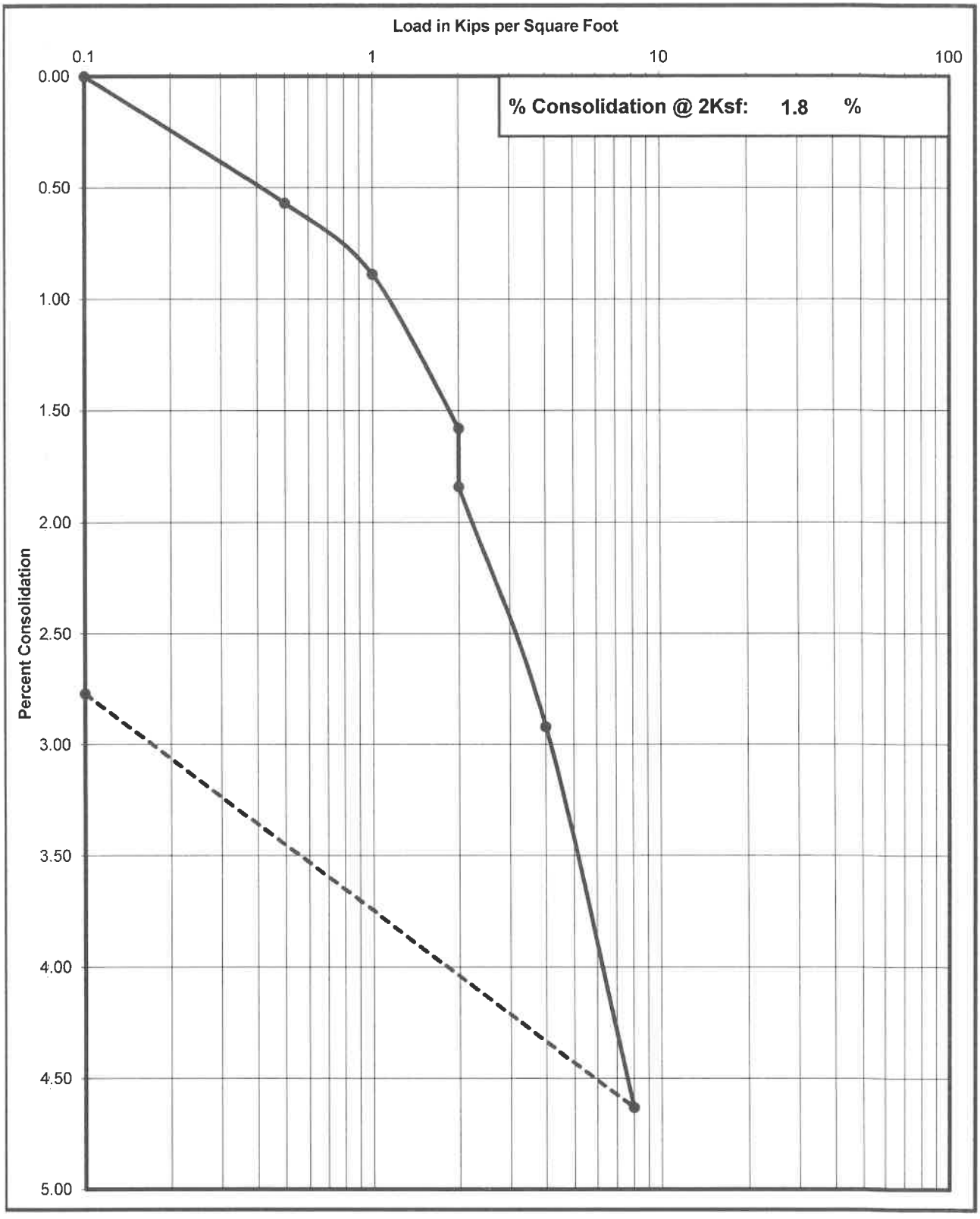
Driller: Eddie Tapia

Elevation: 10 Feet

Sheet: 1 of 1

Consolidation Test

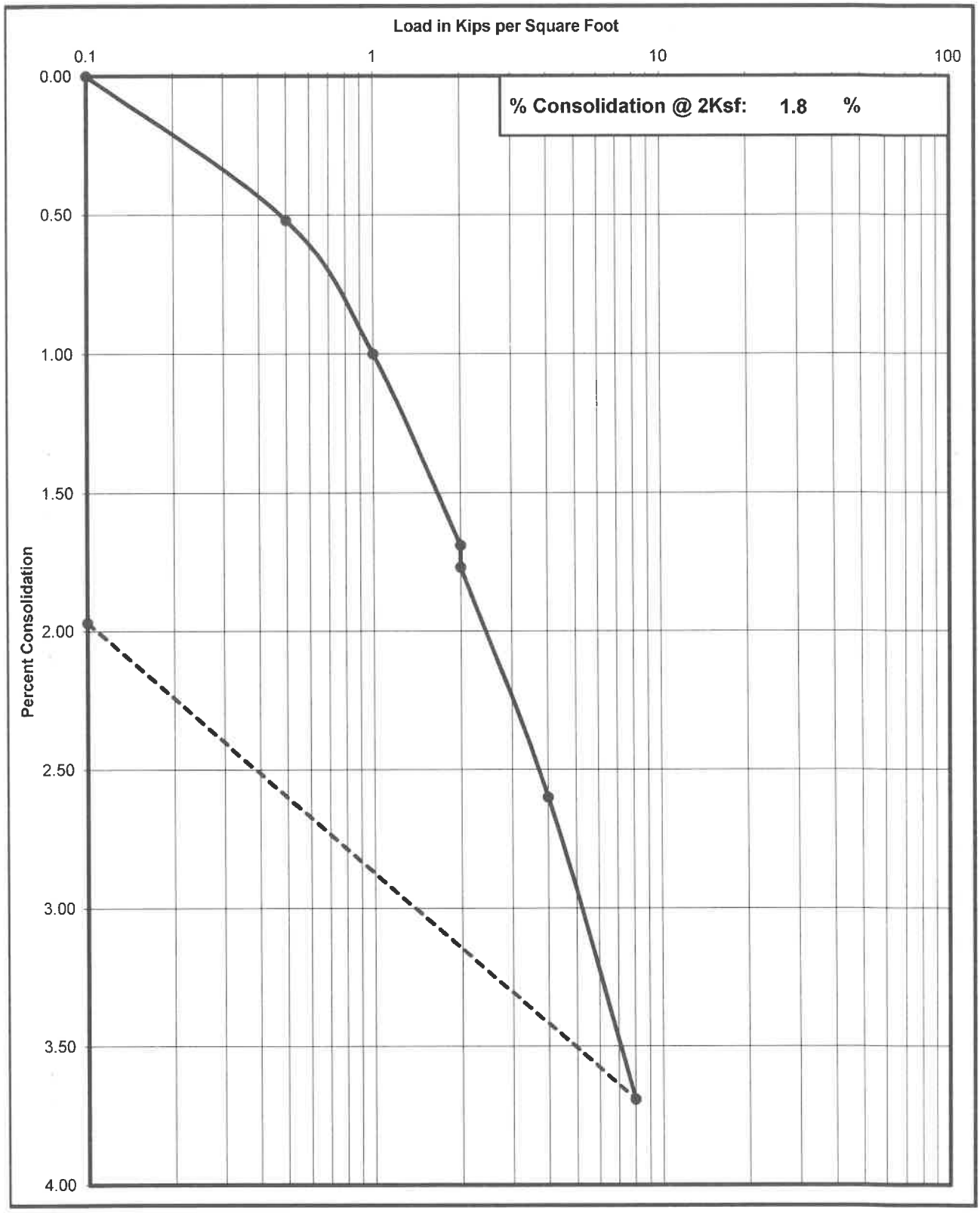
Project No	Boring No. & Depth	Date	Soil Classification
022-22124	B1 @ 2-3'	8/29/2022	SM



Krazan Testing Laboratory

Consolidation Test

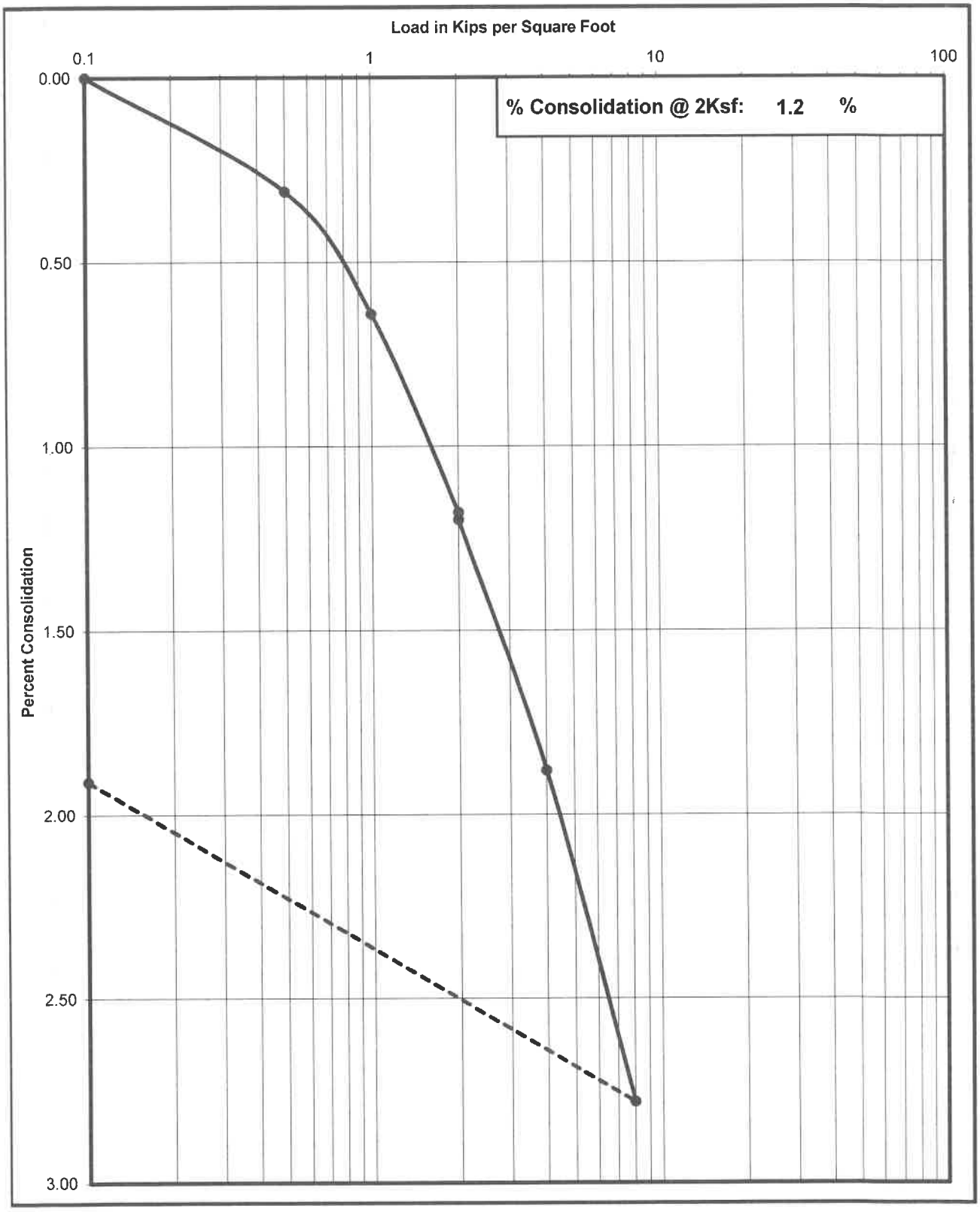
Project No	Boring No. & Depth	Date	Soil Classification
022-22124	B3 @ 2-3'	8/29/2022	SM



Krazan Testing Laboratory

Consolidation Test

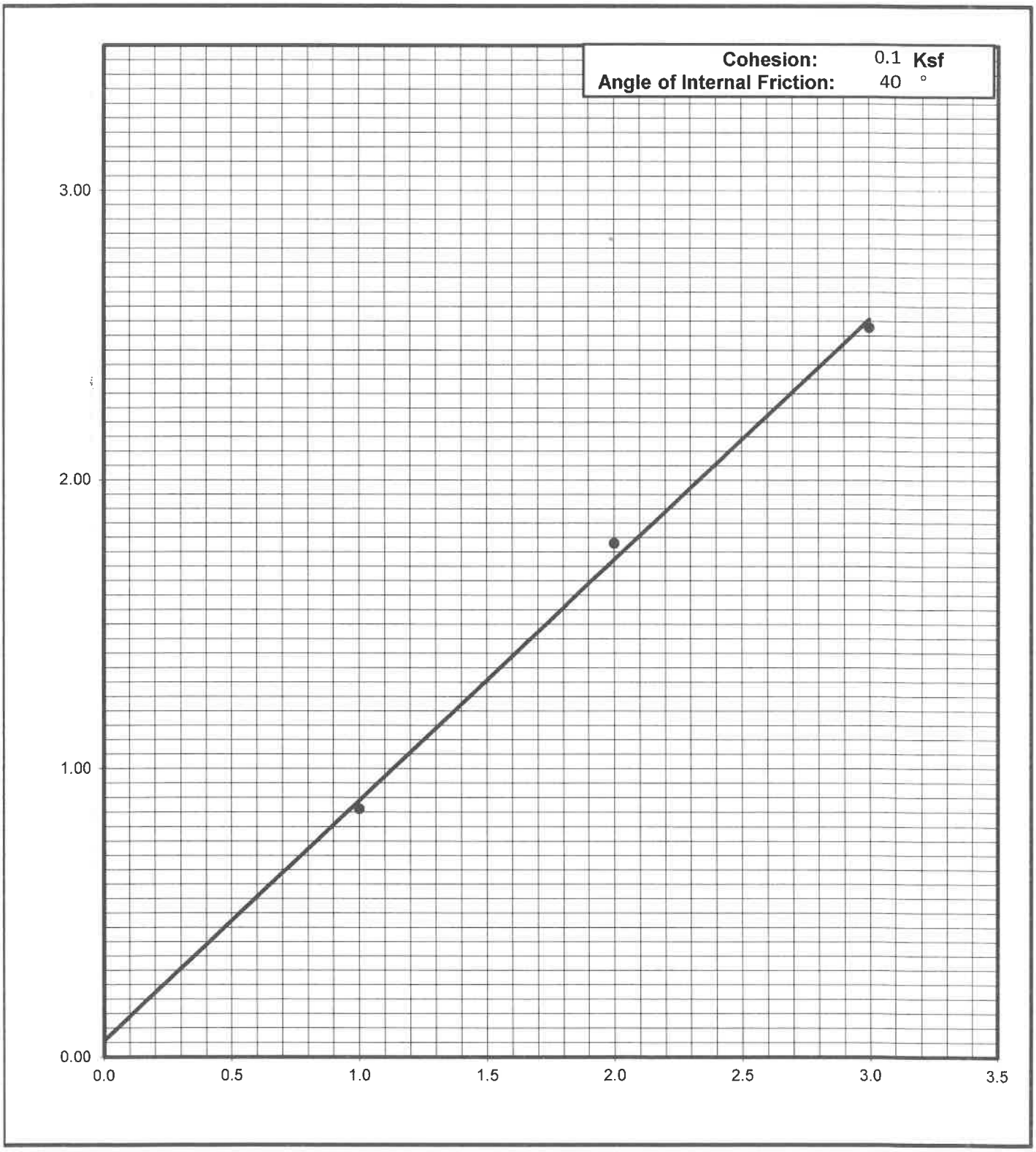
Project No	Boring No. & Depth	Date	Soil Classification
022-22124	B3 @ 5-6'	8/29/2022	SM



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

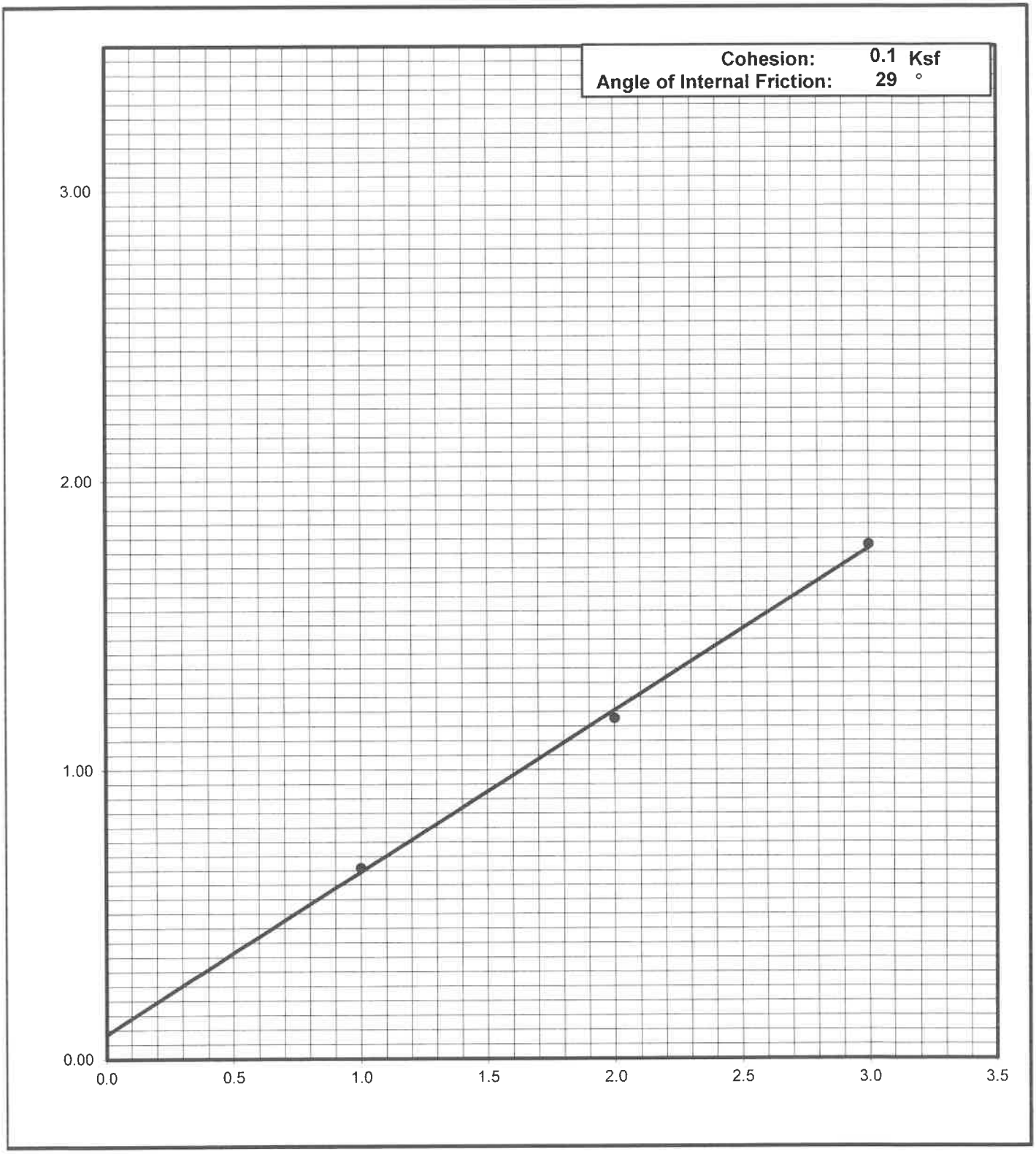
Project Number	Boring No. & Depth	Soil Type	Date
022-22124	B2 @ 2-3'	SM	8/29/2022



Krazan Testing Laboratory

Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

Project Number	Boring No. & Depth	Soil Type	Date
022-22124	B4 @ 2-3'	SM/ML	8/29/2022



Krazan Testing Laboratory

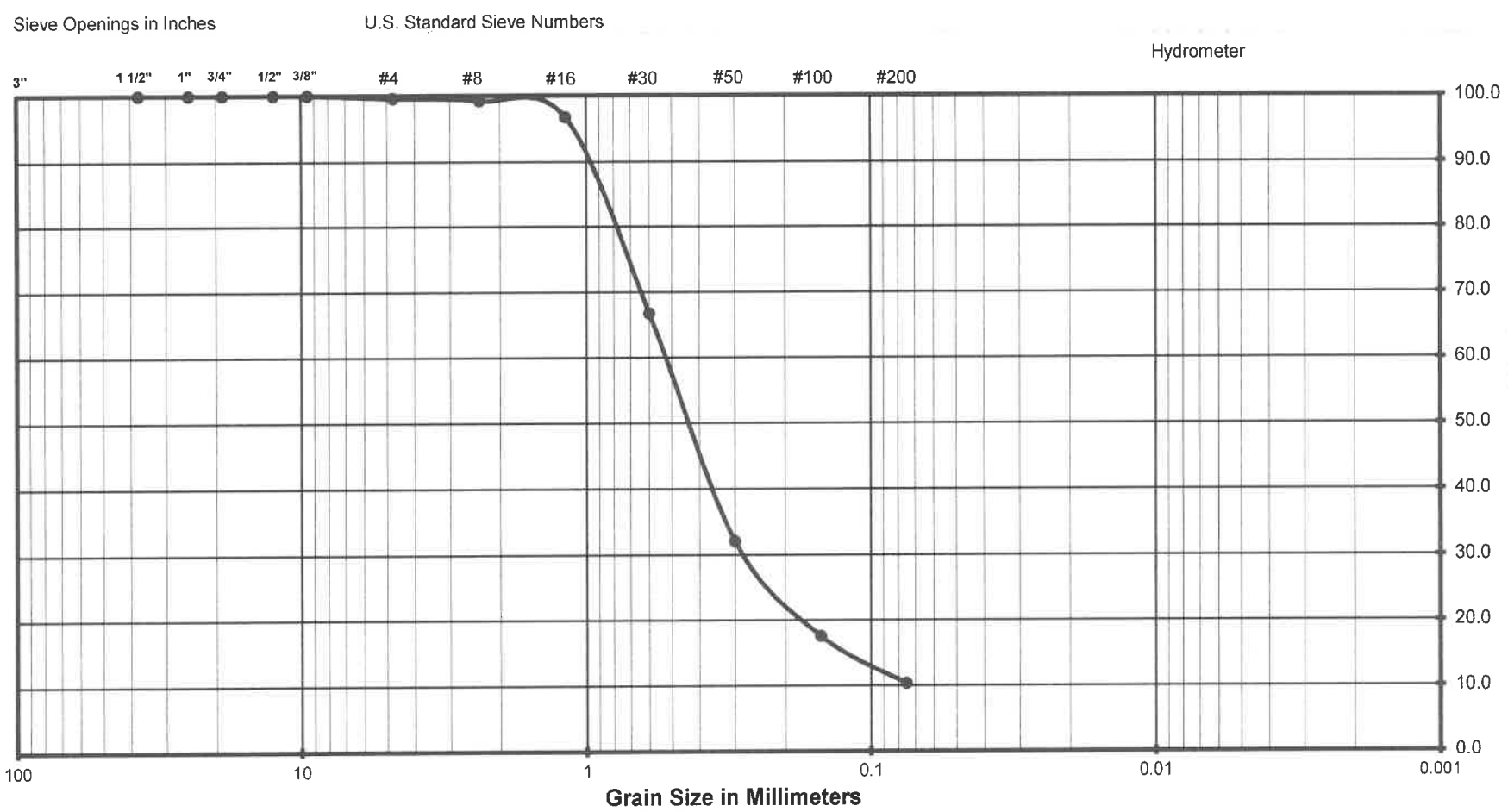
Grain Size Analysis

(Unified Soils Classification)

Project Name	MLK Elementary School Wellness Center
Project Number	022-22124
Soil Classification	SM
Sample Number	B1 @ 2-3'

Krazan Testing Laboratory

Grain Size Analysis

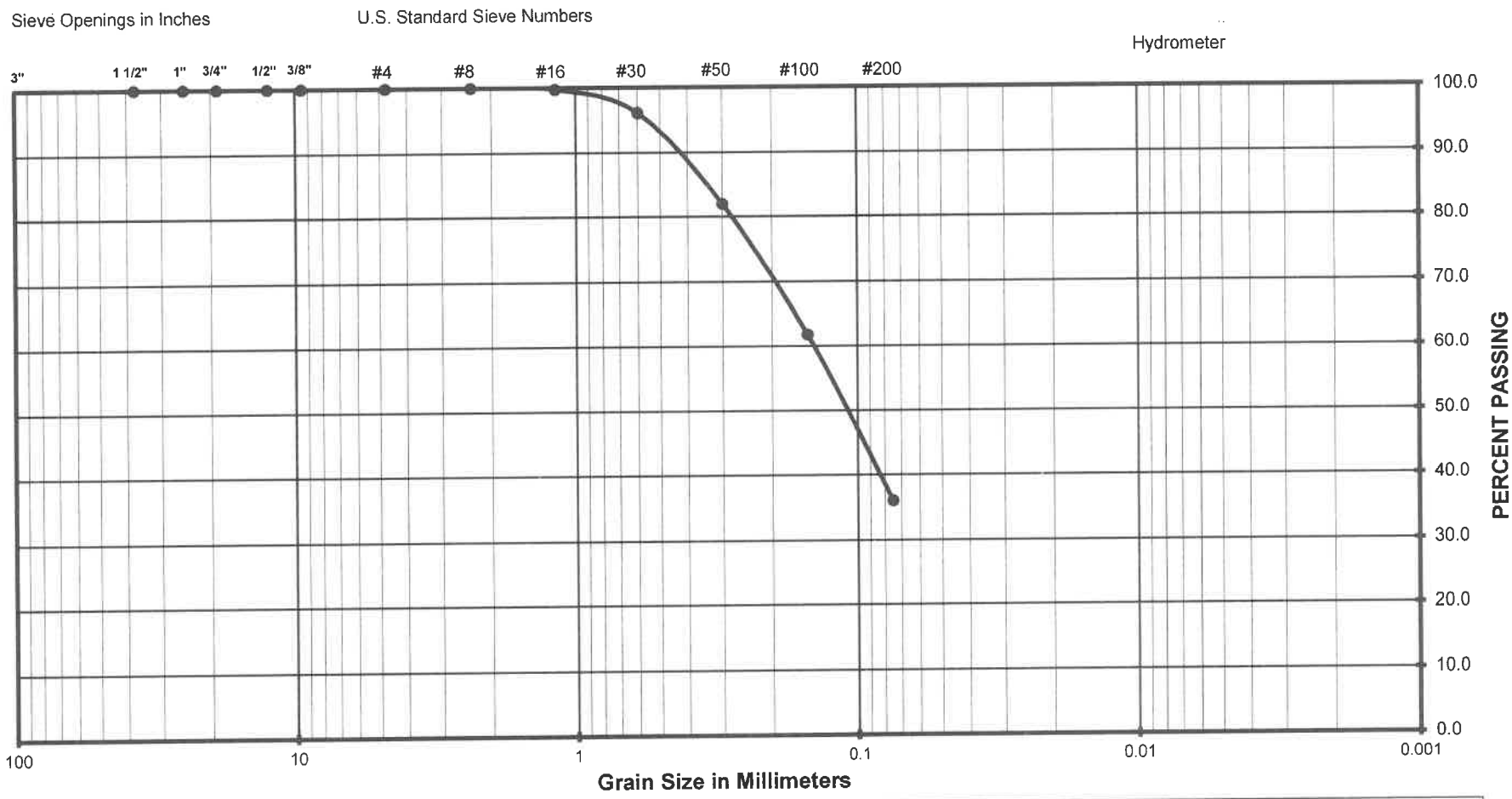


(Unified Soils Classification)

Project Name	MLK Elementary School Wellness Center
Project Number	022-22124
Soil Classification	SM/SP
Sample Number	B1 @ 25-26'

Krazan Testing Laboratory

Grain Size Analysis



(Unified Soils Classification)

Project Name	MLK Elementary School Wellness Center
Project Number	022-22124
Soil Classification	SM
Sample Number	B3 @ 2-3'

Krazan Testing Laboratory

APPENDIX B

EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including but not limited to the furnishing of all labor, tools, and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans, and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Inc., hereinafter known as the Soils Engineer and/or Testing Agency. Attainment of design grades when achieved shall be certified by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to a density not less than 90 percent relative compaction based on ASTM Test Method D1557 or CAL-216, as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be as determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the soil report.

The Contractor shall make his own interpretation of the data contained in said report, and the Contractor shall not be relieved of liability under the Contract documents for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or windblown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing and the preparations of foundation materials for receiving fill.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter, and all other matter determined by the Soils Engineer to be deleterious or otherwise unsuitable. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent which would permit removal of all roots larger than 1 inch. Tree roots removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill of tree root excavations should not be permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas which are to receive fill materials shall not be permitted.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill, building or slab loads shall be prepared as outlined above, excavated/scarified to a depth of 12 inches, moisture-conditioned as necessary, and compacted to 90 percent relative compaction.

Loose soil areas, areas of uncertified fill, and/or areas of disturbed soils shall be moisture-conditioned as necessary and recompacted to 90 percent relative compaction. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas which are to receive fill materials shall be approved by the Soils Engineer prior to the placement of any of the fill material.

EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over-excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. However, compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer.

Both cut and fill areas shall be surface-compacted to the satisfaction of the Soils Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill are as specified.

APPENDIX C

PAVEMENT SPECIFICATIONS

1. DEFINITIONS - The term "pavement" shall include asphaltic concrete surfacing, untreated aggregate base, and aggregate subbase. The term "subgrade" is that portion of the area on which surfacing, base, or subbase is to be placed.

The term "Standard Specifications": hereinafter referred to is the 2010 Standard Specifications of the State of California, Department of Transportation, and the "Materials Manual" is the Materials Manual of Testing and Control Procedures, State of California, Department of Public Works, Division of Highways. The term "relative compaction" refers to the field density expressed as a percentage of the maximum laboratory density as defined in the applicable tests outlined in the Materials Manual.

2. SCOPE OF WORK - This portion of the work shall include all labor, materials, tools, and equipment necessary for, and reasonably incidental to the completion of the pavement shown on the plans and as herein specified, except work specifically noted as "Work Not Included."

3. PREPARATION OF THE SUBGRADE - The Contractor shall prepare the surface of the various subgrades receiving subsequent pavement courses to the lines, grades, and dimensions given on the plans. The upper 12 inches of the soil subgrade beneath the pavement section shall be compacted to a minimum relative compaction of 90 percent. The finished subgrades shall be tested and approved by the Soils Engineer prior to the placement of additional pavement courses.

4. UNTREATED AGGREGATE BASE - The aggregate base material shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate base material shall conform to the requirements of Section 26 of the Standard Specifications for Class 2 material, 1½ inches maximum size. The aggregate base material shall be spread and compacted in accordance with Section 26 of the Standard Specifications. The aggregate base material shall be spread in layers not exceeding 6 inches and each layer of aggregate material course shall be tested and approved by the Soils Engineer prior to the placement of successive layers. The aggregate base material shall be compacted to a minimum relative compaction of 95 percent.

5. AGGREGATE SUBBASE - The aggregate subbase shall be spread and compacted on the prepared subgrade in conformity with the lines, grades, and dimensions shown on the plans. The aggregate subbase material shall conform to the requirements of Section 25 of the Standard Specifications for Class 2 material. The aggregate subbase material shall be compacted to a minimum relative compaction of 95 percent, and it shall be spread and compacted in accordance with Section 25 of the Standard Specifications. Each layer of aggregate subbase shall be tested and approved by the Soils Engineer prior to the placement of successive layers.

6. ASPHALTIC CONCRETE SURFACING - Asphaltic concrete surfacing shall consist of a mixture of mineral aggregate and paving grade asphalt, mixed at a central mixing plant and spread and compacted on a prepared base in conformity with the lines, grades and dimensions shown on the plans. The viscosity grade of the asphalt shall be PG 64-10. The mineral aggregate shall be Type B, ½ inch maximum size, medium grading and shall conform to the requirements set forth in Section 39 of the Standard Specifications. The drying, proportioning and mixing of the materials shall conform to Section 39.

The prime coat, spreading and compacting equipment and spreading and compacting mixture shall conform to the applicable chapters of Section 39, with the exception that no surface course shall be placed when the atmospheric temperature is below 50° F. The surfacing shall be rolled with a combination of steel wheel and pneumatic rollers, as described in Section 39-6. The surface course shall be placed with an approved self-propelled mechanical spreading and finishing machine.

7. FOG SEAL COAT - The fog seal (mixing type asphaltic emulsion) shall conform to and be applied in accordance with the requirements of Section 37.

LIQUEFACTION ANALYSIS

MLK Elementary School - Bakersfield

Hole No.=B1 Water Depth=22 ft

Magnitude=7.91
Acceleration=0.491g

****

LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: H:\Liquefy5\02222124B1.liq
Title: MLK Elementary School - Bakersfield
Subtitle: Boring B1
Surface Elev.=
Hole No.=B1
Depth of Hole= 50.00 ft
Water Table during Earthquake= 22.00 ft
Water Table during In-Situ Testing= 50.00 ft
Max. Acceleration= 0.49 g
Earthquake Magnitude= 7.91

Input Data:

Surface Elev.=
Hole No.=B1
Depth of Hole=50.00 ft
Water Table during Earthquake= 22.00 ft
Water Table during In-Situ Testing= 50.00 ft
Max. Acceleration=0.49 g
Earthquake Magnitude=7.91
No-Liquefiable Soils: Based on Analysis
1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Modify Stark/Olson
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1.3
Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	22.00	141.00	38.00
4.00	50.00	133.00	37.00
8.00	11.00	106.00	11.00
13.00	12.00	103.00	10.00
18.00	12.00	100.00	10.00
23.00	28.00	105.00	10.00
28.00	28.00	115.00	10.00
33.00	23.00	129.00	47.00
38.00	35.00	111.00	9.00
43.00	34.00	117.00	10.00
47.00	30.00	118.00	70.00
50.00	30.00	118.00	70.00

Output Results:

Settlement of Saturated Sands=0.64 in.
Settlement of Unsaturated Sands=1.33 in.
Total Settlement of Saturated and Unsaturated Sands=1.97 in.
Differential Settlement=0.985 to 1.300 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	in.	S_dry S_all in.
0.00	1.74	0.41	5.00	0.64	1.33	1.97
0.05	1.74	0.41	5.00	0.64	1.33	1.97
0.10	1.74	0.41	5.00	0.64	1.33	1.97
0.15	1.74	0.41	5.00	0.64	1.33	1.97
0.20	1.74	0.41	5.00	0.64	1.33	1.97
0.25	1.74	0.41	5.00	0.64	1.33	1.97
0.30	1.74	0.41	5.00	0.64	1.33	1.97
0.35	1.74	0.41	5.00	0.64	1.33	1.97
0.40	1.74	0.41	5.00	0.64	1.33	1.97
0.45	1.74	0.41	5.00	0.64	1.33	1.97
0.50	1.74	0.41	5.00	0.64	1.33	1.97
0.55	1.74	0.41	5.00	0.64	1.33	1.97
0.60	1.74	0.41	5.00	0.64	1.33	1.97
0.65	1.74	0.41	5.00	0.64	1.33	1.97
0.70	1.74	0.41	5.00	0.64	1.33	1.97
0.75	1.74	0.41	5.00	0.64	1.33	1.97
0.80	1.74	0.41	5.00	0.64	1.33	1.97
0.85	1.74	0.41	5.00	0.64	1.33	1.97
0.90	1.74	0.41	5.00	0.64	1.33	1.97
0.95	1.74	0.41	5.00	0.64	1.33	1.97
1.00	1.74	0.41	5.00	0.64	1.33	1.97
1.05	1.74	0.41	5.00	0.64	1.33	1.97
1.10	1.74	0.41	5.00	0.64	1.33	1.97
1.15	1.74	0.41	5.00	0.64	1.33	1.97
1.20	1.74	0.41	5.00	0.64	1.33	1.97
1.25	1.74	0.41	5.00	0.64	1.33	1.97
1.30	1.74	0.41	5.00	0.64	1.33	1.97
1.35	1.74	0.41	5.00	0.64	1.33	1.97
1.40	1.74	0.41	5.00	0.64	1.33	1.97
1.45	1.74	0.41	5.00	0.64	1.33	1.97
1.50	1.74	0.41	5.00	0.64	1.33	1.97
1.55	1.74	0.41	5.00	0.64	1.33	1.97
1.60	1.74	0.41	5.00	0.64	1.33	1.97
1.65	1.74	0.41	5.00	0.64	1.33	1.97
1.70	1.74	0.41	5.00	0.64	1.33	1.97
1.75	1.74	0.41	5.00	0.64	1.33	1.97
1.80	1.74	0.41	5.00	0.64	1.33	1.97
1.85	1.74	0.41	5.00	0.64	1.33	1.97
1.90	1.74	0.41	5.00	0.64	1.33	1.97
1.95	1.74	0.41	5.00	0.64	1.33	1.97
2.00	1.74	0.41	5.00	0.64	1.33	1.97
2.05	1.74	0.41	5.00	0.64	1.33	1.97
2.10	1.74	0.41	5.00	0.64	1.33	1.97
2.15	1.74	0.41	5.00	0.64	1.33	1.97
2.20	1.74	0.41	5.00	0.64	1.33	1.97
2.25	1.74	0.41	5.00	0.64	1.33	1.97
2.30	1.74	0.41	5.00	0.64	1.33	1.97
2.35	1.74	0.41	5.00	0.64	1.33	1.97
2.40	1.74	0.41	5.00	0.64	1.33	1.97
2.45	1.74	0.41	5.00	0.64	1.33	1.97
2.50	1.74	0.41	5.00	0.64	1.33	1.97
2.55	1.74	0.41	5.00	0.64	1.33	1.97
2.60	1.74	0.41	5.00	0.64	1.33	1.97
2.65	1.74	0.41	5.00	0.64	1.33	1.97
2.70	1.74	0.41	5.00	0.64	1.33	1.97
2.75	1.74	0.41	5.00	0.64	1.33	1.97

2.80	1.74	0.41	5.00	0.64	1.33	1.97
2.85	1.74	0.41	5.00	0.64	1.33	1.97
2.90	1.74	0.41	5.00	0.64	1.33	1.97
2.95	1.74	0.41	5.00	0.64	1.33	1.97
3.00	1.74	0.41	5.00	0.64	1.33	1.97
3.05	1.74	0.41	5.00	0.64	1.33	1.97
3.10	1.74	0.41	5.00	0.64	1.33	1.97
3.15	1.74	0.41	5.00	0.64	1.33	1.97
3.20	1.74	0.41	5.00	0.64	1.33	1.96
3.25	1.74	0.41	5.00	0.64	1.33	1.96
3.30	1.74	0.41	5.00	0.64	1.33	1.96
3.35	1.74	0.41	5.00	0.64	1.33	1.96
3.40	1.74	0.41	5.00	0.64	1.33	1.96
3.45	1.74	0.41	5.00	0.64	1.33	1.96
3.50	1.74	0.41	5.00	0.64	1.33	1.96
3.55	1.74	0.41	5.00	0.64	1.33	1.96
3.60	1.74	0.41	5.00	0.64	1.33	1.96
3.65	1.74	0.41	5.00	0.64	1.33	1.96
3.70	1.74	0.41	5.00	0.64	1.33	1.96
3.75	1.74	0.41	5.00	0.64	1.33	1.96
3.80	1.74	0.41	5.00	0.64	1.33	1.96
3.85	1.74	0.41	5.00	0.64	1.33	1.96
3.90	1.74	0.41	5.00	0.64	1.33	1.96
3.95	1.74	0.41	5.00	0.64	1.33	1.96
4.00	1.74	0.41	5.00	0.64	1.33	1.96
4.05	1.74	0.41	5.00	0.64	1.33	1.96
4.10	1.74	0.41	5.00	0.64	1.33	1.96
4.15	1.74	0.41	5.00	0.64	1.33	1.96
4.20	1.74	0.41	5.00	0.64	1.33	1.96
4.25	1.74	0.41	5.00	0.64	1.33	1.96
4.30	1.74	0.41	5.00	0.64	1.32	1.96
4.35	1.74	0.41	5.00	0.64	1.32	1.96
4.40	1.74	0.41	5.00	0.64	1.32	1.96
4.45	1.74	0.41	5.00	0.64	1.32	1.96
4.50	1.74	0.41	5.00	0.64	1.32	1.96
4.55	1.74	0.41	5.00	0.64	1.32	1.96
4.60	1.74	0.41	5.00	0.64	1.32	1.96
4.65	1.74	0.41	5.00	0.64	1.32	1.96
4.70	1.74	0.41	5.00	0.64	1.32	1.96
4.75	1.74	0.41	5.00	0.64	1.32	1.96
4.80	1.74	0.41	5.00	0.64	1.32	1.96
4.85	1.74	0.41	5.00	0.64	1.32	1.96
4.90	1.74	0.41	5.00	0.64	1.32	1.96
4.95	1.74	0.41	5.00	0.64	1.32	1.96
5.00	1.74	0.41	5.00	0.64	1.32	1.96
5.05	1.74	0.41	5.00	0.64	1.32	1.96
5.10	1.74	0.41	5.00	0.64	1.32	1.96
5.15	1.74	0.41	5.00	0.64	1.32	1.96
5.20	1.74	0.41	5.00	0.64	1.32	1.96
5.25	1.74	0.41	5.00	0.64	1.32	1.96
5.30	1.74	0.41	5.00	0.64	1.32	1.96
5.35	1.74	0.41	5.00	0.64	1.32	1.96
5.40	1.74	0.41	5.00	0.64	1.32	1.96
5.45	1.74	0.41	5.00	0.64	1.32	1.96
5.50	1.74	0.41	5.00	0.64	1.32	1.96
5.55	1.74	0.41	5.00	0.64	1.32	1.96
5.60	1.74	0.41	5.00	0.64	1.32	1.96
5.65	1.74	0.41	5.00	0.64	1.32	1.96
5.70	1.74	0.41	5.00	0.64	1.32	1.96
5.75	1.74	0.41	5.00	0.64	1.32	1.96

5.80	1.74	0.41	5.00	0.64	1.32	1.96
5.85	1.74	0.41	5.00	0.64	1.32	1.96
5.90	1.74	0.41	5.00	0.64	1.32	1.96
5.95	1.74	0.41	5.00	0.64	1.32	1.96
6.00	1.74	0.41	5.00	0.64	1.32	1.96
6.05	1.74	0.41	5.00	0.64	1.32	1.96
6.10	1.74	0.41	5.00	0.64	1.32	1.96
6.15	1.74	0.41	5.00	0.64	1.32	1.96
6.20	1.74	0.41	5.00	0.64	1.32	1.96
6.25	1.74	0.41	5.00	0.64	1.32	1.96
6.30	1.74	0.41	5.00	0.64	1.32	1.96
6.35	1.74	0.41	5.00	0.64	1.32	1.96
6.40	1.74	0.41	5.00	0.64	1.32	1.96
6.45	1.74	0.41	5.00	0.64	1.32	1.96
6.50	1.74	0.41	5.00	0.64	1.32	1.96
6.55	1.74	0.41	5.00	0.64	1.32	1.96
6.60	1.74	0.41	5.00	0.64	1.32	1.96
6.65	1.74	0.41	5.00	0.64	1.32	1.96
6.70	1.74	0.41	5.00	0.64	1.32	1.96
6.75	1.74	0.41	5.00	0.64	1.32	1.96
6.80	1.74	0.41	5.00	0.64	1.32	1.96
6.85	1.74	0.41	5.00	0.64	1.32	1.96
6.90	1.74	0.41	5.00	0.64	1.32	1.96
6.95	1.74	0.41	5.00	0.64	1.32	1.95
7.00	1.74	0.41	5.00	0.64	1.32	1.95
7.05	1.74	0.41	5.00	0.64	1.32	1.95
7.10	1.74	0.41	5.00	0.64	1.32	1.95
7.15	0.40	0.41	5.00	0.64	1.32	1.95
7.20	0.33	0.41	5.00	0.64	1.31	1.95
7.25	0.31	0.41	5.00	0.64	1.31	1.95
7.30	0.29	0.41	5.00	0.64	1.31	1.95
7.35	0.27	0.41	5.00	0.64	1.31	1.95
7.40	0.26	0.41	5.00	0.64	1.31	1.95
7.45	0.25	0.41	5.00	0.64	1.31	1.95
7.50	0.24	0.41	5.00	0.64	1.31	1.95
7.55	0.23	0.41	5.00	0.64	1.31	1.95
7.60	0.22	0.41	5.00	0.64	1.31	1.95
7.65	0.21	0.41	5.00	0.64	1.31	1.94
7.70	0.20	0.41	5.00	0.64	1.30	1.94
7.75	0.19	0.41	5.00	0.64	1.30	1.94
7.80	0.18	0.41	5.00	0.64	1.30	1.94
7.85	0.17	0.41	5.00	0.64	1.30	1.93
7.90	0.17	0.41	5.00	0.64	1.29	1.93
7.95	0.16	0.41	5.00	0.64	1.29	1.92
8.00	0.15	0.41	5.00	0.64	1.28	1.92
8.05	0.15	0.41	5.00	0.64	1.27	1.91
8.10	0.15	0.41	5.00	0.64	1.26	1.90
8.15	0.15	0.41	5.00	0.64	1.25	1.88
8.20	0.15	0.41	5.00	0.64	1.24	1.87
8.25	0.17	0.41	5.00	0.64	1.22	1.86
8.30	0.17	0.41	5.00	0.64	1.22	1.85
8.35	0.17	0.41	5.00	0.64	1.21	1.85
8.40	0.17	0.41	5.00	0.64	1.20	1.84
8.45	0.17	0.41	5.00	0.64	1.20	1.83
8.50	0.17	0.41	5.00	0.64	1.19	1.83
8.55	0.17	0.41	5.00	0.64	1.18	1.82
8.60	0.17	0.41	5.00	0.64	1.17	1.81
8.65	0.17	0.41	5.00	0.64	1.16	1.80
8.70	0.17	0.41	5.00	0.64	1.16	1.79
8.75	0.17	0.41	5.00	0.64	1.15	1.78

8.80	0.17	0.41	5.00	0.64	1.14	1.77
8.85	0.17	0.41	5.00	0.64	1.13	1.76
8.90	0.17	0.41	5.00	0.64	1.12	1.75
8.95	0.17	0.41	5.00	0.64	1.10	1.74
9.00	0.17	0.41	5.00	0.64	1.09	1.73
9.05	0.17	0.41	5.00	0.64	1.08	1.72
9.10	0.17	0.41	5.00	0.64	1.07	1.71
9.15	0.17	0.41	5.00	0.64	1.07	1.70
9.20	0.17	0.41	5.00	0.64	1.07	1.70
9.25	0.16	0.41	5.00	0.64	1.06	1.70
9.30	0.16	0.41	5.00	0.64	1.06	1.70
9.35	0.16	0.41	5.00	0.64	1.06	1.70
9.40	0.16	0.41	5.00	0.64	1.06	1.70
9.45	0.16	0.41	5.00	0.64	1.06	1.69
9.50	0.16	0.41	5.00	0.64	1.05	1.69
9.55	0.16	0.41	5.00	0.64	1.05	1.69
9.60	0.16	0.41	5.00	0.64	1.05	1.69
9.65	0.16	0.41	5.00	0.64	1.05	1.69
9.70	0.16	0.41	5.00	0.64	1.05	1.68
9.75	0.16	0.41	5.00	0.64	1.04	1.68
9.80	0.16	0.41	5.00	0.64	1.04	1.68
9.85	0.16	0.41	5.00	0.64	1.04	1.68
9.90	0.16	0.41	5.00	0.64	1.04	1.68
9.95	0.16	0.41	5.00	0.64	1.04	1.67
10.00	0.16	0.41	5.00	0.64	1.03	1.67
10.05	0.16	0.41	5.00	0.64	1.03	1.67
10.10	0.16	0.41	5.00	0.64	1.03	1.67
10.15	0.16	0.41	5.00	0.64	1.03	1.67
10.20	0.16	0.41	5.00	0.64	1.03	1.66
10.25	0.16	0.40	5.00	0.64	1.02	1.66
10.30	0.16	0.40	5.00	0.64	1.02	1.66
10.35	0.16	0.40	5.00	0.64	1.02	1.66
10.40	0.16	0.40	5.00	0.64	1.02	1.66
10.45	0.16	0.40	5.00	0.64	1.02	1.65
10.50	0.16	0.40	5.00	0.64	1.01	1.65
10.55	0.16	0.40	5.00	0.64	1.01	1.65
10.60	0.16	0.40	5.00	0.64	1.01	1.65
10.65	0.16	0.40	5.00	0.64	1.01	1.64
10.70	0.16	0.40	5.00	0.64	1.00	1.64
10.75	0.16	0.40	5.00	0.64	1.00	1.64
10.80	0.16	0.40	5.00	0.64	1.00	1.64
10.85	0.16	0.40	5.00	0.64	1.00	1.63
10.90	0.16	0.40	5.00	0.64	0.99	1.63
10.95	0.16	0.40	5.00	0.64	0.99	1.63
11.00	0.16	0.40	5.00	0.64	0.99	1.63
11.05	0.16	0.40	5.00	0.64	0.99	1.62
11.10	0.16	0.40	5.00	0.64	0.98	1.62
11.15	0.16	0.40	5.00	0.64	0.98	1.62
11.20	0.16	0.40	5.00	0.64	0.98	1.62
11.25	0.16	0.40	5.00	0.64	0.98	1.61
11.30	0.16	0.40	5.00	0.64	0.97	1.61
11.35	0.16	0.40	5.00	0.64	0.97	1.61
11.40	0.16	0.40	5.00	0.64	0.97	1.61
11.45	0.16	0.40	5.00	0.64	0.96	1.60
11.50	0.16	0.40	5.00	0.64	0.96	1.60
11.55	0.16	0.40	5.00	0.64	0.96	1.60
11.60	0.16	0.40	5.00	0.64	0.96	1.59
11.65	0.16	0.40	5.00	0.64	0.95	1.59
11.70	0.16	0.40	5.00	0.64	0.95	1.59
11.75	0.16	0.40	5.00	0.64	0.95	1.58

11.80	0.16	0.40	5.00	0.64	0.94	1.58
11.85	0.16	0.40	5.00	0.64	0.94	1.58
11.90	0.15	0.40	5.00	0.64	0.94	1.58
11.95	0.15	0.40	5.00	0.64	0.93	1.57
12.00	0.15	0.40	5.00	0.64	0.93	1.57
12.05	0.15	0.40	5.00	0.64	0.93	1.57
12.10	0.15	0.40	5.00	0.64	0.93	1.56
12.15	0.15	0.40	5.00	0.64	0.92	1.56
12.20	0.15	0.40	5.00	0.64	0.92	1.56
12.25	0.15	0.40	5.00	0.64	0.92	1.55
12.30	0.15	0.40	5.00	0.64	0.91	1.55
12.35	0.15	0.40	5.00	0.64	0.91	1.55
12.40	0.15	0.40	5.00	0.64	0.91	1.54
12.45	0.15	0.40	5.00	0.64	0.90	1.54
12.50	0.15	0.40	5.00	0.64	0.90	1.54
12.55	0.15	0.40	5.00	0.64	0.90	1.53
12.60	0.15	0.40	5.00	0.64	0.89	1.53
12.65	0.15	0.40	5.00	0.64	0.89	1.53
12.70	0.15	0.40	5.00	0.64	0.88	1.52
12.75	0.15	0.40	5.00	0.64	0.88	1.52
12.80	0.15	0.40	5.00	0.64	0.88	1.51
12.85	0.15	0.40	5.00	0.64	0.87	1.51
12.90	0.15	0.40	5.00	0.64	0.87	1.51
12.95	0.15	0.40	5.00	0.64	0.87	1.50
13.00	0.15	0.40	5.00	0.64	0.86	1.50
13.05	0.15	0.40	5.00	0.64	0.86	1.50
13.10	0.15	0.40	5.00	0.64	0.85	1.49
13.15	0.15	0.40	5.00	0.64	0.85	1.49
13.20	0.15	0.40	5.00	0.64	0.85	1.48
13.25	0.15	0.40	5.00	0.64	0.84	1.48
13.30	0.15	0.40	5.00	0.64	0.84	1.48
13.35	0.15	0.40	5.00	0.64	0.83	1.47
13.40	0.15	0.40	5.00	0.64	0.83	1.47
13.45	0.15	0.40	5.00	0.64	0.83	1.46
13.50	0.15	0.40	5.00	0.64	0.82	1.46
13.55	0.15	0.40	5.00	0.64	0.82	1.45
13.60	0.15	0.40	5.00	0.64	0.81	1.45
13.65	0.15	0.40	5.00	0.64	0.81	1.45
13.70	0.15	0.40	5.00	0.64	0.80	1.44
13.75	0.15	0.40	5.00	0.64	0.80	1.44
13.80	0.15	0.40	5.00	0.64	0.79	1.43
13.85	0.15	0.40	5.00	0.64	0.79	1.43
13.90	0.15	0.40	5.00	0.64	0.79	1.42
13.95	0.15	0.40	5.00	0.64	0.78	1.42
14.00	0.15	0.40	5.00	0.64	0.78	1.41
14.05	0.15	0.40	5.00	0.64	0.77	1.41
14.10	0.15	0.40	5.00	0.64	0.77	1.40
14.15	0.15	0.40	5.00	0.64	0.76	1.40
14.20	0.15	0.40	5.00	0.64	0.76	1.39
14.25	0.15	0.40	5.00	0.64	0.75	1.39
14.30	0.15	0.40	5.00	0.64	0.75	1.38
14.35	0.15	0.40	5.00	0.64	0.74	1.38
14.40	0.15	0.40	5.00	0.64	0.74	1.37
14.45	0.15	0.40	5.00	0.64	0.73	1.37
14.50	0.15	0.40	5.00	0.64	0.73	1.36
14.55	0.15	0.40	5.00	0.64	0.72	1.36
14.60	0.14	0.40	5.00	0.64	0.71	1.35
14.65	0.14	0.40	5.00	0.64	0.71	1.35
14.70	0.14	0.40	5.00	0.64	0.70	1.34
14.75	0.14	0.40	5.00	0.64	0.70	1.34

14.80	0.16	0.40	5.00	0.64	0.69	1.33
14.85	0.16	0.40	5.00	0.64	0.69	1.33
14.90	0.16	0.40	5.00	0.64	0.68	1.32
14.95	0.16	0.40	5.00	0.64	0.68	1.32
15.00	0.16	0.40	5.00	0.64	0.67	1.31
15.05	0.16	0.40	5.00	0.64	0.67	1.31
15.10	0.16	0.40	5.00	0.64	0.67	1.30
15.15	0.16	0.40	5.00	0.64	0.66	1.30
15.20	0.16	0.40	5.00	0.64	0.66	1.29
15.25	0.16	0.40	5.00	0.64	0.65	1.29
15.30	0.16	0.40	5.00	0.64	0.65	1.29
15.35	0.16	0.40	5.00	0.64	0.64	1.28
15.40	0.16	0.40	5.00	0.64	0.64	1.28
15.45	0.16	0.40	5.00	0.64	0.63	1.27
15.50	0.16	0.40	5.00	0.64	0.63	1.27
15.55	0.16	0.40	5.00	0.64	0.62	1.26
15.60	0.16	0.40	5.00	0.64	0.62	1.26
15.65	0.16	0.40	5.00	0.64	0.61	1.25
15.70	0.16	0.40	5.00	0.64	0.61	1.25
15.75	0.16	0.40	5.00	0.64	0.60	1.24
15.80	0.16	0.40	5.00	0.64	0.60	1.24
15.85	0.16	0.40	5.00	0.64	0.59	1.23
15.90	0.16	0.40	5.00	0.64	0.59	1.23
15.95	0.15	0.40	5.00	0.64	0.58	1.22
16.00	0.15	0.40	5.00	0.64	0.58	1.21
16.05	0.15	0.40	5.00	0.64	0.57	1.21
16.10	0.15	0.40	5.00	0.64	0.57	1.20
16.15	0.15	0.40	5.00	0.64	0.56	1.20
16.20	0.15	0.40	5.00	0.64	0.55	1.19
16.25	0.15	0.40	5.00	0.64	0.55	1.19
16.30	0.15	0.40	5.00	0.64	0.54	1.18
16.35	0.15	0.40	5.00	0.64	0.54	1.18
16.40	0.15	0.40	5.00	0.64	0.53	1.17
16.45	0.15	0.40	5.00	0.64	0.53	1.16
16.50	0.15	0.40	5.00	0.64	0.52	1.16
16.55	0.15	0.40	5.00	0.64	0.51	1.15
16.60	0.15	0.40	5.00	0.64	0.51	1.15
16.65	0.15	0.40	5.00	0.64	0.50	1.14
16.70	0.15	0.40	5.00	0.64	0.50	1.13
16.75	0.15	0.40	5.00	0.64	0.49	1.13
16.80	0.15	0.40	5.00	0.64	0.48	1.12
16.85	0.15	0.40	5.00	0.64	0.48	1.11
16.90	0.15	0.40	5.00	0.64	0.47	1.11
16.95	0.15	0.40	5.00	0.64	0.46	1.10
17.00	0.15	0.40	5.00	0.64	0.46	1.09
17.05	0.15	0.40	5.00	0.64	0.45	1.09
17.10	0.15	0.40	5.00	0.64	0.44	1.08
17.15	0.15	0.40	5.00	0.64	0.44	1.07
17.20	0.15	0.40	5.00	0.64	0.43	1.07
17.25	0.15	0.40	5.00	0.64	0.42	1.06
17.30	0.15	0.40	5.00	0.64	0.42	1.05
17.35	0.15	0.40	5.00	0.64	0.41	1.05
17.40	0.15	0.40	5.00	0.64	0.40	1.04
17.45	0.15	0.40	5.00	0.64	0.39	1.03
17.50	0.15	0.40	5.00	0.64	0.39	1.02
17.55	0.15	0.40	5.00	0.64	0.38	1.02
17.60	0.15	0.40	5.00	0.64	0.37	1.01
17.65	0.15	0.40	5.00	0.64	0.36	1.00
17.70	0.15	0.40	5.00	0.64	0.36	1.00
17.75	0.15	0.40	5.00	0.64	0.35	0.99

17.80	0.15	0.40	5.00	0.64	0.34	0.98
17.85	0.15	0.40	5.00	0.64	0.33	0.97
17.90	0.15	0.40	5.00	0.64	0.33	0.96
17.95	0.15	0.40	5.00	0.64	0.32	0.96
18.00	0.15	0.40	5.00	0.64	0.31	0.95
18.05	0.15	0.40	5.00	0.64	0.30	0.94
18.10	0.15	0.40	5.00	0.64	0.29	0.93
18.15	0.15	0.40	5.00	0.64	0.29	0.92
18.20	0.15	0.40	5.00	0.64	0.28	0.92
18.25	0.16	0.40	5.00	0.64	0.27	0.91
18.30	0.16	0.40	5.00	0.64	0.26	0.90
18.35	0.16	0.40	5.00	0.64	0.26	0.90
18.40	0.16	0.40	5.00	0.64	0.25	0.89
18.45	0.16	0.40	5.00	0.64	0.24	0.88
18.50	0.16	0.40	5.00	0.64	0.24	0.88
18.55	0.17	0.40	5.00	0.64	0.23	0.87
18.60	0.17	0.40	5.00	0.64	0.23	0.86
18.65	0.17	0.40	5.00	0.64	0.22	0.86
18.70	0.17	0.40	5.00	0.64	0.21	0.85
18.75	0.17	0.40	5.00	0.64	0.21	0.85
18.80	0.17	0.40	5.00	0.64	0.20	0.84
18.85	0.17	0.40	5.00	0.64	0.20	0.84
18.90	0.18	0.40	5.00	0.64	0.19	0.83
18.95	0.18	0.40	5.00	0.64	0.19	0.83
19.00	0.18	0.40	5.00	0.64	0.18	0.82
19.05	0.18	0.40	5.00	0.64	0.18	0.82
19.10	0.18	0.40	5.00	0.64	0.17	0.81
19.15	0.18	0.40	5.00	0.64	0.17	0.81
19.20	0.19	0.40	5.00	0.64	0.16	0.80
19.25	0.19	0.40	5.00	0.64	0.16	0.80
19.30	0.19	0.40	5.00	0.64	0.15	0.79
19.35	0.19	0.40	5.00	0.64	0.15	0.79
19.40	0.19	0.40	5.00	0.64	0.15	0.78
19.45	0.19	0.40	5.00	0.64	0.14	0.78
19.50	0.20	0.40	5.00	0.64	0.14	0.78
19.55	0.20	0.40	5.00	0.64	0.13	0.77
19.60	0.20	0.40	5.00	0.64	0.13	0.77
19.65	0.20	0.40	5.00	0.64	0.13	0.76
19.70	0.20	0.40	5.00	0.64	0.12	0.76
19.75	0.20	0.40	5.00	0.64	0.12	0.76
19.80	0.21	0.40	5.00	0.64	0.11	0.75
19.85	0.21	0.40	5.00	0.64	0.11	0.75
19.90	0.21	0.40	5.00	0.64	0.11	0.75
19.95	0.21	0.40	5.00	0.64	0.10	0.74
20.00	0.21	0.40	5.00	0.64	0.10	0.74
20.05	0.22	0.40	5.00	0.64	0.10	0.73
20.10	0.22	0.40	5.00	0.64	0.09	0.73
20.15	0.22	0.40	5.00	0.64	0.09	0.73
20.20	0.22	0.40	5.00	0.64	0.09	0.72
20.25	0.22	0.40	5.00	0.64	0.08	0.72
20.30	0.22	0.40	5.00	0.64	0.08	0.72
20.35	0.23	0.40	5.00	0.64	0.08	0.72
20.40	0.23	0.40	5.00	0.64	0.07	0.71
20.45	0.23	0.40	5.00	0.64	0.07	0.71
20.50	0.23	0.40	5.00	0.64	0.07	0.71
20.55	0.23	0.40	5.00	0.64	0.07	0.70
20.60	0.24	0.39	5.00	0.64	0.06	0.70
20.65	0.24	0.39	5.00	0.64	0.06	0.70
20.70	0.24	0.39	5.00	0.64	0.06	0.70
20.75	0.24	0.39	5.00	0.64	0.05	0.69

20.80	0.24	0.39	5.00	0.64	0.05	0.69
20.85	0.25	0.39	5.00	0.64	0.05	0.69
20.90	0.25	0.39	5.00	0.64	0.05	0.68
20.95	0.25	0.39	5.00	0.64	0.04	0.68
21.00	0.25	0.39	5.00	0.64	0.04	0.68
21.05	0.26	0.39	5.00	0.64	0.04	0.68
21.10	0.26	0.39	5.00	0.64	0.04	0.67
21.15	0.26	0.39	5.00	0.64	0.03	0.67
21.20	0.26	0.39	5.00	0.64	0.03	0.67
21.25	0.27	0.39	5.00	0.64	0.03	0.67
21.30	0.27	0.39	5.00	0.64	0.03	0.66
21.35	0.27	0.39	5.00	0.64	0.02	0.66
21.40	0.27	0.39	5.00	0.64	0.02	0.66
21.45	0.28	0.39	5.00	0.64	0.02	0.66
21.50	0.28	0.39	5.00	0.64	0.02	0.66
21.55	0.28	0.39	5.00	0.64	0.02	0.65
21.60	0.28	0.39	5.00	0.64	0.01	0.65
21.65	0.29	0.39	5.00	0.64	0.01	0.65
21.70	0.29	0.39	5.00	0.64	0.01	0.65
21.75	0.29	0.39	5.00	0.64	0.01	0.64
21.80	0.30	0.39	5.00	0.64	0.00	0.64
21.85	0.30	0.39	5.00	0.64	0.00	0.64
21.90	0.30	0.39	5.00	0.64	0.00	0.64
21.95	0.31	0.39	5.00	0.64	0.00	0.64
22.00	0.31	0.39	5.00	0.64	0.00	0.64
22.05	0.32	0.39	0.80*	0.64	0.00	0.64
22.10	0.32	0.39	0.81*	0.63	0.00	0.63
22.15	0.32	0.39	0.82*	0.63	0.00	0.63
22.20	0.33	0.39	0.83*	0.62	0.00	0.62
22.25	0.34	0.40	0.85*	0.62	0.00	0.62
22.30	0.34	0.40	0.86*	0.61	0.00	0.61
22.35	0.35	0.40	0.88*	0.61	0.00	0.61
22.40	0.36	0.40	0.91*	0.60	0.00	0.60
22.45	0.37	0.40	0.94*	0.60	0.00	0.60
22.50	0.39	0.40	0.98*	0.60	0.00	0.60
22.55	0.42	0.40	1.06	0.59	0.00	0.59
22.60	1.74	0.40	4.38	0.59	0.00	0.59
22.65	1.74	0.40	4.37	0.59	0.00	0.59
22.70	1.74	0.40	4.37	0.59	0.00	0.59
22.75	1.74	0.40	4.36	0.59	0.00	0.59
22.80	1.74	0.40	4.36	0.59	0.00	0.59
22.85	1.74	0.40	4.35	0.59	0.00	0.59
22.90	1.74	0.40	4.35	0.59	0.00	0.59
22.95	1.74	0.40	4.35	0.59	0.00	0.59
23.00	1.74	0.40	4.34	0.59	0.00	0.59
23.05	1.74	0.40	4.34	0.59	0.00	0.59
23.10	1.74	0.40	4.33	0.59	0.00	0.59
23.15	1.74	0.40	4.33	0.59	0.00	0.59
23.20	1.74	0.40	4.32	0.59	0.00	0.59
23.25	1.74	0.40	4.32	0.59	0.00	0.59
23.30	1.74	0.40	4.31	0.59	0.00	0.59
23.35	1.74	0.40	4.31	0.59	0.00	0.59
23.40	1.74	0.41	4.30	0.59	0.00	0.59
23.45	1.74	0.41	4.30	0.59	0.00	0.59
23.50	1.74	0.41	4.30	0.59	0.00	0.59
23.55	1.74	0.41	4.29	0.59	0.00	0.59
23.60	1.74	0.41	4.29	0.59	0.00	0.59
23.65	1.74	0.41	4.28	0.59	0.00	0.59
23.70	1.74	0.41	4.28	0.59	0.00	0.59
23.75	1.74	0.41	4.27	0.59	0.00	0.59

23.80	1.74	0.41	4.27	0.59	0.00	0.59
23.85	1.74	0.41	4.26	0.59	0.00	0.59
23.90	1.74	0.41	4.26	0.59	0.00	0.59
23.95	1.74	0.41	4.26	0.59	0.00	0.59
24.00	1.74	0.41	4.25	0.59	0.00	0.59
24.05	1.74	0.41	4.25	0.59	0.00	0.59
24.10	1.74	0.41	4.24	0.59	0.00	0.59
24.15	1.74	0.41	4.24	0.59	0.00	0.59
24.20	1.74	0.41	4.23	0.59	0.00	0.59
24.25	1.74	0.41	4.23	0.59	0.00	0.59
24.30	1.74	0.41	4.23	0.59	0.00	0.59
24.35	1.74	0.41	4.22	0.59	0.00	0.59
24.40	1.74	0.41	4.22	0.59	0.00	0.59
24.45	1.74	0.41	4.21	0.59	0.00	0.59
24.50	1.74	0.41	4.21	0.59	0.00	0.59
24.55	1.74	0.41	4.21	0.59	0.00	0.59
24.60	1.74	0.42	4.20	0.59	0.00	0.59
24.65	1.74	0.42	4.20	0.59	0.00	0.59
24.70	1.74	0.42	4.19	0.59	0.00	0.59
24.75	1.74	0.42	4.19	0.59	0.00	0.59
24.80	1.74	0.42	4.19	0.59	0.00	0.59
24.85	1.74	0.42	4.18	0.59	0.00	0.59
24.90	1.74	0.42	4.18	0.59	0.00	0.59
24.95	1.74	0.42	4.17	0.59	0.00	0.59
25.00	1.74	0.42	4.17	0.59	0.00	0.59
25.05	1.74	0.42	4.17	0.59	0.00	0.59
25.10	1.74	0.42	4.16	0.59	0.00	0.59
25.15	0.43	0.42	1.02	0.59	0.00	0.59
25.20	0.42	0.42	1.00*	0.59	0.00	0.59
25.25	0.41	0.42	0.98*	0.59	0.00	0.59
25.30	0.41	0.42	0.96*	0.58	0.00	0.58
25.35	0.40	0.42	0.95*	0.58	0.00	0.58
25.40	0.39	0.42	0.94*	0.58	0.00	0.58
25.45	0.39	0.42	0.92*	0.57	0.00	0.57
25.50	0.39	0.42	0.91*	0.57	0.00	0.57
25.55	0.38	0.42	0.90*	0.57	0.00	0.57
25.60	0.38	0.42	0.89*	0.56	0.00	0.56
25.65	0.37	0.42	0.89*	0.56	0.00	0.56
25.70	0.37	0.42	0.88*	0.56	0.00	0.56
25.75	0.37	0.42	0.87*	0.55	0.00	0.55
25.80	0.37	0.42	0.86*	0.55	0.00	0.55
25.85	0.36	0.42	0.86*	0.54	0.00	0.54
25.90	0.36	0.43	0.85*	0.54	0.00	0.54
25.95	0.36	0.43	0.85*	0.53	0.00	0.53
26.00	0.36	0.43	0.84*	0.53	0.00	0.53
26.05	0.36	0.43	0.83*	0.53	0.00	0.53
26.10	0.35	0.43	0.83*	0.52	0.00	0.52
26.15	0.35	0.43	0.83*	0.52	0.00	0.52
26.20	0.35	0.43	0.82*	0.51	0.00	0.51
26.25	0.35	0.43	0.82*	0.51	0.00	0.51
26.30	0.35	0.43	0.81*	0.50	0.00	0.50
26.35	0.35	0.43	0.81*	0.50	0.00	0.50
26.40	0.34	0.43	0.80*	0.49	0.00	0.49
26.45	0.34	0.43	0.80*	0.49	0.00	0.49
26.50	0.34	0.43	0.80*	0.48	0.00	0.48
26.55	0.34	0.43	0.79*	0.48	0.00	0.48
26.60	0.34	0.43	0.79*	0.47	0.00	0.47
26.65	0.34	0.43	0.79*	0.47	0.00	0.47
26.70	0.34	0.43	0.78*	0.46	0.00	0.46
26.75	0.34	0.43	0.78*	0.46	0.00	0.46

26.80	0.33	0.43	0.78*	0.45	0.00	0.45
26.85	0.33	0.43	0.77*	0.45	0.00	0.45
26.90	0.33	0.43	0.77*	0.44	0.00	0.44
26.95	0.33	0.43	0.77*	0.44	0.00	0.44
27.00	0.33	0.43	0.76*	0.43	0.00	0.43
27.05	0.33	0.43	0.76*	0.43	0.00	0.43
27.10	0.33	0.43	0.76*	0.42	0.00	0.42
27.15	0.33	0.43	0.75*	0.41	0.00	0.41
27.20	0.33	0.43	0.75*	0.41	0.00	0.41
27.25	0.33	0.44	0.75*	0.40	0.00	0.40
27.30	0.33	0.44	0.75*	0.40	0.00	0.40
27.35	0.32	0.44	0.74*	0.39	0.00	0.39
27.40	0.32	0.44	0.74*	0.39	0.00	0.39
27.45	0.32	0.44	0.74*	0.38	0.00	0.38
27.50	0.32	0.44	0.74*	0.37	0.00	0.37
27.55	0.32	0.44	0.73*	0.37	0.00	0.37
27.60	0.32	0.44	0.73*	0.36	0.00	0.36
27.65	0.32	0.44	0.73*	0.36	0.00	0.36
27.70	0.32	0.44	0.73*	0.35	0.00	0.35
27.75	0.32	0.44	0.72*	0.34	0.00	0.34
27.80	0.32	0.44	0.72*	0.34	0.00	0.34
27.85	0.32	0.44	0.72*	0.33	0.00	0.33
27.90	0.42	0.44	0.96*	0.32	0.00	0.32
27.95	0.41	0.44	0.94*	0.32	0.00	0.32
28.00	0.41	0.44	0.92*	0.32	0.00	0.32
28.05	0.41	0.44	0.93*	0.31	0.00	0.31
28.10	0.41	0.44	0.93*	0.31	0.00	0.31
28.15	0.41	0.44	0.94*	0.31	0.00	0.31
28.20	0.42	0.44	0.95*	0.30	0.00	0.30
28.25	0.42	0.44	0.95*	0.30	0.00	0.30
28.30	0.42	0.44	0.96*	0.30	0.00	0.30
28.35	0.43	0.44	0.97*	0.30	0.00	0.30
28.40	0.43	0.44	0.98*	0.29	0.00	0.29
28.45	1.74	0.44	3.94	0.29	0.00	0.29
28.50	1.74	0.44	3.93	0.29	0.00	0.29
28.55	1.74	0.44	3.93	0.29	0.00	0.29
28.60	1.74	0.44	3.93	0.29	0.00	0.29
28.65	1.74	0.44	3.93	0.29	0.00	0.29
28.70	1.74	0.44	3.92	0.29	0.00	0.29
28.75	1.74	0.45	3.92	0.29	0.00	0.29
28.80	1.74	0.45	3.92	0.29	0.00	0.29
28.85	1.74	0.45	3.91	0.29	0.00	0.29
28.90	1.74	0.45	3.91	0.29	0.00	0.29
28.95	1.74	0.45	3.91	0.29	0.00	0.29
29.00	1.74	0.45	3.91	0.29	0.00	0.29
29.05	1.74	0.45	3.90	0.29	0.00	0.29
29.10	1.74	0.45	3.90	0.29	0.00	0.29
29.15	1.74	0.45	3.90	0.29	0.00	0.29
29.20	1.76	0.45	3.92	0.29	0.00	0.29
29.25	1.75	0.45	3.91	0.29	0.00	0.29
29.30	1.75	0.45	3.91	0.29	0.00	0.29
29.35	1.75	0.45	3.91	0.29	0.00	0.29
29.40	1.75	0.45	3.90	0.29	0.00	0.29
29.45	1.75	0.45	3.90	0.29	0.00	0.29
29.50	1.75	0.45	3.90	0.29	0.00	0.29
29.55	1.75	0.45	3.89	0.29	0.00	0.29
29.60	1.75	0.45	3.89	0.29	0.00	0.29
29.65	1.75	0.45	3.88	0.29	0.00	0.29
29.70	1.75	0.45	3.88	0.29	0.00	0.29
29.75	1.75	0.45	3.88	0.29	0.00	0.29

29.80	1.75	0.45	3.87	0.29	0.00	0.29
29.85	1.75	0.45	3.87	0.29	0.00	0.29
29.90	1.75	0.45	3.87	0.29	0.00	0.29
29.95	1.75	0.45	3.86	0.29	0.00	0.29
30.00	1.75	0.45	3.86	0.29	0.00	0.29
30.05	1.75	0.45	3.86	0.29	0.00	0.29
30.10	1.75	0.45	3.85	0.29	0.00	0.29
30.15	1.75	0.45	3.85	0.29	0.00	0.29
30.20	1.74	0.45	3.85	0.29	0.00	0.29
30.25	1.74	0.45	3.85	0.29	0.00	0.29
30.30	1.74	0.45	3.84	0.29	0.00	0.29
30.35	1.74	0.45	3.84	0.29	0.00	0.29
30.40	1.74	0.45	3.84	0.29	0.00	0.29
30.45	1.74	0.45	3.84	0.29	0.00	0.29
30.50	1.74	0.45	3.83	0.29	0.00	0.29
30.55	1.74	0.45	3.83	0.29	0.00	0.29
30.60	1.74	0.45	3.83	0.29	0.00	0.29
30.65	1.74	0.45	3.83	0.29	0.00	0.29
30.70	1.74	0.45	3.83	0.29	0.00	0.29
30.75	1.74	0.45	3.82	0.29	0.00	0.29
30.80	1.74	0.46	3.82	0.29	0.00	0.29
30.85	1.74	0.46	3.82	0.29	0.00	0.29
30.90	1.74	0.46	3.82	0.29	0.00	0.29
30.95	1.74	0.46	3.81	0.29	0.00	0.29
31.00	1.74	0.46	3.81	0.29	0.00	0.29
31.05	1.74	0.46	3.81	0.29	0.00	0.29
31.10	1.74	0.46	3.81	0.29	0.00	0.29
31.15	1.74	0.46	3.81	0.29	0.00	0.29
31.20	1.73	0.46	3.80	0.29	0.00	0.29
31.25	1.73	0.46	3.80	0.29	0.00	0.29
31.30	1.73	0.46	3.80	0.29	0.00	0.29
31.35	1.73	0.46	3.80	0.29	0.00	0.29
31.40	1.73	0.46	3.79	0.29	0.00	0.29
31.45	1.73	0.46	3.79	0.29	0.00	0.29
31.50	1.73	0.46	3.79	0.29	0.00	0.29
31.55	1.73	0.46	3.79	0.29	0.00	0.29
31.60	1.73	0.46	3.79	0.29	0.00	0.29
31.65	1.73	0.46	3.78	0.29	0.00	0.29
31.70	1.73	0.46	3.78	0.29	0.00	0.29
31.75	1.73	0.46	3.78	0.29	0.00	0.29
31.80	1.73	0.46	3.78	0.29	0.00	0.29
31.85	1.73	0.46	3.78	0.29	0.00	0.29
31.90	1.73	0.46	3.77	0.29	0.00	0.29
31.95	1.73	0.46	3.77	0.29	0.00	0.29
32.00	1.73	0.46	3.77	0.29	0.00	0.29
32.05	1.73	0.46	3.77	0.29	0.00	0.29
32.10	1.73	0.46	3.77	0.29	0.00	0.29
32.15	1.72	0.46	3.76	0.29	0.00	0.29
32.20	1.72	0.46	3.76	0.29	0.00	0.29
32.25	1.72	0.46	3.76	0.29	0.00	0.29
32.30	1.72	0.46	3.76	0.29	0.00	0.29
32.35	1.72	0.46	3.76	0.29	0.00	0.29
32.40	1.72	0.46	3.75	0.29	0.00	0.29
32.45	1.72	0.46	3.75	0.29	0.00	0.29
32.50	1.72	0.46	3.75	0.29	0.00	0.29
32.55	1.72	0.46	3.75	0.29	0.00	0.29
32.60	1.72	0.46	3.75	0.29	0.00	0.29
32.65	1.72	0.46	3.74	0.29	0.00	0.29
32.70	1.72	0.46	3.74	0.29	0.00	0.29
32.75	1.72	0.46	3.74	0.29	0.00	0.29

32.80	1.72	0.46	3.74	0.29	0.00	0.29
32.85	1.72	0.46	3.74	0.29	0.00	0.29
32.90	1.72	0.46	3.73	0.29	0.00	0.29
32.95	1.72	0.46	3.73	0.29	0.00	0.29
33.00	1.72	0.46	3.73	0.29	0.00	0.29
33.05	1.72	0.46	3.73	0.29	0.00	0.29
33.10	1.71	0.46	3.73	0.29	0.00	0.29
33.15	1.71	0.46	3.73	0.29	0.00	0.29
33.20	1.71	0.46	3.72	0.29	0.00	0.29
33.25	1.71	0.46	3.72	0.29	0.00	0.29
33.30	1.71	0.46	3.72	0.29	0.00	0.29
33.35	1.71	0.46	3.72	0.29	0.00	0.29
33.40	1.71	0.46	3.72	0.29	0.00	0.29
33.45	1.71	0.46	3.71	0.29	0.00	0.29
33.50	1.71	0.46	3.71	0.29	0.00	0.29
33.55	1.71	0.46	3.71	0.29	0.00	0.29
33.60	1.71	0.46	3.71	0.29	0.00	0.29
33.65	1.71	0.46	3.71	0.29	0.00	0.29
33.70	1.71	0.46	3.71	0.29	0.00	0.29
33.75	1.71	0.46	3.70	0.29	0.00	0.29
33.80	1.71	0.46	3.70	0.29	0.00	0.29
33.85	1.71	0.46	3.70	0.29	0.00	0.29
33.90	1.71	0.46	3.70	0.29	0.00	0.29
33.95	1.71	0.46	3.70	0.29	0.00	0.29
34.00	1.71	0.46	3.70	0.29	0.00	0.29
34.05	1.71	0.46	3.69	0.29	0.00	0.29
34.10	1.70	0.46	3.69	0.29	0.00	0.29
34.15	1.70	0.46	3.69	0.29	0.00	0.29
34.20	1.70	0.46	3.69	0.29	0.00	0.29
34.25	1.70	0.46	3.69	0.29	0.00	0.29
34.30	1.70	0.46	3.69	0.29	0.00	0.29
34.35	1.70	0.46	3.68	0.29	0.00	0.29
34.40	1.70	0.46	3.68	0.29	0.00	0.29
34.45	1.70	0.46	3.68	0.29	0.00	0.29
34.50	1.70	0.46	3.68	0.29	0.00	0.29
34.55	1.70	0.46	3.68	0.29	0.00	0.29
34.60	1.70	0.46	3.68	0.29	0.00	0.29
34.65	1.70	0.46	3.67	0.29	0.00	0.29
34.70	1.70	0.46	3.67	0.29	0.00	0.29
34.75	1.70	0.46	3.67	0.29	0.00	0.29
34.80	1.70	0.46	3.67	0.29	0.00	0.29
34.85	1.70	0.46	3.67	0.29	0.00	0.29
34.90	1.70	0.46	3.67	0.29	0.00	0.29
34.95	1.70	0.46	3.66	0.29	0.00	0.29
35.00	1.70	0.46	3.66	0.29	0.00	0.29
35.05	1.70	0.46	3.66	0.29	0.00	0.29
35.10	1.69	0.46	3.66	0.29	0.00	0.29
35.15	1.69	0.46	3.66	0.29	0.00	0.29
35.20	1.69	0.46	3.66	0.29	0.00	0.29
35.25	1.69	0.46	3.66	0.29	0.00	0.29
35.30	1.69	0.46	3.65	0.29	0.00	0.29
35.35	1.69	0.46	3.65	0.29	0.00	0.29
35.40	1.69	0.46	3.65	0.29	0.00	0.29
35.45	1.69	0.46	3.65	0.29	0.00	0.29
35.50	1.69	0.46	3.65	0.29	0.00	0.29
35.55	1.69	0.46	3.65	0.29	0.00	0.29
35.60	1.69	0.46	3.64	0.29	0.00	0.29
35.65	1.69	0.46	3.64	0.29	0.00	0.29
35.70	1.69	0.46	3.64	0.29	0.00	0.29
35.75	1.69	0.46	3.64	0.29	0.00	0.29

35.80	1.69	0.46	3.64	0.29	0.00	0.29
35.85	1.69	0.46	3.64	0.29	0.00	0.29
35.90	1.69	0.46	3.64	0.29	0.00	0.29
35.95	1.69	0.46	3.63	0.29	0.00	0.29
36.00	1.69	0.46	3.63	0.29	0.00	0.29
36.05	1.69	0.46	3.63	0.29	0.00	0.29
36.10	1.69	0.46	3.63	0.29	0.00	0.29
36.15	1.68	0.46	3.63	0.29	0.00	0.29
36.20	1.68	0.46	3.63	0.29	0.00	0.29
36.25	1.68	0.46	3.63	0.29	0.00	0.29
36.30	1.68	0.46	3.63	0.29	0.00	0.29
36.35	1.68	0.46	3.62	0.29	0.00	0.29
36.40	1.68	0.46	3.62	0.29	0.00	0.29
36.45	1.68	0.46	3.62	0.29	0.00	0.29
36.50	1.68	0.46	3.62	0.29	0.00	0.29
36.55	1.68	0.46	3.62	0.29	0.00	0.29
36.60	1.68	0.46	3.62	0.29	0.00	0.29
36.65	1.68	0.46	3.62	0.29	0.00	0.29
36.70	1.68	0.46	3.61	0.29	0.00	0.29
36.75	1.68	0.46	3.61	0.29	0.00	0.29
36.80	1.68	0.46	3.61	0.29	0.00	0.29
36.85	1.68	0.46	3.61	0.29	0.00	0.29
36.90	1.68	0.46	3.61	0.29	0.00	0.29
36.95	1.68	0.47	3.61	0.29	0.00	0.29
37.00	1.68	0.47	3.61	0.29	0.00	0.29
37.05	1.68	0.47	3.60	0.29	0.00	0.29
37.10	1.68	0.47	3.60	0.29	0.00	0.29
37.15	1.68	0.47	3.60	0.29	0.00	0.29
37.20	1.68	0.47	3.60	0.29	0.00	0.29
37.25	1.67	0.47	3.60	0.29	0.00	0.29
37.30	1.67	0.47	3.60	0.29	0.00	0.29
37.35	1.67	0.47	3.60	0.29	0.00	0.29
37.40	1.67	0.47	3.60	0.29	0.00	0.29
37.45	1.67	0.47	3.59	0.29	0.00	0.29
37.50	1.67	0.47	3.59	0.29	0.00	0.29
37.55	1.67	0.47	3.59	0.29	0.00	0.29
37.60	1.67	0.47	3.59	0.29	0.00	0.29
37.65	1.67	0.47	3.59	0.29	0.00	0.29
37.70	1.67	0.47	3.59	0.29	0.00	0.29
37.75	1.67	0.47	3.59	0.29	0.00	0.29
37.80	1.67	0.47	3.59	0.29	0.00	0.29
37.85	1.67	0.47	3.58	0.29	0.00	0.29
37.90	1.67	0.47	3.58	0.29	0.00	0.29
37.95	1.67	0.47	3.58	0.29	0.00	0.29
38.00	1.67	0.47	3.58	0.29	0.00	0.29
38.05	1.67	0.47	3.58	0.29	0.00	0.29
38.10	1.67	0.47	3.58	0.29	0.00	0.29
38.15	1.67	0.47	3.58	0.29	0.00	0.29
38.20	1.67	0.47	3.58	0.29	0.00	0.29
38.25	1.67	0.47	3.58	0.29	0.00	0.29
38.30	1.67	0.47	3.57	0.29	0.00	0.29
38.35	1.67	0.47	3.57	0.29	0.00	0.29
38.40	1.67	0.47	3.57	0.29	0.00	0.29
38.45	1.66	0.47	3.57	0.29	0.00	0.29
38.50	1.66	0.47	3.57	0.29	0.00	0.29
38.55	1.66	0.47	3.57	0.29	0.00	0.29
38.60	1.66	0.47	3.57	0.29	0.00	0.29
38.65	1.66	0.47	3.57	0.29	0.00	0.29
38.70	1.66	0.47	3.56	0.29	0.00	0.29
38.75	1.66	0.47	3.56	0.29	0.00	0.29

38.80	1.66	0.47	3.56	0.29	0.00	0.29
38.85	1.66	0.47	3.56	0.29	0.00	0.29
38.90	1.66	0.47	3.56	0.29	0.00	0.29
38.95	1.66	0.47	3.56	0.29	0.00	0.29
39.00	1.66	0.47	3.56	0.29	0.00	0.29
39.05	1.66	0.47	3.56	0.29	0.00	0.29
39.10	1.66	0.47	3.56	0.29	0.00	0.29
39.15	1.66	0.47	3.55	0.29	0.00	0.29
39.20	1.66	0.47	3.55	0.29	0.00	0.29
39.25	1.66	0.47	3.55	0.29	0.00	0.29
39.30	1.66	0.47	3.55	0.29	0.00	0.29
39.35	1.66	0.47	3.55	0.29	0.00	0.29
39.40	1.66	0.47	3.55	0.29	0.00	0.29
39.45	1.66	0.47	3.55	0.29	0.00	0.29
39.50	1.66	0.47	3.55	0.29	0.00	0.29
39.55	1.66	0.47	3.55	0.29	0.00	0.29
39.60	1.65	0.47	3.55	0.29	0.00	0.29
39.65	1.65	0.47	3.54	0.29	0.00	0.29
39.70	1.65	0.47	3.54	0.29	0.00	0.29
39.75	1.65	0.47	3.54	0.29	0.00	0.29
39.80	1.65	0.47	3.54	0.29	0.00	0.29
39.85	1.65	0.47	3.54	0.29	0.00	0.29
39.90	1.65	0.47	3.54	0.29	0.00	0.29
39.95	1.65	0.47	3.54	0.29	0.00	0.29
40.00	1.65	0.47	3.54	0.29	0.00	0.29
40.05	1.65	0.47	3.54	0.29	0.00	0.29
40.10	1.65	0.47	3.54	0.29	0.00	0.29
40.15	1.65	0.47	3.53	0.29	0.00	0.29
40.20	1.65	0.47	3.53	0.29	0.00	0.29
40.25	1.65	0.47	3.53	0.29	0.00	0.29
40.30	1.65	0.47	3.53	0.29	0.00	0.29
40.35	1.65	0.47	3.53	0.29	0.00	0.29
40.40	1.65	0.47	3.53	0.29	0.00	0.29
40.45	1.65	0.47	3.53	0.29	0.00	0.29
40.50	1.65	0.47	3.53	0.29	0.00	0.29
40.55	1.65	0.47	3.53	0.29	0.00	0.29
40.60	1.65	0.47	3.53	0.29	0.00	0.29
40.65	1.65	0.47	3.52	0.29	0.00	0.29
40.70	1.65	0.47	3.52	0.29	0.00	0.29
40.75	1.65	0.47	3.52	0.29	0.00	0.29
40.80	1.64	0.47	3.52	0.29	0.00	0.29
40.85	0.41	0.47	0.88*	0.29	0.00	0.29
40.90	0.40	0.47	0.86*	0.29	0.00	0.29
40.95	0.40	0.47	0.85*	0.28	0.00	0.28
41.00	0.39	0.47	0.83*	0.28	0.00	0.28
41.05	0.38	0.47	0.82*	0.27	0.00	0.27
41.10	0.38	0.47	0.81*	0.27	0.00	0.27
41.15	0.37	0.47	0.80*	0.26	0.00	0.26
41.20	0.37	0.47	0.79*	0.26	0.00	0.26
41.25	0.37	0.47	0.78*	0.26	0.00	0.26
41.30	0.36	0.47	0.78*	0.25	0.00	0.25
41.35	0.36	0.47	0.77*	0.25	0.00	0.25
41.40	0.36	0.47	0.76*	0.24	0.00	0.24
41.45	0.35	0.47	0.76*	0.24	0.00	0.24
41.50	0.35	0.47	0.75*	0.23	0.00	0.23
41.55	0.35	0.47	0.75*	0.23	0.00	0.23
41.60	0.35	0.47	0.74*	0.22	0.00	0.22
41.65	0.34	0.47	0.74*	0.21	0.00	0.21
41.70	0.34	0.47	0.73*	0.21	0.00	0.21
41.75	0.34	0.47	0.73*	0.20	0.00	0.20

41.80	0.34	0.47	0.73*	0.20	0.00	0.20
41.85	0.34	0.47	0.72*	0.19	0.00	0.19
41.90	0.34	0.47	0.72*	0.19	0.00	0.19
41.95	0.33	0.47	0.72*	0.18	0.00	0.18
42.00	0.33	0.47	0.71*	0.18	0.00	0.18
42.05	0.33	0.47	0.71*	0.17	0.00	0.17
42.10	0.33	0.47	0.71*	0.16	0.00	0.16
42.15	0.33	0.47	0.70*	0.16	0.00	0.16
42.20	0.33	0.47	0.70*	0.15	0.00	0.15
42.25	0.33	0.47	0.70*	0.15	0.00	0.15
42.30	0.32	0.47	0.69*	0.14	0.00	0.14
42.35	0.32	0.47	0.69*	0.13	0.00	0.13
42.40	0.32	0.47	0.69*	0.13	0.00	0.13
42.45	0.32	0.47	0.69*	0.12	0.00	0.12
42.50	0.32	0.47	0.68*	0.11	0.00	0.11
42.55	0.32	0.47	0.68*	0.11	0.00	0.11
42.60	0.32	0.47	0.68*	0.10	0.00	0.10
42.65	0.32	0.47	0.68*	0.10	0.00	0.10
42.70	0.32	0.47	0.68*	0.09	0.00	0.09
42.75	0.31	0.47	0.67*	0.08	0.00	0.08
42.80	0.31	0.47	0.67*	0.08	0.00	0.08
42.85	0.31	0.47	0.67*	0.07	0.00	0.07
42.90	0.31	0.47	0.67*	0.06	0.00	0.06
42.95	0.31	0.47	0.67*	0.06	0.00	0.06
43.00	0.31	0.47	0.66*	0.05	0.00	0.05
43.05	0.31	0.47	0.67*	0.04	0.00	0.04
43.10	0.32	0.47	0.68*	0.04	0.00	0.04
43.15	0.33	0.47	0.70*	0.03	0.00	0.03
43.20	0.33	0.47	0.71*	0.03	0.00	0.03
43.25	0.34	0.47	0.73*	0.02	0.00	0.02
43.30	0.35	0.47	0.76*	0.01	0.00	0.01
43.35	0.37	0.47	0.79*	0.01	0.00	0.01
43.40	0.40	0.47	0.86*	0.00	0.00	0.00
43.45	1.62	0.47	3.48	0.00	0.00	0.00
43.50	1.62	0.47	3.48	0.00	0.00	0.00
43.55	1.62	0.47	3.48	0.00	0.00	0.00
43.60	1.62	0.47	3.48	0.00	0.00	0.00
43.65	1.62	0.47	3.48	0.00	0.00	0.00
43.70	1.62	0.47	3.48	0.00	0.00	0.00
43.75	1.62	0.47	3.48	0.00	0.00	0.00
43.80	1.62	0.47	3.48	0.00	0.00	0.00
43.85	1.62	0.47	3.48	0.00	0.00	0.00
43.90	1.62	0.47	3.48	0.00	0.00	0.00
43.95	1.62	0.47	3.47	0.00	0.00	0.00
44.00	1.62	0.47	3.47	0.00	0.00	0.00
44.05	1.62	0.47	3.47	0.00	0.00	0.00
44.10	1.62	0.47	3.47	0.00	0.00	0.00
44.15	1.62	0.47	3.47	0.00	0.00	0.00
44.20	1.62	0.47	3.47	0.00	0.00	0.00
44.25	1.62	0.47	3.47	0.00	0.00	0.00
44.30	1.62	0.47	3.47	0.00	0.00	0.00
44.35	1.62	0.47	3.47	0.00	0.00	0.00
44.40	1.61	0.47	3.47	0.00	0.00	0.00
44.45	1.61	0.47	3.47	0.00	0.00	0.00
44.50	1.61	0.47	3.47	0.00	0.00	0.00
44.55	1.61	0.47	3.47	0.00	0.00	0.00
44.60	1.61	0.47	3.47	0.00	0.00	0.00
44.65	1.61	0.47	3.47	0.00	0.00	0.00
44.70	1.61	0.47	3.47	0.00	0.00	0.00
44.75	1.61	0.47	3.47	0.00	0.00	0.00

44.80	1.61	0.47	3.47	0.00	0.00	0.00
44.85	1.61	0.46	3.46	0.00	0.00	0.00
44.90	1.61	0.46	3.46	0.00	0.00	0.00
44.95	1.61	0.46	3.46	0.00	0.00	0.00
45.00	1.61	0.46	3.46	0.00	0.00	0.00
45.05	1.61	0.46	3.46	0.00	0.00	0.00
45.10	1.61	0.46	3.46	0.00	0.00	0.00
45.15	1.61	0.46	3.46	0.00	0.00	0.00
45.20	1.61	0.46	3.46	0.00	0.00	0.00
45.25	1.61	0.46	3.46	0.00	0.00	0.00
45.30	1.61	0.46	3.46	0.00	0.00	0.00
45.35	1.61	0.46	3.46	0.00	0.00	0.00
45.40	1.61	0.46	3.46	0.00	0.00	0.00
45.45	1.61	0.46	3.46	0.00	0.00	0.00
45.50	1.61	0.46	3.46	0.00	0.00	0.00
45.55	1.61	0.46	3.46	0.00	0.00	0.00
45.60	1.60	0.46	3.46	0.00	0.00	0.00
45.65	1.60	0.46	3.46	0.00	0.00	0.00
45.70	1.60	0.46	3.46	0.00	0.00	0.00
45.75	1.60	0.46	3.46	0.00	0.00	0.00
45.80	1.60	0.46	3.46	0.00	0.00	0.00
45.85	1.60	0.46	3.45	0.00	0.00	0.00
45.90	1.60	0.46	3.45	0.00	0.00	0.00
45.95	1.60	0.46	3.45	0.00	0.00	0.00
46.00	1.60	0.46	3.45	0.00	0.00	0.00
46.05	1.60	0.46	3.45	0.00	0.00	0.00
46.10	1.60	0.46	3.45	0.00	0.00	0.00
46.15	1.60	0.46	3.45	0.00	0.00	0.00
46.20	1.60	0.46	3.45	0.00	0.00	0.00
46.25	1.60	0.46	3.45	0.00	0.00	0.00
46.30	1.60	0.46	3.45	0.00	0.00	0.00
46.35	1.60	0.46	3.45	0.00	0.00	0.00
46.40	1.60	0.46	3.45	0.00	0.00	0.00
46.45	1.60	0.46	3.45	0.00	0.00	0.00
46.50	1.60	0.46	3.45	0.00	0.00	0.00
46.55	1.60	0.46	3.45	0.00	0.00	0.00
46.60	1.60	0.46	3.45	0.00	0.00	0.00
46.65	1.60	0.46	3.45	0.00	0.00	0.00
46.70	1.60	0.46	3.45	0.00	0.00	0.00
46.75	1.60	0.46	3.45	0.00	0.00	0.00
46.80	1.60	0.46	3.45	0.00	0.00	0.00
46.85	1.59	0.46	3.45	0.00	0.00	0.00
46.90	1.59	0.46	3.45	0.00	0.00	0.00
46.95	1.59	0.46	3.45	0.00	0.00	0.00
47.00	1.59	0.46	3.45	0.00	0.00	0.00
47.05	1.59	0.46	3.44	0.00	0.00	0.00
47.10	1.59	0.46	3.44	0.00	0.00	0.00
47.15	1.59	0.46	3.44	0.00	0.00	0.00
47.20	1.59	0.46	3.44	0.00	0.00	0.00
47.25	1.59	0.46	3.44	0.00	0.00	0.00
47.30	1.59	0.46	3.44	0.00	0.00	0.00
47.35	1.59	0.46	3.44	0.00	0.00	0.00
47.40	1.59	0.46	3.44	0.00	0.00	0.00
47.45	1.59	0.46	3.44	0.00	0.00	0.00
47.50	1.59	0.46	3.44	0.00	0.00	0.00
47.55	1.59	0.46	3.44	0.00	0.00	0.00
47.60	1.59	0.46	3.44	0.00	0.00	0.00
47.65	1.59	0.46	3.44	0.00	0.00	0.00
47.70	1.59	0.46	3.44	0.00	0.00	0.00
47.75	1.59	0.46	3.44	0.00	0.00	0.00

47.80	1.59	0.46	3.44	0.00	0.00	0.00
47.85	1.59	0.46	3.44	0.00	0.00	0.00
47.90	1.59	0.46	3.44	0.00	0.00	0.00
47.95	1.59	0.46	3.44	0.00	0.00	0.00
48.00	1.59	0.46	3.44	0.00	0.00	0.00
48.05	1.59	0.46	3.44	0.00	0.00	0.00
48.10	1.58	0.46	3.44	0.00	0.00	0.00
48.15	1.58	0.46	3.44	0.00	0.00	0.00
48.20	1.58	0.46	3.44	0.00	0.00	0.00
48.25	1.58	0.46	3.44	0.00	0.00	0.00
48.30	1.58	0.46	3.44	0.00	0.00	0.00
48.35	1.58	0.46	3.44	0.00	0.00	0.00
48.40	1.58	0.46	3.44	0.00	0.00	0.00
48.45	1.58	0.46	3.44	0.00	0.00	0.00
48.50	1.58	0.46	3.44	0.00	0.00	0.00
48.55	1.58	0.46	3.44	0.00	0.00	0.00
48.60	1.58	0.46	3.44	0.00	0.00	0.00
48.65	1.58	0.46	3.44	0.00	0.00	0.00
48.70	1.58	0.46	3.43	0.00	0.00	0.00
48.75	1.58	0.46	3.43	0.00	0.00	0.00
48.80	1.58	0.46	3.43	0.00	0.00	0.00
48.85	1.58	0.46	3.43	0.00	0.00	0.00
48.90	1.58	0.46	3.43	0.00	0.00	0.00
48.95	1.58	0.46	3.43	0.00	0.00	0.00
49.00	1.58	0.46	3.43	0.00	0.00	0.00
49.05	1.58	0.46	3.43	0.00	0.00	0.00
49.10	1.58	0.46	3.43	0.00	0.00	0.00
49.15	1.58	0.46	3.43	0.00	0.00	0.00
49.20	1.58	0.46	3.43	0.00	0.00	0.00
49.25	1.58	0.46	3.43	0.00	0.00	0.00
49.30	1.58	0.46	3.43	0.00	0.00	0.00
49.35	1.57	0.46	3.43	0.00	0.00	0.00
49.40	1.57	0.46	3.43	0.00	0.00	0.00
49.45	1.57	0.46	3.43	0.00	0.00	0.00
49.50	1.57	0.46	3.43	0.00	0.00	0.00
49.55	1.57	0.46	3.43	0.00	0.00	0.00
49.60	1.57	0.46	3.43	0.00	0.00	0.00
49.65	1.57	0.46	3.43	0.00	0.00	0.00
49.70	1.57	0.46	3.43	0.00	0.00	0.00
49.75	1.57	0.46	3.43	0.00	0.00	0.00
49.80	1.57	0.46	3.43	0.00	0.00	0.00
49.85	1.57	0.46	3.43	0.00	0.00	0.00
49.90	1.57	0.46	3.43	0.00	0.00	0.00
49.95	1.57	0.46	3.43	0.00	0.00	0.00
50.00	1.57	0.46	3.43	0.00	0.00	0.00

---

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)
CRRm Cyclic resistance ratio from soils
CSRsf Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S. Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat Settlement from saturated sands
S_dry Settlement from Unsaturated Sands

S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

****

LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: H:\Liquefy5\02222124B1.liq
Title: MLK Elementary School - Bakersfield
Subtitle: Boring B1
Surface Elev.=
Hole No.=B1
Depth of Hole= 50.00 ft
Water Table during Earthquake= 22.00 ft
Water Table during In-Situ Testing= 50.00 ft
Max. Acceleration= 0.49 g
Earthquake Magnitude= 7.91

Input Data:

Surface Elev.=
Hole No.=B1
Depth of Hole=50.00 ft
Water Table during Earthquake= 22.00 ft
Water Table during In-Situ Testing= 50.00 ft
Max. Acceleration=0.49 g
Earthquake Magnitude=7.91
No-Liquefiable Soils: Based on Analysis
1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Modify Stark/Olson
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1.3
Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	22.00	141.00	38.00
4.00	50.00	133.00	37.00
8.00	11.00	106.00	11.00
13.00	12.00	103.00	10.00
18.00	12.00	100.00	10.00
23.00	28.00	105.00	10.00
28.00	28.00	115.00	10.00
33.00	23.00	129.00	47.00
38.00	35.00	111.00	9.00
43.00	34.00	117.00	10.00
47.00	30.00	118.00	70.00
50.00	30.00	118.00	70.00

Output Results:

Settlement of Saturated Sands=0.64 in.
Settlement of Unsaturated Sands=1.33 in.
Total Settlement of Saturated and Unsaturated Sands=1.97 in.
Differential Settlement=0.985 to 1.300 in.

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AND BACKGROUND SOURCES
022-22124

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DOCUMENT 00 41 13

BID FORM AND PROPOSAL

To: Governing Board of the Bakersfield City School District ("District" or "Owner")

From: _____
(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of for the following projects known as:

Martin Luther King Jr. Elementary School - Wellness Center / 22243.00-09-WEL / DSA # 03-122605, Parent Center / 22243.00-09-PRC / DSA # 03-122604, T-Kindergarten / 23189.00-09-TK / DSA # 03-123900

("Project" or "Contract") and will accept in full payment for that Work the following grand total lump sum amount, all taxes included:

_____	dollars	$ _____
WELLNESS CENTER TOTAL		
_____	dollars	$ _____
PARENT CENTER TOTAL		
_____	dollars	$ _____
TRANSITIONAL KINDERGARTEN TOTAL		
_____	dollars	$ _____
BASE BID GRAND TOTAL		

Additive/Deductive Alternates: None

1. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if

accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.

2. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.

3. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.

4. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.

5. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.

6. The following documents are attached hereto:

   - Bid Bond on the District's form or other security
   - Designated Subcontractors List
   - Non-Collusion Declaration
   - Iran Contracting Act Certification

7. Receipt and acceptance of the following Addenda is hereby acknowledged:

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

8. Bidder acknowledges that the license required for performance of the Work is a B license.

9. Bidder hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

10. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.

11. Bidder hereby certifies that its bid includes sufficient funds to permit Bidder to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that Bidder will comply with the provisions of Labor Code section 2810(d) if awarded the Contract

12. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with the Davis Bacon Act, applicable reporting requirements, and any and all other applicable requirements for federal funding. If a conflict exists, the more stringent requirement shall control.

13. Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.

14. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.

15. Bidder expressly acknowledges that it is familiar with and capable of complying with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.

16. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Gov. Code, § 12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.

17. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

Furthermore, Bidder hereby certifies to the District that all representations, certifications, and statements made by Bidder, as set forth in this bid form, are true and correct and are made under penalty of perjury.

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signature: _____

Print Name: _____

Title: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____

Fax Number: _____

E-mail: _____ Web Page: _____

Contractor's License No(s): No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

MLK – Wellness Center – Owner Furnished Contractor Installed HVAC Equipment

District is providing all HVAC Units and Exhaust Fans noted on DSA Drawing Sheet M0.01. See associated District Equipment Purchase Orders attached.

Snap shot below from District's HVAC Equipment bid with Model Numbers being provided. Contractor to include labor for all items noted below as "Field Installed."

Contractor to include all costs to coordinate pick up, loading, trucking of HVAC equipment from District warehouse located at 1201 Citation Way, Bakersfield, CA, 93308. Include delivery to jobsite for installation, 1100 Citadel St., Bakersfield, CA, 93307.

HP-7	72	50GCQJ05J2M6-0A3A0	4 Ton Heat Pump Rooftop Packaged Unit 460-3-60 • Two-Stage Cooling single circuit (SEER) • 460-3-60 • 4 Tons • Condensate overflow switch • Direct drive, EcoBlue, medium static fan • Al/Cu cond. coil - Al/Cu evap coil w/Hail Guards • Electro-Mechanical Ctl • Hinged access panels • Ion Generator • Factory Start-Up with 1st Year Labor Warranty
HP-7	72		Time Guard II ***(Field Installed)***
HP-7	72		Fan/Filter Status Switch ***(Field Installed)***
HP-7	72		Phase Monitor Control ***(Field Installed)***
HP-7	72		5.5 kW Electric Heat Strip ***(Field Installed)***
HP-7	72		Hinged Access Door ***(Field Installed)***
HP-7	72		Down Discharge Dry Bulb Economizer ***(Field Installed)***
HP-7	72		14" Tall Pitched Welded Roof Curb ***(Field Installed) (Contractor to Verify Prior to Order)***
		Subtotal:	
HP-8	1	38MARBQ12AA3	1 Ton Heat Pump Condenser 208/230-1-60 • Factory Start-Up with 1st Year Labor Warranty
HP-8	1	40MBCQ12---3	1 Ton 4-Way Cassette Indoor Unit 208/230-1-60 • Factory Start-Up with 1st Year Labor Warranty
HP-8	1		Cassette Grille ***(Field Installed)***
HP-8	1		24V Interface Kit ***(Field Installed)***

Bakersfield City School District

1300 Baker Street
Bakersfield, CA 93305-4326
Phone: (661) 631-4600 Fax: (661) 861-9907

PURCHASE ORDER

No: **P24002918**

Date: 08/24/2023

VENDOR

SIGLER WHOLESALE DISTRIBUTORS
7021 SCHIRRA CT.
BAKERSFIELD, CA 93313

Phone: (661) 636-0792 **Fax:** (860) 622-6719

SHIP TO

Bakersfield City School District
Dr. Martin Luther King, Jr. Elementary School
1100 Citadel Street
Bakersfield, CA 93307

For: Maintenance, Operations and Facilities
MLK JR 22243.00-09-WELLNESS

Vendor # 295960

Buyer: Melissa Hernandez **Req #** R24003766

Terms: NET 30 DAYS **Due Date:** 09/20/2023 **FOB:** N/A **Ship Via:** OUR PICK-UP

ITEM	QUANTITY	UNIT ISSUE	DESCRIPTION	UNIT COST	EXTENSION
			MLK JR 22243.00-09-WELLNESS BID #23-06-01		
1	3	EA	Carrier HP-7 (4) Ton Unit, Model: 50GCQM05 Electric		
2	1	EA	Carrier HP-8 {1) Ton Unit, Model: 40MBCO12 Electric IDU-1 Indoor Unit		
3	1	EA	Carrier HP-8 {1) Ton Unit, Model: 38MARQ12 Electric ODU-1 Outdoor Unit		
			PRICING PER HVAC EQUIPMENT REPLACEMENT BID #23-06-01 BOARD APPROVAL DATE: AUGUST 8, 2023		

Special Instructions to Vendor:

1. **Purchase order number must appear on all invoices, shipping papers and correspondence.**
2. **Submit itemized invoice to the Accounts Payable Office, 1300 Baker Street, Bakersfield, CA 93305**
3. **Packing slip must accompany each delivery, showing PO number, serial number, and description.**
4. **No changes without authorization from the Purchasing Department.**
5. **If freight charges apply, prepay and add to invoice. No C.O.D. charges permitted.**
6. **Receiving hours: 8:00 a.m. - 4:00 p.m., Monday - Friday.**
7. **This PO is a covered transaction for purposes of 49 CFR Part 29. As such, the vendor/contractor certifies that to the best of its knowledge and belief that it and its principals are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.**
8. **MATERIAL SAFETY DATA SHEETS MUST BE SUPPLIED WHERE APPLICABLE**

SUB TOTAL	
SALES TAX	
SHIPPING	
TOTAL	

AUTHORIZED SIGNATURE

David J. West

VENDOR

Bakersfield City School District

1300 Baker Street
Bakersfield, CA 93305-4326
Phone: (661) 631-4600 Fax: (661) 861-9907

PURCHASE ORDER

No: **P24002902**

Date: 08/24/2023

VENDOR

NORMAN S. WRIGHT DUCKWORTH
MECHANICAL
EQUIPMENT CO., LLC
7595 N. DEL MAR AVENUE
FRESNO, CA 93711

Phone: (559) 449-8701 **Fax:** (559) 449-8734

SHIP TO

Bakersfield City School District
Dr. Martin Luther King, Jr. Elementary School
1100 Citadel Street
Bakersfield, CA 93307

For: Maintenance, Operations and Facilities
MLK JR 22243.00-09-WELLNESS

Vendor # 317913

Buyer: Melissa Hernandez **Req #** R24003872

Terms: NET 30 DAYS **Due Date:** 09/20/2023

FOB: FRESNO **Ship Via:** UPS

ITEM	QUANTITY	UNIT ISSUE	DESCRIPTION	UNIT COST	EXTENSION
			MLK JR 22243.00-09-WELLNESS - BID #23-06-01		
1	1	EA	Greenheck EF-6, Model: SP-A70-QD		
2	3	EA	Greenheck EF-7, Model: SP-All0-QD		
			PRICING PER EXHAUST FAN REPLACEMENT BID #23-06-01		
			BOARD APPROVAL DATE: AUGUST 8, 2023		

SUB TOTAL	
SALES TAX	
SHIPPING	
TOTAL	

Special Instructions to Vendor:

1. Purchase order number must appear on all invoices, shipping papers and correspondence.
2. Submit itemized invoice to the Accounts Payable Office, 1300 Baker Street, Bakersfield, CA 93305
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7. This PO is a covered transaction for purposes of 49 CFR Part 29. As such, the vendor/contractor certifies that to the best of its knowledge and belief that it and its principals are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.
8. MATERIAL SAFETY DATA SHEETS MUST BE SUPPLIED WHERE APPLICABLE

AUTHORIZED SIGNATURE

David J. West

VENDOR

PELICAN

TS250 Internet-Enabled Thermostat with Integrated CO^2 Sensor

The Pelican Internet-Enabled Thermostat with an integrated CO^2 sensor provides commercial customers with virtual climate and air quality management. The TS250 delivers accurate temperature management, air quality (CO^2) management, leading edge energy efficiency, built-in safeties and alarming, and fine tuned comfort. Coupled with the Pelican Web App, the TS250 tracks space temperature, CO^2 levels, and HVAC operational data in real-time and historically. All information is displayed in real-time online and is viewable on any Internet-connected device.

MESH WIRELESS NETWORK

The TS250 communicates wirelessly with a GW400 to reach the Internet. Each TS250 has built-in state-of-the-art wireless mesh network communication and repeating.

FAULT ALARMING

Built-in system and space analytics with automated email or text message alerts when a fault is detected.

WEB APP

Virtual and central management of TS250 available on all smart phones, tablets, and PCs. Directly manage thermostat temperature and CO^2 levels through a web browser. Designed for intuitive control over multiple thermostats.

HISTORICAL TREND DATA

Online viewable historical data of space temperature, setpoints, HVAC demand, CO^2 level, and fan demand.

INSTALLATION

Industry standard HVAC terminals utilize existing thermostat wire. Included with TS250 is Pelican's innovative limited wiring relay pack (WM500) used in applications where there are only three (3) wires to the HVAC unit.

SCHEDULING

Through the Pelican Web App you can schedulethe TS250 thermostat for daily, 5-2, or 7-day schedules. Thermostats can also be scheduled as groups, for simple multi-thermostat management.

Specifications

POWER	
Hardwire	24VAC, 60Hz; 50 mA
Voltage Range	23 - 30VAC
Relay Current	1.0A running
COMPATIBILITY	
24VAC gas, electric, or oil heating systems. Conventional and Heat Pump	
WIRING	
Conventional	R, RC, W, W2, Y, Y2, G, C
Heat Pump	R, RC, O/B, AUX, Y, Y2, G, C
SYSTEM PROTECTION	
Four-Minute Compressor Short-Cycle Protection	
Temporary Schedule Override	
Auxiliary/Emergency Heat Efficiency Algorithm	
Keypad Lockout	
Trend Data Analytics and Fault Monitoring	
THERMOSTAT RANGE	
Operating Range	-20°F to 122°F
Differential Temperature	±0.5°F
Operating Humidity (%RH)	5 to 90% RH; non-condensing
Integrated Room CO^2 Sensor	0 – 2000 PPM; +/- 50ppm accuracy
Storage Temperature	-20°F to 160°F
SIZE	
Inch	H 3.5 x W 5.97 x D 1.5
mm	H 89 x W 150 x D 38
Horizontal Mounting	

Designed and assembled in the USA
5-Year Limited Warranty

Pelican Wireless Systems | 2655 Collier Canyon Road, Livermore CA 94551
(888) 512-0490 | sales@pelicanwireless.com

EXHIBIT 2-04

5527 BAKERSFIELD CITY SCHOOL DISTRICT
MLK WELLNESS CENTER
TABLE OF CONTENTS

SECTION 102800 - TOILET ACCESSORIES

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. Private-use bathroom accessories.
2. Custodial accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include the following:

1. Construction details and dimensions.
2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Material and finish descriptions.
4. Features that will be included for Project.
5. Manufacturer's warranty.

B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated.
2. Identify products using designations indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Source Limitations: For products listed together in the same Part 2 articles, obtain products from single source from single manufacturer.

1.7 COORDINATION

A. Coordinate accessory locations (including wall recess opening) with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.8 WARRANTY

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TOILET ROOM ACCESSORIES

A. Basis-of-Design Products: Subject to compliance with requirements, provide Bobrick or comparable products by one of the following:

1. A & J Washroom Accessories, Inc.
2. American Specialties, Inc.
3. Bradley Corporation.
4. GAMCO Specialty Accessories; a division of Bobrick Washroom Equipment, Inc.
5. Tubular Specialties Manufacturing, Inc.

B. Toilet Tissue (Roll) Dispenser TP-1

1. Basis-of-Design Product: B-3888
2. Description: Roll-in-reserve dispenser with hinged front secured with tumbler lockset.
3. Mounting: Recessed.
4. Operation: Non-control, delivery with theft-resistant spindle.
5. Capacity: Designed for 5-inch-diameter tissue rolls.
6. Material and Finish: Stainless steel, No. 4 finish (satin).

C. Paper Towel (Folded) Dispenser PT-1:

1. Basis-of-Design Product: B-4262.
2. Mounting: Surface.
3. Minimum Capacity: 400 C-fold or 525 multifold towels.
4. Material and Finish: Stainless steel, No. 4 finish (satin).
5. Lockset: Tumbler type.
6. Refill Indicators: Pierced slots at sides or front.

D. Liquid-Soap Dispenser SD-1

1. Basis-of-Design Product: B-2111.
2. Description: Designed for dispensing soap in liquid or lotion form.
3. Mounting: Vertically oriented, surface mounted.
4. Capacity: 40 oz.
5. Materials: body of stainless steel, No. 4 finish (satin). Valve of black molded push button and spout, soap head-holding mushroom valve. Stainless steel spring and duckbill.

6. Lockset: Tumbler type.
7. Refill Indicator: Window type.

E. Grab Bar GB-1:

1. Basis-of-Design Product: B-6806.99.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.

    a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.

4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 36 inches minimum.

F. Grab Bar GB-2:

1. Basis-of-Design Product: B-6806.99.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.

    a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.

4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 42 inches minimum.

G. Seat-Cover Dispenser SC-1:

1. Basis-of-Design Product: B-301.
2. Mounting: Recessed.
3. Minimum Capacity: 500 seat covers.
4. Exposed Material and Finish: Stainless steel, No. 4 finish (satin).
5. Lockset: Tumbler type.

H. Mirror Unit MIR-1

1. Basis-of-Design Product: B-2908.
2. Frame: Stainless-steel angle, 0.05 inch.

    a. Corners: Welded and ground smooth.

3. Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.

    a. One-piece, galvanized-steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.

4. Size: 18” X 36”

I. Specimen Pass-Through Cabinet PTC:

1. Basis-of-Design Product: B-505.

2. Description: With self-closing doors on both sides, lock that prevents doors from both being opened at same time, and removable stainless-steel tray.
3. Nominal Wall Opening: 12 by 11-1/4 inches, width by height.
4. Material and Finish: Stainless steel, No. 4 finish (satin).

2.2 CUSTODIAL ACCESSORIES

A. Basis-of-Design Products: Subject to compliance with requirements, provide Bobrick or comparable products by one of the following:

1. A & J Washroom Accessories, Inc.
2. American Specialties, Inc.
3. Bobrick Washroom Equipment, Inc.
4. Bradley Corporation.
5. GAMCO Specialty Accessories; a division of Bobrick Washroom Equipment, Inc.
6. Tubular Specialties Manufacturing, Inc.

B. Mop and Broom Holder MBH-1:

1. Basis-of-Design Product: B-223 x 36.
2. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf.
3. Length: 364 inches .
4. Hooks: Four.
5. Mop/Broom Holders: Three, spring-loaded, rubber hat, cam type.
6. Material and Finish: Stainless steel, No. 4 finish (satin).

a. Shelf: Not less than nominal 0.05-inch-thick stainless steel.

C. Paper Towel (Folded) Dispenser PT-2:

1. Basis-of-Design Product: B-262.
2. Mounting: Surface mounted.
3. Minimum Capacity: 400 C-fold or 525 multifold towels.
4. Material and Finish: Stainless steel, No. 4 finish (satin).
5. Lockset: Tumbler type.
6. Refill Indicators: Pierced slots at sides or front.

2.3 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 GENERAL

A. Refer to Drawing Plans, Details, Notes and Interior Elevations for locations and mounting heights of all accessories. Verify all accessories can be mounted to comply with applicabl disabled access requirements per 2019 CBC Chapter 11B, Division 6 and notify Architect of any conflicts prior to installing blocking/backing, cutting-in of openings and ordering of any related materials. Provide alternative units of equal or better quality and capacity to suite the specific accessory location. Paper towel dispensers, hair dryers, napkin dispensers and similar accessories located in accessible path of travel within toilet rooms shall not protrude more than 4" from the face of the wall along the accessible route to fixtures.

B. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected

3.2 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

1. All accessories mounted on toilet partitions shall use tamper-resistant torx through bolts.

B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.

C. Install grab bars to withstand a downward load of at least 250 Ibf, when tested according to method in ASTM F 446.

1. Where mounting gab bars to toilet partitions provide stainless steel backing plate and thru-anchors (Bobrick 2583 or equal).

3.3 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 102800

SECTION 102800 - TOILET ACCESSORIES

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.

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B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

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A. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Source Limitations: For products listed together in the same Part 2 articles, obtain products from single source from single manufacturer.

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A. Coordinate accessory locations (including wall recess opening) with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.8 WARRANTY

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 TOILET ROOM ACCESSORIES

A. Basis-of-Design Products: Subject to compliance with requirements, provide Bobrick or comparable products by one of the following:

1. A & J Washroom Accessories, Inc.
2. American Specialties, Inc.
3. Bradley Corporation.
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B. Toilet Tissue (Roll) Dispenser TP-1

1. Basis-of-Design Product: B-3888
2. Description: Roll-in-reserve dispenser with hinged front secured with tumbler lockset.
3. Mounting: Recessed.
4. Operation: Non-control, delivery with theft-resistant spindle.
5. Capacity: Designed for 5-inch-diameter tissue rolls.
6. Material and Finish: Stainless steel, No. 4 finish (satin).

C. Paper Towel (Folded) Dispenser PT-1:

1. Basis-of-Design Product: B-4262.
2. Mounting: Surface.
3. Minimum Capacity: 400 C-fold or 525 multifold towels.
4. Material and Finish: Stainless steel, No. 4 finish (satin).
5. Lockset: Tumbler type.
6. Refill Indicators: Pierced slots at sides or front.

D. Liquid-Soap Dispenser SD-1

1. Basis-of-Design Product: B-2111.
2. Description: Designed for dispensing soap in liquid or lotion form.
3. Mounting: Vertically oriented, surface mounted.
4. Capacity: 40 oz.
5. Materials: body of stainless steel, No. 4 finish (satin). Valve of black molded push button and spout, soap head-holding mushroom valve. Stainless steel spring and duckbill.

6. Lockset: Tumbler type.
7. Refill Indicator: Window type.

E. Grab Bar GB-1:

1. Basis-of-Design Product: B-6806.99.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.

    a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.

4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 36 inches minimum.

F. Grab Bar GB-2:

1. Basis-of-Design Product: B-6806.99.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.

    a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.

4. Outside Diameter: 1-1/2 inches.
5. Configuration and Length: Straight, 42 inches minimum.

G. Seat-Cover Dispenser SC-1:

1. Basis-of-Design Product: B-301.
2. Mounting: Recessed.
3. Minimum Capacity: 500 seat covers.
4. Exposed Material and Finish: Stainless steel, No. 4 finish (satin).
5. Lockset: Tumbler type.

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1. Basis-of-Design Product: B-2908.
2. Frame: Stainless-steel angle, 0.05 inch.

    a. Corners: Welded and ground smooth.

3. Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.

    a. One-piece, galvanized-steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.

4. Size: 18” X 36”

I. Specimen Pass-Through Cabinet PTC:

1. Basis-of-Design Product: B-505.

2. Description: With self-closing doors on both sides, lock that prevents doors from both being opened at same time, and removable stainless-steel tray.
3. Nominal Wall Opening: 12 by 11-1/4 inches, width by height.
4. Material and Finish: Stainless steel, No. 4 finish (satin).

2.2 CUSTODIAL ACCESSORIES

A. Basis-of-Design Products: Subject to compliance with requirements, provide Bobrick or comparable products by one of the following:

1. A & J Washroom Accessories, Inc.
2. American Specialties, Inc.
3. Bobrick Washroom Equipment, Inc.
4. Bradley Corporation.
5. GAMCO Specialty Accessories; a division of Bobrick Washroom Equipment, Inc.
6. Tubular Specialties Manufacturing, Inc.

B. Mop and Broom Holder MBH-1:

1. Basis-of-Design Product: B-223 x 36.
2. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf.
3. Length: 364 inches .
4. Hooks: Four.
5. Mop/Broom Holders: Three, spring-loaded, rubber hat, cam type.
6. Material and Finish: Stainless steel, No. 4 finish (satin).

a. Shelf: Not less than nominal 0.05-inch-thick stainless steel.

C. Paper Towel (Folded) Dispenser PT-2:

1. Basis-of-Design Product: B-262.
2. Mounting: Surface mounted.
3. Minimum Capacity: 400 C-fold or 525 multifold towels.
4. Material and Finish: Stainless steel, No. 4 finish (satin).
5. Lockset: Tumbler type.
6. Refill Indicators: Pierced slots at sides or front.

2.3 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 GENERAL

A. Refer to Drawing Plans, Details, Notes and Interior Elevations for locations and mounting heights of all accessories. Verify all accessories can be mounted to comply with applicabl disabled access requirements per 2019 CBC Chapter 11B, Division 6 and notify Architect of any conflicts prior to installing blocking/backing, cutting-in of openings and ordering of any related materials. Provide alternative units of equal or better quality and capacity to suite the specific accessory location. Paper towel dispensers, hair dryers, napkin dispensers and similar accessories located in accessible path of travel within toilet rooms shall not protrude more than 4" from the face of the wall along the accessible route to fixtures.

B. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected

3.2 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

1. All accessories mounted on toilet partitions shall use tamper-resistant torx through bolts.

B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.

C. Install grab bars to withstand a downward load of at least 250 Ibf, when tested according to method in ASTM F 446.

1. Where mounting gab bars to toilet partitions provide stainless steel backing plate and thru-anchors (Bobrick 2583 or equal).

3.3 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 102800

SECTION 271000 - STRUCTURED CABLING SYSTEM

Part 1 General

1.1 Work Included

A. General

1. Provide all labor, materials, tools and equipment required for the complete installation of work called for on the Construction Drawings and described in the Scope Documentation.
2. This document describes the requirements for the contractors, products and installation relating to furnishing and installing Telecommunications Cabling systems.
3. The Horizontal Cabling System as described in this document consists of cabling, infrastructure, J-hook pathways and termination devices for Data systems.
4. Contractor will provide a bid including all labor, materials, tools and equipment required for the complete installation of work called for on the Construction Drawings and described in this Document. It is the responsibility of the Contractor to provide all material necessary to provide a complete and operable system. If the contractor feels that the system described is incomplete, they must address this in writing to the Owner/Owner's Representative before providing a bid.
5. All questions concerning non-specified product and services will be addressed to the Owner's Representative before Contactor provides a bid. Owner expects that by accepting the Contractor's bid proposal that the Contractor has provided a competent bid for a complete solution.
6. Product specifications, general design considerations, and installation guidelines are provided in this document. Quantities of telecommunications outlets, typical installation details, cable routing and outlet types will be provided as an attachment to this document.

1.2 References

A. Regulatory References

1. Contractors will comply with all requirements as specified in Section 27 0000 '1.3. – Regulatory References'.

1.3 Safety and Indemnity

A. Requirements

1. Contractors will submit the necessary documentation to demonstrate their compliance with Section 27 0000 '2.1 – Safety and Indemnity'.

1.4 Contractor Qualifications

A. Requirements

1. Contractors will submit the necessary documentation to demonstrate their compliance with Section 270000 '2.2 – Contractor Qualifications'.

1.5 Quality Assurance

A. Requirements

1. Contractors shall comply with all requirements as specified in Section 27 0000 ‘2.3 – Quality Assurance’.

1.6 Equivalent Products

A. Approved Products

1. All Products described, and Part Numbers given in this Specification are those of Hubbell unless otherwise noted.

B. Pre-Approved Equals:

1. None

C. Other Than Approved Products

1. Contractors wishing to approve a system other than those specified in this document shall do so in accordance with Section 27 000 ‘3.1 Products’.

1.7 Submittal Documentation

A. Requirements

1. The successful contractor shall provide their submittal package in accordance with the Section ‘01 20 00 – Submittal Schedule’ and Section 27 0000 ‘3.2 – Submittal Documentation’.

1.8 Acceptance

A. Requirements

1. The contractor shall comply with all requirements as listed in Section 27 0000 ‘3.3 – Acceptance’.

1.9 Warranty

A. Requirements

1. The contractor shall comply with all requirements as listed in Section 27 0000 ‘3.4 – Warranty’.

1.10 Technology Clause

A. General Requirements

1. As technology advances, it is understood that improved or enhanced products may supersede existing products in both price and performance and yet be essentially similar. This request for bids seeks to address the rapid advances in technology by allowing functionally similar or identical products that may be introduced in the future, during the term of this bid, to be included under the general umbrella of compatible product lines and are thus specifically included in this bid document.
2. Discontinued or end of life products shall be replaced with an equal product to the original specified product at no additional costs to the owner.

Part 2 Products

2.1 Work Area Subsystem

A. General

1. The Work Area shall consist of the connectivity equipment used to connect the horizontal cabling subsystem and the equipment in the work area. The connectivity equipment shall include the following options:

- Patch Cords
- Modular Inserts, Jacks and Plugs
- Faceplates

2. Category 6A Wireless Access Points Outlet Patch Cords

- All category 6A channel patch cords shall be constructed with a snagless boot, made of molded PVC, colored matched to the color of the patch cord cable.
- All category 6A channel patch cords shall be constructed with category 6A patch cable, 24 AWG, 7/32 tinned copper stranded patch cable, insulated with polyethylene and paired, jacketed with PVC, ETL Verified for ISO 11801, (UL) NEC type CM or CMR, 75º C, Article 800 CSA Type CMG.
- All category 6A channel patch cords shall be 100% factory tested to pass return loss (RL) and near-end cross talk (NEXT).
- All category 6A channel patch cords shall be manufactured using a T568-B plug-wiring format.
    - All patch cords will be delivered to the site and must be signed for by the Owner/Owner's Representative. It will be the responsibility of other to install all Work Area Data Patch Cords.
- Length:
    - Wi-Fi patch cords will be 3 feet long.
- Color:
    - Wi-Fi White
- Quantity
    - Wi-Fi Contractor will provide one (1) patch cable for each Wi-Fi data outlet.
- Hubbell Premise Part #, or approved equal:
    - Wi-Fi HCL6AW03

B. Modular Inserts and Jacks

1. Category 6 Data/Voice Jack & Camera Termination Plugs

- Jack will meet the Category 6 Standard.
- Jacks shall be 8 positions un-keyed

- Each jack shall be an individually constructed unit and shall snap mount in an industry standard keystone opening (.760" x 580")
- Jacks shall utilize a 2-layer printed circuit board to control NEXT
- Jack termination shall follow the industry standard 110 IDC.
- Jacks shall have a designation indicating Category 6 on the nose which can be plainly seen from the front of the faceplate. Bottom of jack shall have date code and an abbreviated catalog number.
- Jacks shall utilize a paired punch down sequence. Cable pair twists shall be maintained up to the IDC, terminating all conductors adjacent to its pair mate to better maintain pair characteristics designed by the cable manufacturer.
- Jacks shall terminate 22-26 AWG stranded or solid conductors.
- Jacks shall be compatible with single conductor 110 impact termination tools.
- Jacks shall be compatible with TIA/EIA 606 color code labeling
- Jacks shall have universal wiring designation.
- Jacks shall have an attached color-coded wiring instruction label housed between the IDC termination towers.
- Jacks shall be manufactured in the USA
- Jacks will be terminated according to theT568B wiring scheme
- Color:

    - Data/Voice WHITE
    - Camera Factory

- Quantity: Contractor will provide one jack for every outlet cable shown on the drawings.
- Hubbell Premise Part #, or approved equal.

    - Data/Voice HXJ6W
    - Camera SP6

2. Category 6A Wireless Access Point Jack

- Jack will meet the Category 6A Standard.
- Jacks shall be 8 positions un-keyed
- Each jack shall be an individually constructed unit and shall snap mount in an industry standard keystone opening (.760" x 580")
- Jacks shall utilize a 2-layer printed circuit board to control NEXT
- Jack termination shall follow the industry standard 110 IDC.
- Jacks shall have a designation indicating Category 6A on the nose which can be plainly seen from the front of the faceplate. Bottom of jack shall have date code and an abbreviated catalog number.
- Jacks shall utilize a paired punch down sequence. Cable pair twists shall be maintained up to the IDC, terminating all conductors adjacent to its pair mate to better maintain pair characteristics designed by the cable manufacturer.
- Jacks shall terminate 22-26 AWG stranded or solid conductors.
- Jacks shall be compatible with single conductor 110 impact termination tools.
- Jacks shall be compatible with TIA/EIA 606 color code labeling
- Jacks shall have universal wiring designation.
- Jacks shall have an attached color-coded wiring instruction label housed between the IDC termination towers.
- Jacks shall be manufactured in the USA
- Jacks will be terminated according to theT568B wiring scheme
- Color:

- Wi-Fi Purple

- Quantity: Contractor will provide one jack for every outlet cable shown on the drawings.
- Hubbell Premise Part #, or approved equal.

  - Wi-Fi HJU6AP24

C. Wall Mount and Modular Furniture Faceplates

1. Wall Plates

- Faceplates shall be UL Listed and CSA Certified
- Faceplates shall be 2.75" W x 4.5" H (69.8 mm x 114.3 mm)
- Faceplates shall provide for TIA/EIA 606 compliant station labeling
- Faceplates shall have plastic covers over the mounting screws that can be replaced with a clear plastic window over a printable paper insert
- Color: WHITE or STAINLESS STEEL.

  - Contractor will field verify and match finish to the existing electrical outlet face plate cover.

- Quantity: Contractor will provide one single gang faceplate for each outlet shown on the drawings.
- Hubbell Premise Part #, or approved equal.

  - WHITE

    - 1 Port IFP11W
    - 2 Port IFP12W
    - 3 Port IFP13W
    - 4 Port IFP14W
    - 6 Port IFP16W

  - STAINLESS STEEL

    - 1 Port SSFL11
    - 2 Port SSFL12
    - 3 Port SSFL13
    - 4 Port SSFL14
    - 6 Port SSFL16

2. Blank Insert

- Color: Blank Insert to be WHITE –
- Quantity: Contractor will provide one insert for every unused port in a faceplate.
- Hubbell Wiring, Part #: SFBW10, or approved equal.

3. Wall Phone Plates

- Faceplate shall be a two-piece design, including a steel base and a stainless-steel cover plate.
- Faceplates steel base shall incorporate six screw terminals, one 6 position jack and an insulating plastic sleeve.

- Faceplate shall be equipped with screw studs to be used as the mounts for wall hung telephones.
- Color: Faceplate to be STAINLESS STEEL
- Quantity: Contractor will provide one faceplate for each Intercom Handset outlet shown on the drawings.
- Allen Tel, Part #: AT630A-6, or approved equal. Tragic

4. Blank Wall Plates

- Faceplate shall be constructed from stainless steel.
- Faceplates shall be UL Listed and CSA Certified
- Faceplates shall be 2.75" W x 4.5" H (69.8 mm x 114.3 mm) for single gang.
- Color: Faceplate to be STAINLESS STEEL
- Quantity: Contractor will provide one faceplate for each unused data/voice/video/intercom outlet shown on the drawings.
- Hubbell Wiring Part #: S13, or approved equal.

5. Surface Mount Raceway Insert –

- Inserts for Hubble PB2, PB3, and PS3 Device Mounting Brackets
- Insert shall allow for two category 6 jacks to be mounted flush.
- Insert shall match the color of the Raceway installed.
- Color: Faceplate to be IVORY
- Quantity: Contractor will provide one 2port insert for each outlet in the Surface Mount Raceway shown on the drawings.
- Hubbell Part #: KP2162 or approved equal.

2.2 Horizontal Distribution Cabling

1. The horizontal distribution cabling system is the portion of the telecommunications cabling system that extends from the Work Area (WA) telecommunications outlet/connector to the horizontal cross-connect in the Telecommunications Room (TR).

- Cabling Support System
- Copper Station Cabling
- Copper Cross-Connect Cabling

B. Cabling Support System

1. J-Hooks

- Cable supports shall provide a bearing surface of sufficient width to comply with required bend radii of high-performance cables; cULus Listed.
- Cable supports shall have flared edges to prevent damage while installing cables.
- Cable support system shall provide fasteners that allow them to be mounted to wall, concrete, joist, tee-bar wire, treaded rod, beams and raised floor supports.
- Fasteners shall have the ability to either be factory or jobsite assembled; rated for indoor use in non-corrosive environments; cULus Listed.
- Fastener to with one non-continuous cable support, factory or jobsite assembled.
- Color: NA
- Quantity: Contractor will provide quantities of j-hooks and hanger accessories in the amount necessary to support all horizontal cabling every 4-5 feet.
- Part #:

- ERICO CAT425
- Cooper B-Line BCH12, BCH21, BCH32, BCH64 and accessories.

C. Copper Station Cable

1. Category 6 Data/Voice, Camera, and Intercom Unshielded Twisted Pair (UTP) Cable

- Cable will meet or exceed the proposed requirements of ANSI/TIA/EIA 568-B.2, 568-B.2 Addendum #1 and ISO/IEC 11801 Category 6 Cable Standard for: NEXT and ELFEXT (Pair-To-Pair and Power Sum), Insertion Loss (Attenuation), Return Loss, and Delay Skew.
- Cable shall be proven to support Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, IEEE 802.3af Power Over Ethernet for VoIP, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps, 1.2 and 2.4 Gbps.
- The cable shall consist of four unshielded twisted pairs of thermoplastic insulated bare copper enclosed in a thermoplastic jacket.
- All cable shall conform to the requirements for communications circuits defined by the National Electrical Code (Article 800) and the Canadian Building Code. Cable listed to NEC Article 800-51(a) will be used for "Plenum" installations. Cable listed to NEC Article 800-51(b) shall be installed in vertical runs penetrating more than one floor.
- Cable shall have been certified with the UL 1666 Vertical Tray Flame Test.
- Cable shall be available in a Plenum, Riser and Indoor/Outdoor rated jackets.
- Contractor will use the indoor/outdoor rated cable for all locations where the cable pathway goes underground and/or run in exterior conduit.
- The listed Category 6 cables in this specification are manufactured by Mohawk/CDT. All other manufactures eligible for Hubbell's Certified Premise Solution also have been pre-approved.
- Color:
  - Data/Voice BLUE
  - Camera WHITE
  - Intercom YELLOW
- Quantity: See Drawing for quantity and installation details.
- Part#:
  - For Riser Application:
    - Data/Voice Hubbell C6RREB
    - Camera Hubbell C6RREW
    - Intercom Hubbell C6RREY
  - For Plenum Application:
    - Data/Voice Hubbell C6RPEB
    - Camera Hubbell C6RPEW
    - Intercom Hubbell C6RPEY
  - For Indoor/Outdoor Application:

- Data/Voice, Mohawk PN# M58722 (all cable jackets will be BLACK)

2. Category 6A Wireless Access Point Unshielded Twisted Pair (UTP) Cable

- Cable will meet or exceed the proposed requirements of ANSI/TIA/EIA 568-B.2, 568-B.2 Addendum #1 and ISO/IEC 11801 Category 6 Cable Standard for: NEXT and ELFEXT (Pair-To-Pair and Power Sum), Insertion Loss (Attenuation), Return Loss, and Delay Skew.
- Cable shall be proven to support Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, IEEE 802.3af Power Over Ethernet for VoIP, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps, 1.2 and 2.4 Gbps.
- The cable shall consist of four unshielded twisted pairs of thermoplastic insulated bare copper enclosed in a thermoplastic jacket.
- All cable shall conform to the requirements for communications circuits defined by the National Electrical Code (Article 800) and the Canadian Building Code. Cable listed to NEC Article 800-51(a) will be used for "Plenum" installations. Cable listed to NEC Article 800-51(b) shall be installed in vertical runs penetrating more than one floor.
- Cable shall have been certified with the UL 1666 Vertical Tray Flame Test.
- Cable shall be available in a Plenum, Riser and Indoor/Outdoor rated jackets.
- Contractor will use the indoor/outdoor rated cable for all locations where the cable pathway goes underground and/or run in exterior conduit.
- The listed Category 6 cables in this specification are manufactured by Mohawk/CDT. All other manufactures eligible for Hubbell's Certified Premise Solution also have been pre-approved.
- Color:
  - Wi-Fi BLUE
- Quantity: See Drawing for quantity and installation details.
- Part#:
  - For Riser Application:
    - Wi-Fi Hubbell C6ASRB
  - For Plenum Application:
    - Wi-Fi Hubbell C6ASPB
  - For Indoor/Outdoor Application:
    - Wi-Fi, Mohawk PN# M58722 (all cable jackets will be BLACK)

D. Horizontal Copper Cross-Connect Cabling

1. Voice Cross-Connect Cabling

- Cable shall meet and/or exceed the UL Listed Type CMR and the ANSI/ICEA S-80-576 standard.
- Core Construction

- Conductors: Solid-copper conductors, 24 AWG.
- Insulation: Flame retardant semi-rigid PVC.
- Core Assembly: Cable core will be made up of 100 pair units consisting of four (4) 25 pair sub-units. Each group individually identifiable by color coded unit binders.

- Jacket: Gray, flame retardant PVC jacket.
- Color: Voice cable jacket will be GRAY
- Quantity: See Drawing for quantity and installation details. The number of 25-pair cable between the MDF and the IDF shall be derived by multiplying the number of pairs required for the cross-connect by 1.25 to the nearest 25-pair increment.
- Part#: Equal to Mohawk Cable:

  - 12 pair = PN# 09-094-02 – Superior Essex
  - 25 pair = PN# M58141
  - 50 pair = PN# M58522
  - 100 pair = PN# M585201

2.3 Backbone Cabling

A. General

1. The backbone cabling system is the portion of the telecommunications cabling system that extends from the Intermediate Distribution Frame (IDF) to the Main Distribution Frame (MDF).

   - Fiber Optic Backbone Cabling
   - Copper Backbone Cabling

B. Fiber Optic Backbone Cabling –

1. Data System Backbone Cabling

   - Cable shall be UL/cUL OFNR/OFN FTA rated and be Flame Resistant in accordance with the UL 1666.
   - Cable shall an indoor/outdoor rated jacket.
   - Cable shall be constructed utilizing a loose tube design.
   - Cable will be fully water blocked combining overall water blocking tape and a moisture blocking gel for each individual tube.
   - Cable will maintain the following:

     - Crush Resistance (EIA-455-41) = 2000 N/cm
     - Impact Resistance (EIA-455-25) = 2000 Impacts w/1.6 N-m
     - Min Bend Radius:

       - Long Term - No Load = 15x Cable diameter
       - Short Term – Load = 20x Cable diameter

     - Operating Temp. = -40°C to +70°C
     - Storage Temp. = -40°C to +80°C

   - Cable shall be constructed of 50/125µ Laser Optimized rated glass capable of:

     - 1 Gigabit Ethernet Link at 1000m/600m (@850nm/1300nm)

- 10 Gigabit Ethernet Link at 300m/300m (@850nm/1300nm)

- The Fiber Optic Cable in this specification is manufactured by Mohawk/CDT. All other manufactures eligible for Hubbell's Certified Premise Solution that meet and/or exceed the below specifications have also been pre-approved.
- Color: Fiber Optic cable jacket will be BLACK
- Quantity: See Drawing for quantity and installation details.
- Hubbell Premise Part #:

  - 12 Strand Multi Mode Fiber HFCD14012R4BK

C. Copper System Backbone Cabling

1. Voice & Intercom System Backbone Cabling

- Cable shall meet or exceed those specified in RUS Bulletin 1753F-208 (REA PE-89)
- Core Construction

  - Conductors: Solid, annealed copper, 24 AWG unless otherwise noted on design documents.
  - Insulation: Dual insulation consisting of an inner layer of foamed polyolefin skin, colored coded in accordance with industry standards
  - Core Assembly: Cables of 25 pairs and less formed by assembling pairs together in a single group. Cables of more than 25 pairs formed by twisted pairs arranged in groups with each group having a color coded unit binder.
  - Filling Compound: The entire core assembly completely filled with ETPR compound, filling the interstices between the pairs and under the core tape.
  - Core Wrap: Non-hygroscopic dielectric tape applied longitudinally with an overlap.
  - Sheath Construction
  - Aluminum Shield: Corrosion protected plastic coated, corrugated 0.008" aluminum tape.

- Jacket: Black, linear low-density polyethylene.
- Color: Voice cable jacket will be BLACK
- Quantity: See Drawing for quantity and installation details. The number of 25-pair cable between the MDF and the IDF shall be derived by multiplying the number of pairs serving the individual telephone handsets by 1.25 to the nearest 25-pair increment.
- Part#: Equal to General Cable:

  - 12 pair = PN#09-094-02 – Superior Essex
  - 25 pair = PN# 7525758
  - 50 pair = PN# 7525793
  - 75 pair = PN# 7525801
  - 100 pair = PN# 7525819
  - 200 pair = PN# 7525835

2.4 Telecommunication Room

A. General Requirements

1. The Telecommunication Room (TR) includes those products that terminate horizontal and backbone cabling subsystems and connect then to the network equipment.

- Patch Cords
- Horizontal Cabling Termination Equipment
- Backbone Cabling Termination Equipment
- Cabinets, Racks, and Enclosures
- Cable Support System

B. Patch Cords

1. Category 6 Data/Voice & Camera TR Patch Cords

- TR Copper Patch Cords shall comply with those specified in 2.1 Work Area Subsystem, A. Patch Cords, 1. Category 6 Data Outlet Patch Cords
- All patch cords will be delivered to the site and must be signed for by the Owner/Owner's Representative. It will be the responsibility of other to install all TR Data and Voice Patch Cords.
- Color:
  - Data/Voice BLUE
  - Camera RED
- Quantity: Contractor will provide one patch cord for every data and voice outlet cable shown on the drawings. Contractor will provide the quantity of different length patch cords as follows:
- Part#:
  - Data/Voice Patch Cords
    - 3-Foot HCL6B03
  - Camera Patch Cords
    - 3-Foot HCL6R03

2. Category 6A Wireless Access Points TR Patch Cords

- TR Copper Patch Cords shall comply with those specified in 2.1 Work Area Subsystem, A. Patch Cords, 1. Category 6A Data Outlet Patch Cords
- All patch cords will be delivered to the site and must be signed for by the Owner/Owner's Representative. It will be the responsibility of other to install all TR Data and Voice Patch Cords.
- Color:
  - Wi-Fi PURPLE
- Quantity: Contractor will provide one patch cord for every data and voice outlet cable shown on the drawings. Contractor will provide the quantity of different length patch cords as follows:
- Part#:
  - Wi-Fi Patch Cords

- 3-Foot HCL6AP03

3. Fiber Patch Cords

- Patch Cords shall be a Duplex LC to LC 50/125µm "Laser Optimize" Graded-Index Multimode Fiber Patch Cord.
- All patch cords shall be factory polished and 100% optically tested for superior performance.
- Cables shall have a Mated Pair MM Insertion Loss of less than 0.60 dB (0.25 dB Typical).
- Cable Retention: > 25 pounds
- All optical, mechanical and environmental performance shall meet and/or exceed the TIAEIA-568-B.3 specifications.
- Fiber patch cords will be 1-meter long.
- Color: NA
- Quantity: Contractor will provide two fiber patch cords for every New fiber optic backbone cable run shown on the drawings.
- Part#: DFRCLCLCF1MM

C. Horizontal Cable Termination Equipment

1. Modular Unloaded Patch Panels (Only 48-Port Patch Panels is Acceptable)

- Panels shall be made of black anodized aluminum in 24-, 48-, and 96- port configurations.
- Panels shall have modular jacks employing a tri-plane staggered contact array with a flat "hairpin" contact design made of Beryllium copper with a minimum 50-micro-inch gold plating on contact surfaces over 50-100 micro-inch of nickel compliant with FCC part 68.
- Panels shall be equipped with 110-style termination made of fire retardant UL 94V0 rated thermoplastic and tin lead solder plated IDC.
- Panels shall have optional rear cable support bar for strain relief. Cable support bar shall attach to the rear of the patch panel itself without the use of additional fasteners or screws.
- Panels shall have self-adhesive, clear label holders and white designation labels provided with the panel for each row of 24 ports.
- Panels shall provide wiring identification & color code and maintain an in-line, paired punch down sequence that does not require the splitting of conductors from individual cable pairs.
- Panels shall terminate 22-26 AWG solid conductors, maximum insulated conductor outside diameter 0.050".
- Panels shall be ANSI/TIA/EIA-568-B.1, B.2 and ISO/IEC 11801 category 6 compliant.
- Panels shall be UL LISTED 1863 and CSA certified.
- Panels shall be made by an ISO 9002 Certified Manufacturer.
- Panels installed in a 4-connector channel with a category 6 modular jack, and category 6 patch cords, all from the same manufacturer, and a qualified category 6 cables shall meet or exceed the requirements of Draft 5 of the TIA UTP Systems Task Group PN3727, Category 6 Draft Addendum to the ANSI/TIA/EIA-568-B.2 standard.
- Color: Patch Panel shall be BLACK
- Quantity: See Drawing for quantity and installation details. The number of patch panels to be supplied shall be derived by multiplying the number of data/voice

cables being terminated at the individual TR by 1.25 and providing additional panels in the nearest 24 port increment.

- Part#:
    - 24 port Category Patch Panel, HWS14608C
    - 48 port Category Patch Panel, HWS14609C
        - *Provide one Cable Management Bar, PN# PCBLMGT, for each 24 ports.

D. Horizontal Voice & Intercom Cross-Connect 66 Wiring Blocks

1. Wall Mount

- Blocks shall be available in a 25 pair unit.
- Blocks shall be wall mounted.
- Wiring blocks shall be available as kits that include the wiring blocks, the proper number of connecting clips, wire management and label strips.
- Blocks shall be constructed of a UL94 V0 rated polycarbonate blend.
- Blocks shall be mounted to a rugged 16 ga steel distribution frame. Frame shall support the 66 blocks and allow for a through for cables to be routed through the rear of the blocks directly to the termination point.
- Blocks shall be UL VERIFIED for TIA/EIA-568-B compliance.
- Color: NA
- Quantity: See Drawing for quantity and installation details.
- Part#: 6 pair block, PN# HPW66B16
- Part#: 25 pair block, PN# HPW66B425
- Accessories to be provided with each installed 66 Block:
    - Mounting Bracket PN# HPW89D

E. Backbone Cable Termination Equipment

1. Fiber Optic Cassette

- ETL Tested per TIA/EIA-568-C.3
- MM Mated Pair Insertion Loss: <0.5dB (0.35dB typical)
- Return Loss: <-35dB
- Operating temperature: 0-70°C
- Materials:
    - Connector ferrule: Zirconia ceramic
    - Connector body/nut: Nickel plated brass/zinc or polymer
- Strain relief boot: Flame retardant (UL-Rated 94-V0) polymer
- Color: Aqua
- Quantity: See Drawing for quantity and installation details.
- Part#: OCLC50G4CVI

F. Copper Termination Panels

1. Voice 110 Wiring Blocks
2. Wall Mount

- Blocks shall be available in a 300-pair unit.
- Blocks shall be wall mounted.
- Wiring blocks shall be available as kits that include the wiring blocks, the proper number of 5 pair connecting clips, wire management and label strips.
- Blocks shall be constructed of a UL94 V0 rated polycarbonate blend.
- Blocks shall be mounted to a rugged 16 ga steel distribution frame. Frame shall support the 110 blocks and allow for a through for cables to be routed through the rear of the blocks directly to the termination point.
- Blocks shall be UL VERIFIED for TIA/EIA-568-B compliance.
- Color: NA
- Quantity: See Drawing for quantity and installation details. The number of 110 blocks to be supplied shall be derived by multiplying the number of voice/intercom cables being terminated at the individual TR by 1.25 and providing additional panels in the nearest 300 pair block increment.
- Part#: 300 pair block, PN# 110WMK

3. OSP Protection Panels

- 110 connector input and output
- wall or frame mountable
- designed with an internal splice chamber and cover over incoming and outgoing connections and protection modules
- stackable to allow for future service expansion
- equipped with an internal fuse link
- external ground connectors accept 6-14 AWG ground wire
- accommodates industry standard 5 pin protection modules
- designed to exceed the requirements set forth in Underwriters Laboratory's UL497
- Color: NA
- Quantity: One protection panel will be installed per IDF home run to the MDF. Protection panels are not required at the IDF side of the cable run.

4. Part#: Circa Enterprise inc. –
   25 pair block, PN# 1880ECA1-25
   50 pair block, PN# 1880ECA1-50
   100 pair block, PN# 1880ECA1-100

G. Fiber Termination Panels

1. MDF Rack Mount Fiber Panel

- Panels shall be constructed of cold rolled 16 ga. steel with a black powder paint finish and provide for fully enclosed fiber patching and termination.
- Panels shall have a removable smoked Plexiglas front cover with optional lock kit. The panel shall have a removable top, front and rear covers. The panel adapter tray shall be removable from the front of the panel by sliding the tray forward. Panels shall come with rack mounting brackets that allow it to be mounted with the front cover flush with the front of the rack, or with the front of the panel extended 5.0" in front of the rack.
- Panels shall be 2 rack spaces, accepting 9 adapter panels.
- Adapter panels shall be available with SC multimode adapters. Adapter shall have a zirconia alignment sleeve.
- Panel shall have a splice tray mounting stud incorporated into the base for mounting of mechanical or fusion splice trays. Adapter tray shall have cable

management anchor points and come with cable anchors allowing for the maintenance of the incoming cable with the proper minimum bend radius.

- Panels shall have four cable entrance ports on the top and 2 on the bottom, which are covered by knock outs. Panels shall have two jumper ports in the bottom at the front of the panel with plastic dust covers for routing of jumpers.
- Color: Fiber Panel will be BLACK
- Quantity: See Drawing for quantity and installation details.
- Hubbell Premise Part #, or approved equal:
    - 4U Rack Mount Panel FCR4U15SPL
    - Insert Panels
        - Blanks FSPB

2. IDF Rack Mount Fiber Panel

- Panels shall be constructed of cold rolled 16-gauge steel with a black powder paint finish.
- The panel shall have a hinged swing-out fiber drawer. Panels shall come with rack mounting brackets that allow it to be mounted on a 19" or 23" rack. Panel shall occupy no more than one rack space.
- Panel shall be constructed to accept up to 3 adaptor panels.
- Panels shall have cable entrance points in the rear, which are covered by knock-outs
- Color: Fiber Panel will be BLACK
- Quantity: See Drawing for quantity and installation details.
- Hubbell Premise Part #, or approved equal:
    - Rack Mount Panel
        - 1U Rack Mount Panel FCR1U3SPL
    - Insert Panels
        - Blanks FSPB

3. IDF Wall Mount Fiber Panel

- Panels shall be constructed of cold rolled 16-gauge steel with a black powder paint finish.
- Panel shall be constructed to accept up to 1 adaptor panels.
- Color: Fiber Panel will be BLACK
- Quantity: See Drawing for quantity and installation details.
- Corning Cabling System Part #, or approved equal:
    - Wall Mount Panel
        - Single Panel Housing SPH-01P

H. Cabinets, Racks, and Enclosures

1. Contractor will provide the following 'MDF/IDF' Cabinets, Racks, Enclosures and components based on the number of cables to that will be terminated:

1. Floor Mount Cabinets

- Width: 750.0mm 29.52” (19” EIA)
- Height: 1991.0mm 78.38” (42 RMU)
- Depth: 39”
- Color: Floor Mount Cabinet will be or BLACK
- Quantity: See Drawing for quantity and installation details.
- Part#:
  Floor Mount Cabinet
  AR3150 NetShelter SX 42U
- Contractor to provide 3 for MDF

2. Floor Mount 2-post Racks

- Overall dimensions of 86.0”H x 29.1” W x 18.6” D
- Provides 45U x 19” W of mounting space
- Channel or Trough Depth 3”
- Rack shall provide High-density cable management fins provide an integrated vertical pathway for premise cabling and facilitate adherence to bend radius requirements
- Features EIA-310-D, Universal spacing, threaded #12-24 mounting holes
- Frame components are aluminum, while cable rings are an engineered polymer
- Finished with black, powder coat paint
- Supports 1,000 lb. [110 lb. maximum. per cable fin]
- Color: BLACK
- Quantity: See Drawing for quantity and installation details.
- Part #’s:

  - 2-Post Rack HPW84RR19
  - Vertical Management VM820

3. Wall-Mounted Cabinets

- Wall-mounted cabinets shall be manufactured from steel sheet.
- Each cabinet will have a rear panel that attaches to the wall, a hinged cabinet body that swings open from the rear panel providing easy access to the rear of equipment and a locking front door.
- The rear panel will provide cable access with pre-punched knockouts, up to 3”, for conduit along the top and bottom edges of the panel. There will also be cutouts in the back of the rear panel so that cables can enter the panel through the wall. The rear panel will provide attachment points for accessory equipment mounting brackets and cable tie points within the panel (cabinet).
- The cabinet body will include a single pair of vertical 19” EIA equipment mounting rails. The mounting rails will be EIA-310-D compliant with the Universal hole pattern. Mounting holes will have #12-24 threads.
- Mounting rails will be adjustable in depth so that they can be positioned at any point within the cabinet body. The design of all cabinets will allow an additional pair of mounting rails (for a total of two pairs of mounting rails per cabinet) to be added to the cabinet.
- The wall-mount cabinet shall provide a hinge design that attaches the cabinet body and the rear panel and allow the rear panel to be removed during installation. The hinge design will allow the cabinet body to open at least

90°. The hasp used to secure the rear panel and the cabinet body together will assist in drawing the components together during the locking action.

- The cabinet body will include vents that are designed to accept fan kits.
- The front door will be hinged and locking. The front door and rear panel will be keyed alike. The front door will have rounded edges and corners. The cabinet body will allow the front door to be attached so that it will swing open from the right or left. The cabinet manufacture shall provide an option for a solid or a tinted plexi-glass window front door. The plexi-glass in doors shall be bronze acrylic (not clear) with a UL flammability classification of 94HB or better.
- Finish shall be epoxy-polyester hybrid powder coat (paint).
- The cabinet shall have the option of being delivered fully assembled. All cabinets will include installation hardware (hex lag screws) for wood studs and 50 each #12-24 equipment mounting screws.
- Load bearing capacity for cabinets that wall-mount will be a minimum of 200 pounds per cabinet.
- Cabinets that are wall-mount only will be certified and UL Listed to standard UL 60950 under category NWIN.
- Color: Wall Mount Cabinet will be White
- Quantity: See Drawing for size, quantity and installation details.
- Part#:

    - Hubbell RE4X
    - Great Lakes GL24WE-B-0
    - Great Lakes GL48WMCMM-B-SH-AF-CM
    - 11900-724 Chatsworth Cube-it
    - Accessories to be provided with each installed cabinet:

        - Sound Dampening Kit REKS
        - Fan Kit REKF
        - Fan Filter Kit REKFF

I. Telco Backboards

1. Backboards shall be 4’ x 8’ x .75” void free plywood (ACX Plywood with the “A” side turned out).
2. Sheets shall be but to size for the application intended.
3. The plywood shall be painted with two coats of white fire-retardant paint.

    - Flame Stop III paint additive ASTM E-84, NFPA 255, UL 723
    - Add one pint of Flame Stop III and one pint of water to one gallon of latex-based paint.

Part 3 Execution

3.1 Installation

A. Work Area Outlets Installation

1. No more than 12” of cable shall be stored in an outlet box, modular furniture raceway, or insulated walls.
2. Bend radius of the cable in the termination area shall not be less than 4 times the outside diameter of the cable.

3. The cable jacket shall be maintained to within 12.7mm (½ inch) of the termination point.
4. All UTP cables shall have no more than 12.7mm (½ inch) of pair untwist at the termination point.
5. Data jacks, unless otherwise noted in drawings, shall be located in the top position(s) of each faceplate. Data jacks in horizontally oriented faceplates shall occupy the left-most position(s).
6. Voice jacks, unless otherwise noted in drawings, shall occupy the next position(s) below the data on the faceplate. Voice jacks in horizontally oriented faceplates shall occupy the position left of the data jack.
7. Video jacks, unless otherwise noted in drawings, shall occupy the bottom position(s) on the faceplate. Video jacks in horizontally oriented faceplates shall occupy the position left of the data/voice jack.
8. All faceplates installed shall be level.
9. All outlets will be labeled according to the approved labeling scheme.
10. Each faceplate shall be machine labeled. The labeling shall be placed on the faceplate so that the individual jack can be clearly identified by its associated label.
11. Cables shall be identified by a self-adhesive label in accordance with the Identification and Labeling section of this specification and ANSI/TIA/EIA-606. The cable label shall be applied to the cable no further than 6" behind termination module, behind the faceplate on a section of cable that can be accessed by removing the cover plate.

B. Horizontal Distribution Cable Installation

1. Cable shall be installed in accordance with manufacturer's recommendations and best industry practices.
2. Tie Wraps will not be allowed for supporting, bundling and/or dressing of any station cables on this project.
3. Contractor will provide a three foot "service loop" for all station cables. The service loop will be coiled and secured using Velcro in the accessible ceiling at the conduit stub to the work area outlet box.
4. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in all "common" conduit runs. "Common" Conduit Runs are those that house more than one cable or set of cables that do not specifically feed a Work Station Outlet. Examples of "Common" Conduit Runs are: floor/ceiling penetrations, stub-throughs, distribution conduits, all conduits between J-boxes, etc.
5. Cable raceways shall not be filled greater than the TIA/EIA-569-A maximum fill for the particular raceway type or 40%.
6. Cables shall be installed in continuous lengths from origin to destination (no splices) except for transition points, or consolidation points.
7. The cable's minimum bend radius and maximum pulling tension shall not be exceeded.
8. Pulling tension on 4-pair UTP cables shall not exceed 25-lb for a four-pair UTP cable.
9. The Cable Support System shall be installed in such away that will allow for future cables to be added and to provide sufficient protection of all cable.
10. For all installs where station cables are not installed in a continuous conduit run the following guidelines will apply. The Contractor will be responsible to reinstall all cables and pathways that do not meet with the following at no additional cost to the Owner:
11. J-hooks shall be installed to support all station cables every 4ft to 5ft.
12. All pathways shall be run at right angles. No diagonal pathways will be allowed unless otherwise noted on the drawings.
13. Horizontal cables shall be bundled in groups of no more than 25 cables per Cooper B-Line's BCH21 J-hook, no more than 40 cables per Cooper B-Line's BCH32 J-hook, and no more than 64 cables per Cooper B-Line's BCH64 J-hook.
14. At no point shall cable(s) rest on acoustic ceiling grids, acoustic panels, or lighting fixtures.

15. All cables will be installed so that there is a minimum of 3” of clearance above all ceiling grid and tiles.
16. All cables will be installed so that there is a minimum of 12” of clearance above all florescent lighting.
17. All cables will be installed so that there is a minimum of 6” of clearance from all fire alarm and electrical system conduits.
18. Cables shall not be attached to the ceiling grid or lighting fixture wires. The contractor will provide their own carriers wires to support their horizontal cabling.
19. All cables shall be installed above fire-sprinkler systems and plumbing system fixtures and devises. Cables shall not be attached to or supported by these fixtures and/or their ancillary equipment or hardware.
20. The cable system and support hardware shall be installed so that it does not obscure any valves, fire alarm conduit, boxes, or other control devices.
21. Contractor is responsible for sealing around all cables that penetrate fire rated barriers.
22. Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the contractor prior to final acceptance at no cost to the Owner.

C. Horizontal Cross-Connect Installation

1. Cables shall be dressed and terminated in accordance with the recommendations made in the TIA/EIA-568-A standard, manufacturer's recommendations and best industry practices.
2. The cable jacket shall be maintained to within 12.7mm (½ inch) of the termination point.
3. All UTP cables shall have no more than 12.7mm (½ inch) of pair untwist at the termination point.
4. Bend radius of the cable in the termination area shall not exceed 4 times the outside diameter of the cable.
5. All cables shall be neatly bundled and dressed continuously from the entrance point of the Telecommunications Room to their respective panels or blocks. Each panel or block shall be fed by an individual bundle separated and dressed back to the point of cable entrance into the rack or frame. Contractor will use Velcro strip to bundle cables together. The use of Tie –Wraps is not permitted.
6. Each cable shall be clearly labeled on the cable jacket behind the patch panel at a location that can be viewed without removing the bundle support ties. Cables labeled within the bundle, where the label is obscured from view shall not be acceptable.

D. Backbone Cable Installation

1. Backbone cables shall be installed separately from horizontal distribution cables.
2. Where possible the backbone and horizontal cables shall be installed in separate conduits.
3. Where backbone cables and distribution cables are installed in a cable tray or wireway, backbone cables shall be installed first and bundled separately from the horizontal distribution cables.
4. Pulling tension on Backbone cables shall not exceed the manufacture’s limitations.
5. The minimum bend radius for all Backbone cables is 16 times the cable diameter or the manufactures specification, whichever is greater.
6. All OSP cables may not penetrate more than 50ft into the buildings before be terminated or splices to cable with a fire resistant jacket, unless the jacket is indoor/outdoor rated.
7. A pull cord (nylon; 1/8" minimum) shall be co-installed with all cable installed in any conduit.
8. A pull cord (nylon; 1/8" minimum) shall be installed with all empty OSP and Entrance Facility conduit.
9. All backbone cables shall be securely fastened to the sidewall of the TR on each floor.

10. Backbone cables spanning more than three floors shall be securely attached at the top of the cable run with a wire mesh grip and on alternating floors or as required by local codes.
11. Vertical runs of cable shall be supported to messenger strand, cable ladder, or other method to provide proper support for the weight of the cable.
12. Large bundles of cables and/or heavy cables shall be attached using metal clamps and/or metal banding to support the cables.

E. Backbone Cross-Connect Installation

1. Cables shall be dressed and terminated in accordance with the recommendations made in the TIA/EIA-568-A document, manufacturer's recommendations and best industry practices.
2. Bend radius of the cable in the termination area shall not exceed 16 times the outside diameter of the cable.
3. All cables shall be neatly bundled and dressed continuously from the entrance point of the Telecommunications Room to their respective panels or blocks.
4. Contractor will provide a minimum of a 3 foot “service loop” for each backbone cable before terminating to allow future rearrangement. Cables will be coiled and secured above the ceiling where possible or to the Telco Backboard where entrance point is from the floor.
5. Wall mounted termination block fields shall be installed with the lowest edge of the mounting frame 18” from the finished floor.
6. Contractor shall provide a machine label 1ft. to 2ft. from the entrance point of the TR and 6in. to 12in. from the termination point on each backbone cable. Cable shall be easily identified and fully legible without removing the bundle support ties.

F. Cabinets, Racks, Enclosures and Ladder Rack Installation

1. Wall Mount Racks/Cabinets shall be securely attached to the Telco Backboard using minimum 3/8” hardware or as required by local codes.
2. Floor Mount Racks/Cabinets shall be securely attached to the concrete floor using minimum 3/8” drop-in anchor hardware or as required by local codes.
3. All Floor Mount Racks/Cabinets will be either; secured on one side to the wall or attached to the closest wall with ladder rack.
4. All Racks/Cabinets shall be braced to meet Zone 4 seismic requirements.
5. Contractor will maintain a minimum of 36 inches of clearance from the front of the all rack/cabinets and all other obstructions.
6. Floor Mount Racks/Cabinets shall be installed to allow for a minimum of 36” from rear and all other obstructions.
7. All racks shall be grounded to the telecommunications ground bus bar.
8. Rack mount screws not used for installing patch panels and other hardware shall be bagged and left with the rack upon completion of the installation.
9. The plywood bottom edge shall be mounted vertically no less than 12” above the finished floor.
10. Contractor will provide all cutouts for the Electrical Contractors expansion rings and electric receptacles as shown on the drawings.
11. Ladder Rack must be securely attached to walls, backboards, and racks/cabinets to comply with all Zone 4 seismic requirements.
12. Ladder rack shall be installed so that there is a minimum of 8” of unobstructed clearance above rack.
13. Ladder Rack shall be installed so that there is a minimum of 12” of clearance from all: florescent lighting, electrical conduits/circuits, and fire alarm conduits/devices.

3.2 Identification and Labeling

A. General Requirements

1. The contractor shall develop and submit for approval a labeling system for the cable installation. The Owner will negotiate an appropriate labeling scheme with the successful contractor.
2. The approved system will comply with the TIA/EIA -606-A Class 2 designations and include at a minimum, identifiers for all major components of the system: telecommunication rooms, grounding bus bars, racks, cables, panels and outlets. The labeling system shall designate the cables origin and destination and a unique identifier for the cable within the system. Racks and patch panels shall be labeled to identify the location within the cable system infrastructure.
3. All label printing will be machine generated or hand-held printers using indelible ink ribbons or cartridges. Self-laminating labels will be used on cable jackets, appropriately sized to the OD of the cable, and placed within view at the termination point on each end. Outlet, patch panel and wiring block labels shall be installed on, or in, the space provided on the device.
4. All labeling information shall be recorded on the as-built drawings and all test documents shall reflect the appropriate labeling scheme.

3.3 Testing and Acceptance

A. General

1. All cables and termination hardware shall be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements of ANSI/TIA/EIA-568-A Addendum 5, TSB-67 and TSB-95. All pairs of each installed cable shall be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.
2. All cables shall be tested in accordance with this document, the ANSI/TIA/EIA standards, the Manufacturer's Warranty guidelines and best industry practice. If any of these are in conflict, the Contractor shall bring any discrepancies to the attention of the project team for clarification and resolution.
3. Contractor will notify the Owner/Owner's Representative 72 hours before commencement of testing.
4. Upon receipt of the test documentation, the Customer reserves the right to have the contractor perform a 10% witnessed "spot testing" of the cabling system to validate test results provided in the test document, at no additional cost. If a significant amount of cables are marginal and/or fail during the "spot test" Contractor will retest the entire cable plant at no additional cost.

B. Copper Cable Testing

1. Twisted Pair Cable

- All twisted-pair copper cable links (including backbone cables) shall be tested for continuity, pair reversals, shorts, opens and performance as indicated below.
- Continuity - Each pair of each installed cable shall be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as

indicated by the test unit in accordance with the manufacturers' recommended procedures, and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested prior to final acceptance.

- Length - Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set forth in the ANSI/TIA/EIA-568-A Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length shall be recorded as the length for the cable.

2. Category 6 Performance

- Follow the Standards requirements established in:

  - ANSI/TIA/EIA-568-A -TSB-67
  - Wire Map
  - Length
  - Attenuation
  - NEXT (Near end crosstalk)
  - · ANSI/TIA/EIA-568-A -TSB-95
  - Return Loss
  - ELFEXT Loss
  - Propagation Delay
  - Delay skew
  - · ANSI/TIA/EIA-568-A, Amendment 5.
  - PSNEXT (Power sum near-end crosstalk loss)
  - PSELFEXT (Power sum equal level far-end crosstalk loss)

- A Level III or better test unit is required to verify category 6 performances and must be updated to include the requirements of TSB-95 and Amendment 5. Testers will be equal to Fluke Network's DXT CableAnalyzer™ Series.
- All testers shall have been recalibrated with 6 months of use on this project. Contractor will be asked to provide proof of recalibration.
- Test results shall be automatically evaluated by the equipment, using the most up-to-date criteria from the TIA/EIA Standard, and the result shown as pass/fail. The approved Level Three tester shall provide a printed document for each test that is also available in a downloadable file using an application from the test equipment manufacturer. The printed test results shall include a print out of all tests performed, and the individual test results for each cable.

C. Fiber Optic Cable Testing

1. 50/125µ Backbone Fiber

- Each fiber strand shall be tested for attenuation with an Optical Power Meter and light source and with an Optical Time Domain Reflectometer (OTDR) for actual length and splice/connector loss. Cable length shall be verified using sheath markings. The guidelines and procedures established for Tier 1 testing in TIA/TSB-140 shall apply.
- All fiber optic cables shall be tested from the site's MDF to each fiber terminals located in the IDF. The results of OTDR testing to define the length of each riser cable shall be documented. The Contractor shall conduct a power meter (loss) test

of each fiber optic station and riser cable at both wavelengths, 850/1300nm for MM and 1310/1550nm for SM, A to B, B to A, and OSPL (OSPL is defined as La + Lb). No individual station or riser fiber link segment (including connectors) shall measure more than 2.0 dB loss. Tests shall be conducted using ANSI/EIA/TIA/EIA-526-14A, Method B. Test results evaluation for the panel to panel (backbone) shall be based on the values set forth in ANSI/TIA/EIA-568-B.1.The Contractor shall provide an electronic printout for each strand tested with the Power Meter and the OTDR.

- Where concatenated links are installed to complete a circuit between devices, the Contractor shall test each link from end to end to ensure the performance of the system. After the link performance test has been successfully completed, each link shall be concatenated and tested. The test method shall be the same used for the test described above. The evaluation criteria shall be established between the Owner and the Contractor prior to the start of the test.
- All installed cables must meet or exceed the defined standards for performance. The Contractor shall take all steps necessary to repair or replace any optic not meeting the standard.
- Fiber optic riser and station cable test results shall be provided in electronic format to the Owner.

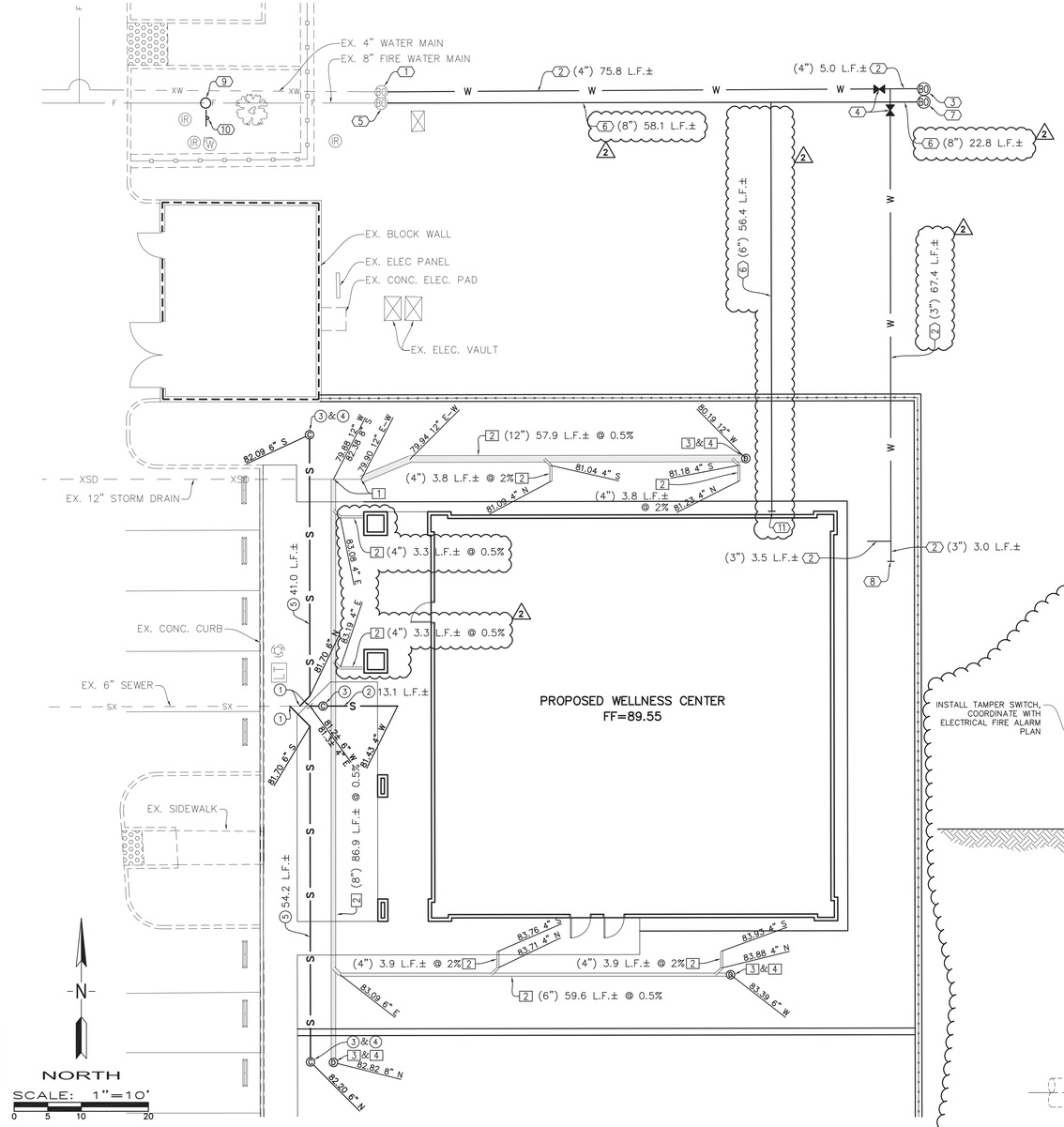
3.4 System Closeout and As-built Documentation

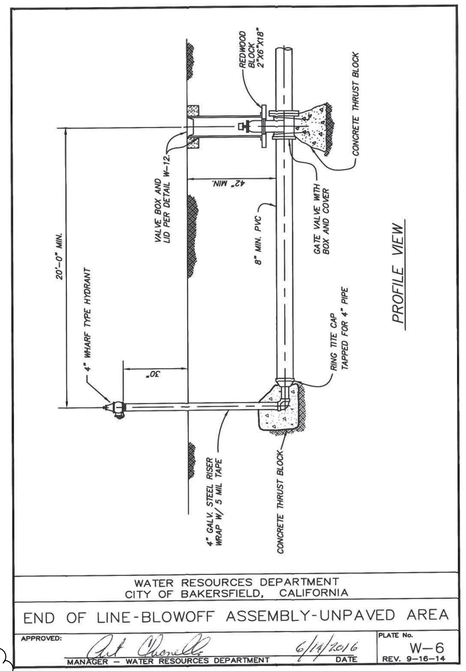
A. General Requirements

1. Upon completion of the installation, the telecommunications contractor shall provide three (3) full documentation sets to the Owner's Representative/Engineer for approval. One (1) to be a hardcopy and two (2) to be electronic copies. Documentation shall include the items detailed in the sub-sections below.
2. Documentation shall be submitted within ten (10) working days of the completion of each testing phase. This is inclusive of all test results and draft as-built drawings. Draft drawings may include annotations done by hand. Machine generated (final) copies of all drawings shall be submitted within 30 calendar days of the completion of each testing phase. At the request of the Owner's Representative/Engineer, the telecommunications contractor shall provide copies of the original test results.
3. The Owner's Representative/Engineer will request that a 10% random field re-test be conducted on the cable system, at no additional cost, to verify documented findings. Tests shall be a repeat of those defined above. If findings contradict the documentation submitted by the telecommunications contractor, additional testing can be requested to the extent determined necessary by the Engineer, including a 100% re-test. This re-test shall be at no additional cost to the Owner.
4. Test Results documentation shall be provided in two media, as listed above, one (1) hardcopy and one (1) on disk within three weeks after the completion of the project. The documentation shall be clearly marked on the outside front cover with the words "Project Test Documentation", the project name, and the date of completion (month and year). The results shall include a record of test frequencies, cable type, conductor pair and cable (or outlet) I.D., measurement direction, reference setup, and crew member name(s). The test equipment name, manufacturer, model number, serial number, software version and last calibration date will also be provided at the end of the document. Unless the manufacturer specifies a more frequent calibration cycle, an bi-annual calibration cycle is anticipated on all test equipment used for this installation. The test document shall detail the test method used and the specific settings of the equipment during the test as well as the software version being used in the field test equipment.
5. Printouts generated for each cable by the wire test instrument shall be submitted as part of the documentation package.

6. When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be documented.
7. The As-Built drawings are to include cable routes, outlet locations and the approved labeling identifiers. Their sequential number as defined elsewhere in this document shall identify outlet locations. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. The Owner will provide floor plans in paper and electronic (DWG, AutoCAD 2008) formats on which as-built construction information can be added. These documents will be modified accordingly by the telecommunications contractor to denote as-built information as defined above and returned to the Owner.
8. Contractor will provide one laminated 11”x17” drawing at each IDF that includes the building layout for that IDF, along with the outlet locations and all of the approved labeling.

END OF SECTION





WATER RESOURCES DEPARTMENT
CITY OF BAKERSFIELD, CALIFORNIA

END OF LINE-BLOWOFF ASSEMBLY-UNPAVED AREA

APPROVED: MANAGER – WATER RESOURCES DEPARTMENT — DATE 6/14/2016 — PLATE No. W-6 — REV. 9-16-14

WATER CONSTRUCTION NOTES

1. TIE INTO EXISTING DOMESTIC WATER LINE, SALVAGE AND RELOCATE BLOWOFF ASSEMBLY. CONTRACTOR SHALL VERIFY EXACT LOCATION OF WATER LINE IN FIELD AND NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
2. INSTALL PVC DOMESTIC WATER LINE, SIZE AND DISTANCE SHOWN IN PLAN VIEW.
3. STUB FOR FUTURE EXTENSION AND RE-INSTALL END OF LINE BLOWOFF ASSEMBLY PER C.O.B. STD. PLATE W-6.
4. INSTALL WATER VALVE PER DETAIL (D C1.1).
5. TIE INTO EXISTING FIRE WATER MAIN, SALVAGE AND RELOCATE BLOWOFF ASSEMBLY. CONTRACTOR SHALL VERIFY EXACT LOCATION AND SIZE IN FIELD PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
6. INSTALL C900 PVC FIRE WATER LINE, SIZE AND DISTANCE SHOWN IN PLAN VIEW. INSTALL THRUST BLOCK PER DETAIL (C C1.1).
7. STUB FOR FUTURE EXTENSION AND RE-INSTALL END OF LINE BLOWOFF ASSEMBLY PER C.O.B. STD. PLATE W-6.
8. STUB AND PLUG FOR FUTURE CONNECTIONS.
9. INSTALL POST INDICATOR VALVE PER DETAIL (A C1.1).
10. INSTALL SIGN AT POST INDICATOR VALVE WITH "WELLNESS CENTER POST INDICATOR VALVE."
11. SEE FIRE SPRINKLER PLANS FOR CONTINUATION AND FIRE RISER SPIGOT DETAIL.

NOTE: 1. INSTALL DETECTABLE WARNING TAPE OVER WATER PIPE PER PROJECT SPECIFICATIONS

SEWER CONSTRUCTION NOTES

1. TIE INTO EXISTING 6" SEWER STUB, REMOVE APPROXIMATELY 5 L.F. OF SEWER LINE AND INSTALL WYE. CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH OF EXISTING SEWER IN FIELD AND NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
2. INSTALL 4" PVC SEWER AT MINIMUM 1.0% SLOPE, DISTANCES SHOWN IN PLAN VIEW.
3. CONSTRUCT SEWER CLEANOUT PER DETAIL (B C1.1).
4. STUB AND PLUG FOR FUTURE EXTENSION.
5. INSTALL 6" PVC SEWER AT MINIMUM 1% SLOPE, DISTANCE SHOWN IN PLAN VIEW.

STORM DRAIN CONSTRUCTION NOTES

1. TIE INTO EXISTING STORM DRAIN. CONTRACTOR SHALL VERIFY EXACT LOCATION OF WATER LINE IN FIELD AND NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
2. INSTALL PVC OR HDPE STORM DRAIN. SIZE, DISTANCE, AND SLOPE IN PLAN VIEW.
3. CONSTRUCT STORM DRAIN CLEANOUT PER DETAIL (B C1.1). LID SHALL BE MARKED "DRAIN".
4. STUB AND PLUG FOR FUTURE CONNECTIONS.

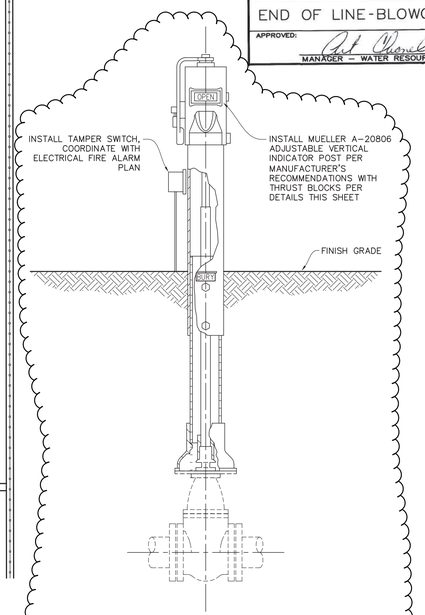
NOTE: 1. ADD 300' TO ALL DESIGN ELEVATIONS.

2. LATERAL CONNECTIONS TO MAINS THAT DO NOT OCCUR IN JUNCTION BOXES SHALL BE MADE WITH 45° ELLS OR WYES FOR CLEANOUT PURPOSES.

3. STUB SEWER, WATER, AND STORM DRAIN TO 5' FROM THE BUILDING. BUILDING PLUMBER TO MAKE FINAL CONNECTION TO BUILDING PLUMBING. VERIFY BUILDING POINTS OF CONNECTION WITH BUILDING PLANS.

NOTE TO CONTRACTOR

ALL MANHOLES AND CLEANOUTS WITHIN PROJECT LIMITS, INCLUDING EXISTING MANHOLES, SHALL BE ADJUSTED TO FINISH GRADE IN ACCORDANCE WITH CITY OF BAKERSFIELD STANDARDS. EXISTING MANHOLES MAY REQUIRE REMOVAL OF EXISTING CONE, AND REMOVAL OR "CHANGE OUT" OF BARREL RINGS.



A POST INDICATOR VALVE ASSEMBLY DETAIL
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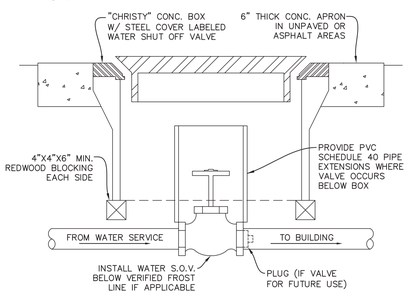

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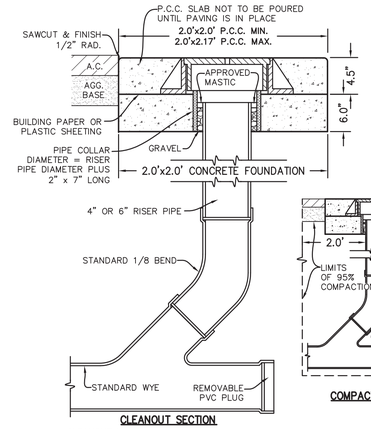
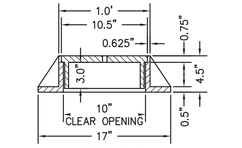


CLEANOUT SECTION

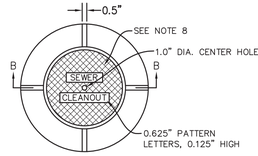
COMPACTION DETAIL

CLEANOUT NOTES:

1. ALL WORK SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE SPECIFICATIONS ENTITLED "STANDARD SPECIFICATIONS, STATE OF CALIFORNIA, BUSINESS AND TRANSPORTATION AGENCY, DEPARTMENT OF TRANSPORTATION", APPROVED CURRENT EDITION.
2. ALL CONCRETE SHALL BE CLASS "A".
3. CONCRETE SHALL HAVE NO ADDITIVES UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER.
4. CONCRETE SHALL BE CURED WITH A WHITE PIGMENTED CURING COMPOUND PER SEC. 90-7.01B OF THE STANDARD SPECS.
5. TOP OF SLAB SHALL BE TROWELED SMOOTH AND GIVEN A LIGHT BROOM FINISH.
6. 95% RELATIVE COMPACTION IS REQUIRED FOR ALL BACKFILL WITHIN 24" OF THE RISER PIPE.
7. BUILDING PAPER OR PLASTIC SHALL BE PLACED BETWEEN THE 6" CONCRETE FOUNDATION AND 4.5" SLAB.
8. FILL CAVITY BETWEEN PIPE AND COLLAR WITH GRAVEL TO WITHIN 1/2" OF TOP OF PIPE. CAULK REMAINING 1/2" WITH APPROVED MASTIC TO TOP OF PIPE FOR WATER TIGHT SEAL.
9. COLLAR SHALL BE VCP, ABS, OR PVC PIPE.
10. FINISHED PCC SLAB TO BE 1/8" MIN. AND 1/4" MAX. BELOW FINISHED PAVING SURFACE.



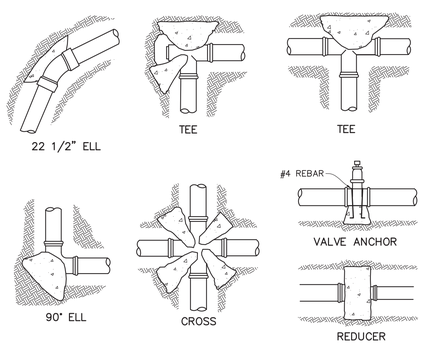
SECTION B-B



CLEANOUT FRAME & COVER

CLEANOUT COVER NOTES:

1. ALL FRAMES AND COVERS SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS PRIOR TO DELIVERY.
2. THE SEATS OF FRAMES AND BEARING FACES OF THE COVERS SHALL BE MACHINED FOR A SMOOTH NON-ROCKING FIT BETWEEN THE TWO CASTINGS.
3. CASTINGS SHALL BE THOROUGHLY CLEANED AND DIPPED TWICE IN A QUICK-DRYING, JET-BLACK ASPHALTIC COMPOUND TO PROVIDE A PROTECTIVE COATING.
4. ALL FRAMES AND COVERS SHALL BE GRAY CAST IRON, FREE FROM WARPS, CRACKS, HOLES, SWELLS AND COLD-SHOT, AND SHALL HAVE A WORKMANLIKE FINISH. HIGHWAY LOADING SHOULD BE HS 20-44.
5. CASTING SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR GRAY-IRON CASTINGS, SERIAL DESIGNATION ASTM: A-48 (LATEST REVISION), CLASS No. 30B.
6. THE NAME OF THE MANUFACTURING COMPANY SHALL BE ON THE UNDERSIDE OF THE COVER.
7. ASSEMBLY SHALL BE DESIGNED FOR HIGHWAY LOADING OF HS 20-44.
8. 2.0"x1.0" DIAMOND MAT 0.125" DEEP.



C TYPICAL THRUST BLOCK DETAILS
N.T.S.

THRUST BLOCK SCHEDULE

BEARING AREA IN SQUARE FEET

PIPE SIZE	TEE OR PLUG	90° ELL	45° ELL	22 1/2° ELL	CROSS	VALVE
4"	2	2	2	1	–	–
6"	3	4	2	2	1.5 EA.	3.0
8"	5	7	4	2	3.0 EA.	5.5
10"	8	11	6	3	4.5 EA.	9.0
12"	11	16	8	4	6.5 EA.	13.0
16"	16	23	13	7	8.0 EA.	16.0

NOTES:

1. ALL VALVES, FITTINGS AND DIRECTIONAL CHANGES ARE TO BE HELD IN PLACE BY CONCRETE THRUSTS BLOCKS.
2. BEARING AREAS INDICATED ARE BASED ON ALLOWABLE SOIL PRESSURE OF 1500 PSF.
3. CONCRETE IS NOT TO BEAR AGAINST PIPE. THRUST BLOCK TO ONLY BE IN CONTACT WITH FITTING.
4. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
5. JOINT SHALL BE KEPT CLEAR OF CONCRETE.
6. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.

B SEWER CLEANOUT DETAIL
N.T.S.

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661.327.0362

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BAKERSFIELD CITY SCHOOL DISTRICT
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Project Name:

WELLNESS CENTER

Project Address:

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Sheet Title:

SEWER, WATER & STORM DRAIN PLAN

Job No.: **5527**

Sheet No.: **C1.1**

Release: ADDENDUM 2 — 10/21/24

J:\3238\Improvements\3238CI-WC\dwg 10/31/24 matthewcarson

MATERIAL AND FINISH SCHEDULE

MATERIAL AND FINISH SCHEDULE

Room No.	ROOM NAME	FLOOR		BASE			WAINSCOT			WALLS								CEILING			REMARKS
										NORTH		EAST		SOUTH		WEST					
		MAT	FIN	MAT	FIN	HT	MAT	FIN	HT	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	MAT	FIN	HT	
101	LOBBY	VCT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
102	UNISEX TOILET	CT	FF	CTB	FF	6"	-	-	-	CT	FF	CT	FF	CT	FF	CT	FF	GB	P	8'-0"	
103	NURSES OFFICE	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
104	UNISEX TOILET	CT	FF	CTB	FF	6"	-	-	-	CT	FF	CT	FF	CT	FF	CT	FF	GB	P	8'-0"	
105	MEDICAL ASSISTANT OFFICE	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	Z	
106	EXAM ROOM	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
107	EXAM ROOM	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
108	EXAM ROOM	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
109	EXAM ROOM	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
110	OPTICAL ROOM	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
111	JANITOR CLOSET	SV	FF	SV	FF	4"	FRP	FF	4'-0"	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
112	OPTICAL ROOM	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
113	LAUNDRY ROOM	SV	FF	SV	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
114	UNISEX TOILET	CT	FF	CTB	FF	6"	-	-	-	CT	FF	CT	FF	CT	FF	CT	FF	GB	P	8'-0"	
115	BREAK ROOM	VCT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
116	OFFICE	CPT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
117	OFFICE	CPT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
118	HALLWAY	VCT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
119	HALLWAY	VCT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
120	HALLWAY	VCT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
121	TRAINING ROOM	CPT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
122	ELECT./SERVER ROOM	VCT	FF	RTB	FF	4"	-	-	-	PW/GB 2	P	GB	P	PW/GB 2	P	PW/GB 2	P	SAT	FF	9'-0"	PW/GB: 1/2" PLY WD o/ GYP BD 2
123	STORAGE ROOM	VCT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	
124	THERAPY ROOM	CPT	FF	RTB	FF	4"	-	-	-	GB	P	GB	P	GB	P	GB	P	SAT	FF	9'-0"	

M&F NOTES

1. ALL FLOOR PLAN ROOM NAMES AND NUMBERS ARE FOR CONSTRUCTION INFORMATION ONLY. THE CONTRACTOR SHALL COORDINATE ACTUAL ROOM NAMES & NUMBERS WITH THE OWNER AND ARCHITECT PRIOR TO ORDERING ANY ROOM SIGNAGE.
2. SEE SPECIFICATIONS FOR ADDITIONAL FINISH MATERIAL INFORMATION.
3. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION.
4. FLOOR AND GROUND SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANT AS PER CBC 11B-302.1
5. ALL GLAZING TO COMPLY WITH CBC 2406.3
6. GYP BOARD TEXTURE TO BE LIGHT SPAY PER SPECIFICATIONS

M&F ABBREVIATIONS

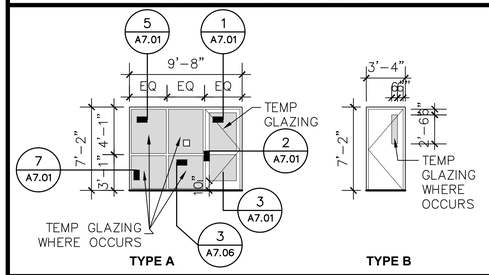
SAT = SUSPENDED ACCOUSTICAL TILE CEILING
CPT = CARPET
CT = CERAMIC TILE
CTB = CERAMIC TILE W/INTEGRAL COVE
FF = FACTORY FINISH
FRP = FIBERGLASS REINFORCED PANELS
GB = GYPSUM BOARD
P = PAINT SYSTEM - SEE SPECIFICATIONS
RTB = RUBBER TOPSET BASE
PW = PLYWOOD 2
* SEE SPECIFICATIONS

DOOR SCHEDULE

DOOR SCHEDULE

DOOR NO.	TYPE NO	DOOR OPENING SIZE	DOOR				FRAME		GLASS	LOUVER	U/L	HARDWARE	DETAILS				REMARKS
			THK	MAT	CORE	FIN.	MAT	FIN	SIZE	SIZE	RAT'G	NO.	HEAD	JAMB	JAMB	SILL	
101A	A	3'-0" X 7'-0"	1-3/4"	MTL	INSUL	P	HM	P	FULL	-	-	5	1/A7.01	2/A7.01	2/A7.01	3/A7.01	
101B	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P	6X30	-	-	6	2/A8.02	3/A8.02	3/A8.02	-	
102	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	3	2/A8.02	3/A8.02	3/A8.02	-	
103	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	2	2/A8.02	3/A8.02	3/A8.02	-	
104	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	3	2/A8.02	3/A8.02	3/A8.02	-	
105	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	1	2/A8.02	3/A8.02	3/A8.02	-	
106	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	1	2/A8.02	3/A8.02	3/A8.02	-	
107	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	1	2/A8.02	3/A8.02	3/A8.02	-	
108	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	1	2/A8.02	3/A8.02	3/A8.02	-	
109	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	1	2/A8.02	3/A8.02	3/A8.02	-	
110	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	1	2/A8.02	3/A8.02	3/A8.02	-	
111	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	4	2/A8.02	3/A8.02	3/A8.02	-	
112	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	1	2/A8.02	3/A8.02	3/A8.02	-	
113	B	3'-0" X 7'-0"	1-3/4"	MTL	INSUL	P	HM	P		-	-	4	1/A7.01	2/A7.01	2/A7.01	3/A7.01	
114	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	3	2/A8.02	3/A8.02	3/A8.02	-	
115	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P	6X30	-	-	2	2/A8.02	3/A8.02	3/A8.02	-	
116	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P	6X30	-	-	2	2/A8.02	3/A8.02	3/A8.02	-	
120	B	3'-0" X 7'-0"	1-3/4"	MTL	INSUL	P	HM	P	6X30	-	-	5	1/A7.01	2/A7.01	2/A7.01	3/A7.01	
121A	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P	6X30	-	-	2	2/A8.02	3/A8.02	3/A8.02	-	
121B	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P	6X30	-	-	2	2/A8.02	3/A8.02	3/A8.02	-	
122	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	4	2/A8.02	3/A8.02	3/A8.02	-	
123	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P		-	-	4	2/A8.02	3/A8.02	3/A8.02	-	
124	B	3'-0" X 7'-0"	1-3/4"	WD	SC	FF	HM	P	6X30	-	-	2	2/A8.02	3/A8.02	3/A8.02	-	
125	B	3'-0" X 7'-0"	1-3/4"	MTL	INSUL	P	HM	P		-	-	4	1/A7.01	2/A7.01	2/A7.01	3/A7.01	

DOOR TYPES



DOOR ABBREVIATIONS

FF	FACTORY FINISH
HM	HOLLOW METAL
INSUL	INSULATED
L	LAMINATED
P	PAINT (SEE SPECS)
SC	SOLID CORE
WD	WOOD
MTL	METAL
TEMP	TEMPERED

ACCESSIBILITY NOTE

A. THE MAXIMUM EFFORT TO OPERATE EXTERIOR DOORS SHALL NOT EXCEED 5 POUNDS. CBC 11B-404.2.9 AT ACCESSIBLE ENTRANCES

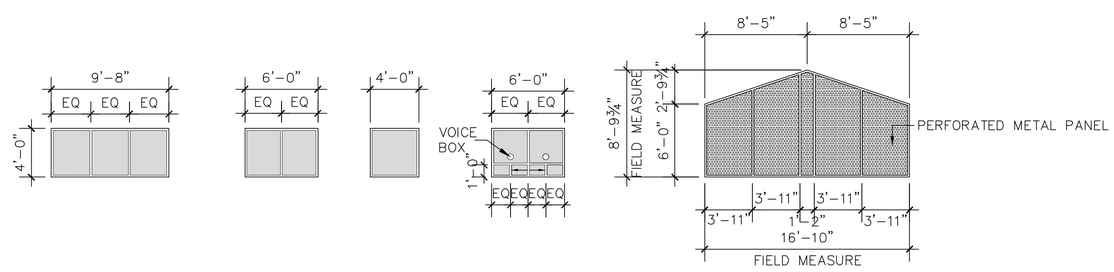
B. CBC 1010.1.11 - NEW BUILDINGS ON A K-12 PUBLIC SCHOOL CAMPUS SHALL BE PROVIDED WITH LOCKS WHICH ALLOW DOORS TO CLASSROOMS AND ANY ROOM WITH AN OCCUPANT LOAD OF FIVE OR MORE PERSONS TO BE LOCKED FROM THE INSIDE. LOCKS SHALL CONFORM TO THE SPECIFICATION AND REQUIREMENTS OF SECTION 1010.1.9. EXCEPTIONS INCLUDE DOORS WHICH ARE NORMALLY LOCKED FROM THE OUTSIDE, RELOCATABLE MOVED WITHIN THE SAME CAMPUS, AND RECONSTRUCTION PROJECTS.

WINDOW SCHEDULE

WINDOW SCHEDULE

TYPE	FRAME SIZE WIDTH X HEIGHT	FRAME		GLASS TYPE	FIRE RAT'G	DETAILS				REMARKS
		MAT	FIN			HEAD	JAMB	SILL	MULLION	
A	9'-8" X 4'-0"	HM	P	1" INSUL	-	5/A7.01	7/A7.01	7/A.01	6/A7.01	
B	6'-0" X 4'-0"	HM	P	1" INSUL	-	5/A7.01	7/A7.01	7/A.01	6/A7.01	
C	4'-0" X 4'-0"	HM	P	1' INSUL	-	5/A7.01	7/A7.01	7/A.01	6/A7.01	
D	6'-0" X 4'-0"	HM	P	1/4"	-	10/A8.02	11/A8.02	11/A8.02	6/A7.01	W/ HORIZONTAL SLIDER
E	16'-10" X 8'- 9 11/16"	HM	P	PERF	-	9/A7.02	10/A7.02	12/A7.02	11/A7.02	

WINDOW TYPES



ABBREVIATIONS

HM	HOLLOW METAL
P	PAINT (SEE SPECS)
EQ	EQUAL
PERF	PERFORATED METAL PANEL - STAINLESS STEEL
INSUL	INSULATED

Owner:

BAKERSFIELD CITY SCHOOL DISTRICT
1300 BAKER STREET
BAKERSFIELD, CA 93305

Project Name:

WELLNESS CENTER

Project Address:

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1100 CITADEL STREET
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Sheet Title:

SCHEDULES

Job No.:

5527

Sheet No.:

A0.01

Release: ADDENDUM 2 2 11/22/24

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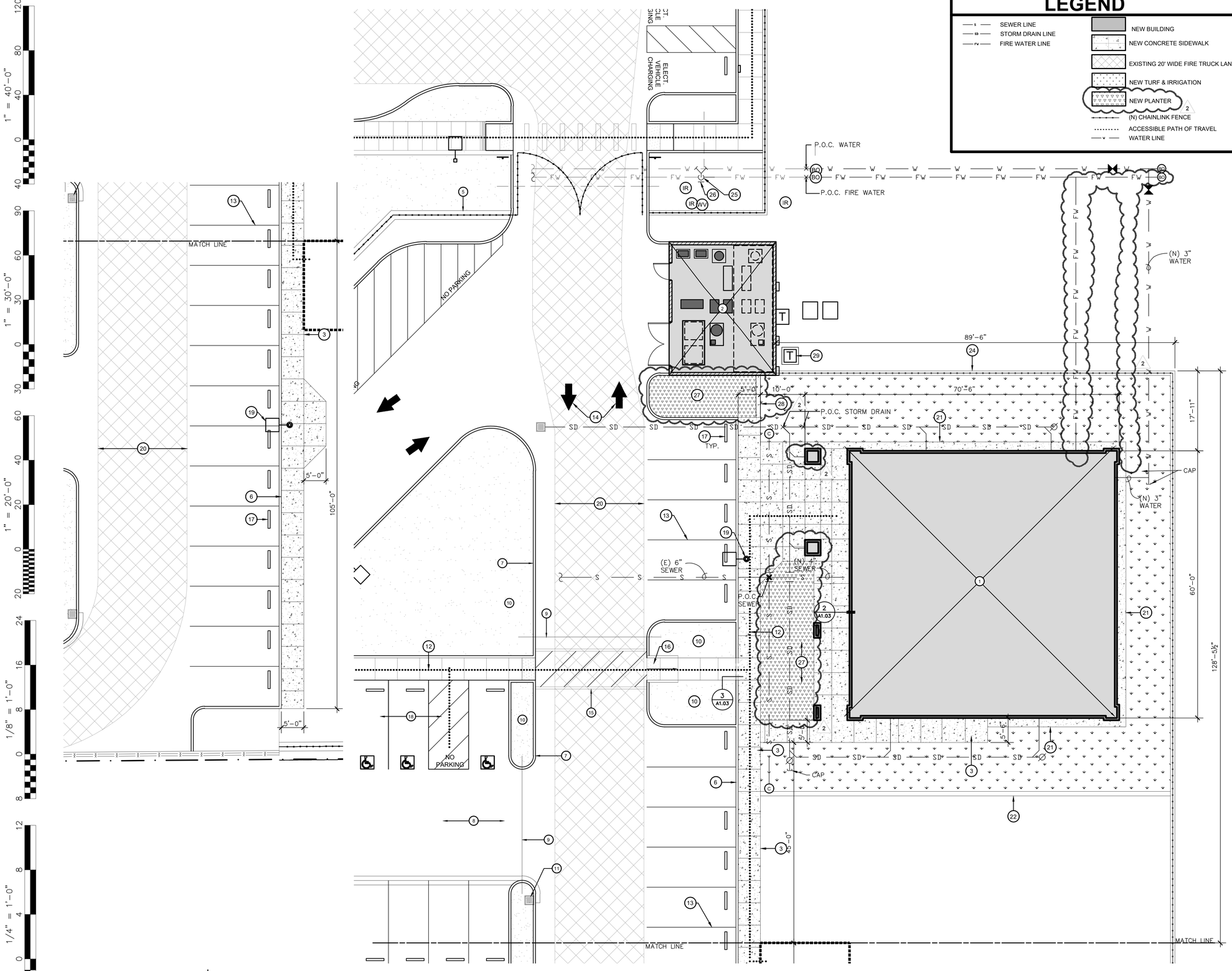

LEGEND

- SEWER LINE
- STORM DRAIN LINE
- FIRE WATER LINE
- NEW BUILDING
- NEW CONCRETE SIDEWALK
- EXISTING 20' WIDE FIRE TRUCK LANE
- NEW TURF & IRRIGATION
- NEW PLANTER
- (N) CHAINLINK FENCE
- ACCESSIBLE PATH OF TRAVEL
- WATER LINE

KEY NOTES

1. NEW BUILDING
2. EXISTING UTILITY YARD
3. NEW CONCRETE SIDEWALK, -SEE DETAIL 1/A1.03
4. NEW LANDSCAPE & IRRIGATION
5. (E) DECORATIVE STEEL FENCE
6. (E) CONCRETE CURB
7. (E) CONCRETE CURB PAINTED RED W/ "FIRE LANE" PAINTED IN WHITE PAINT AT 30'-0" O.C. ON TOP AND SIDE
8. (E) AC PAVING
9. (E) IRRIGATION SLEEVE
10. (E) LANDSCAPING & IRRIGATION
11. (E) DRAIN INLET
12. DOTTED LINE INDICATES ACCESSIBLE PATH OF TRAVEL
13. (E) 4" WIDE PAINTED PARKING STALL STRIPING.
14. (E) PAINTED DIRECTIONAL ARROW
15. (E) PAINTED WHITE CROSSWALK STRIPING 12" WIDE SPACED 24" APART, 8' LONG.
16. (E) TRUNCATED DOMES
17. (E) WHEEL STOP
18. (E) ACCESSIBLE PARKING, -PER DSA#03-118394
19. (E) PARKING LOT LIGHT POLE AND BASE
20. (E) FIRE TRUCK ACCESS LANE 20'-0" WIDE
21. (N) CONCRETE MOWSTRIP, -SEE DETAIL 4/A1.03
22. (N) LANDSCAPE CURB
23. (N) CONCRETE CONTROL JOINT, -SEE 2/A1.03
24. (N) 8FT. HIGH CHAINLINK FENCING. SEE DETAIL 10/A1.03
25. (N) POST INDICATOR VALVE (PIV). REFER TO DETAIL 7/A1.03.
26. (N) PIV SIGN, -SEE C1.1.
27. (N) PLANTER, -SEE LANDSCAPE PLANS.
28. (N) CONCRETE MOWSTRIP, -SEE 4/L1.03.
29. (N) TRANSFORMER, -SEE ELECTRICAL

GENERAL NOTES

A. GENERAL CONTRACTOR SHALL FIELD VERIFY ALL SITE CONDITIONS PRIOR TO BID. IF ANY DISCREPANCIES ARE FOUND, THE ARCHITECT SHALL BE NOTIFIED IN WRITING.
B. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF LAYOUTS AND ESTABLISHED LOCATIONS OF BURIED UTILITY LINES. ANY UTILITIES REQUIRING RELOCATION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR CONTACT APPLICABLE GOVERNING AGENCIES REGARDING ARRANGEMENT AND COORDINATION OF WORK.
C. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ANY COMPACTION RETEST DUE TO INITIAL FAILURE.
D. PROJECT INSPECTOR SHALL BE EMPLOYED BY THE OWNER, APPROVED BY THE RESPONSIBLE ARCHITECT AND DSA.
E. A COPY OF TITLE-24, ALL PARTS APPLICABLE, TO BE KEPT AT THE JOB SITE AT ALL TIMES.
F. ADDENDA SHALL BE SIGNED BY THE ARCHITECT (RESPONSIBLE IN CHARGE) AND APPROVED BY DSA.
G. C.C.D.s SHALL BE SIGNED BY THE ARCHITECT (RESPONSIBLE IN CHARGE), OWNER AND APPROVED BY DSA.
H. TESTING LAB SHALL BE EMPLOYED BY THE OWNER, APPROVED BY THE RESPONSIBLE ARCHITECT AND DSA.
I. ALL WORK SURFACES DISTURBED OR DAMAGED BY THE CONSTRUCTION ACTIVITIES SHALL BE REPAIRED IN KIND, TEXTURED AND FINISHED TO MATCH ADJACENT SURFACES.
J. NEW CONCRETE WALKS SHALL HAVE SLOPES NOT TO EXCEED 1 IN 20 IN THE DIRECTION OF PATH OF TRAVEL. PROVIDE CONTROL JOINTS ("C.J.") AT 5'-0" o.c. MAX. AND EXPANSION JOINTS NOT TO EXCEED 30'-0" MAX. PROVIDE MEDIUM BROOM FINISH ON ALL WALKS.
K. ALL BUILDING AND ROOM NAMES INDICATED ON THESE CONSTRUCTION DOCUMENTS ARE "NOT" THE ACTUAL BUILDING/ ROOM SIGNAGE DESIGNATION. THE GENERAL CONTRACTOR SHALL FURNISH, INSTALL AND COORDINATE ALL REQUIRED SIGNAGE WITH THE OWNER/ARCHITECT PRIOR TO STARTING CONSTRUCTION.
L. GENERAL CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE RELOCATABLE BUILDING DELIVERY DATES TO THE SCHOOL SITE WITH THE MFGR.
M. THE GENERAL CONTRACTOR SHALL CONSTRUCT ALL NEW RELOCATABLE BUILDING FOUNDATIONS AS PER THE RELOCATABLE BUILDING MANUFACTURER'S DRAWINGS AND SPECIFICATIONS.
N. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL HOOK-UPS TO THE RELOCATABLE BUILDINGS AFTER INSTALLATION HAS BEEN COMPLETED BY THE MANUFACTURER.
O. 5'-0" DEEP x 5'-0" WIDE MINIMUM LANDINGS AT DOORWAYS SHALL BE AS DETAILED AND SHALL HAVE SLOPES (IN ANY DIRECTION) OF NOT GREATER THAN 1/4 IN 12 SLOPE. SLOPES SHALL BE AWAY FROM DOORWAYS.
P. GENERAL/SITE CONTRACTOR SHALL FIELD VERIFY THAT EXISTING PATH OF TRAVEL (P.O.T.) IS A MINAMUM OF 4'-0" WIDE AND IS SLIP RESISTANT. IF IT IS NOT, THEN THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF RECORD AND A REMEDY OR ALTERNATE P.O.T. WILL BE PROVIDED.
Q. THE MAXIMUM DROP BETWEEN EXISTING FINISHED GRADES AND THE TOP OF THE P.O.T. SHOULD NOT EXCEED 4". IF IT DOES, PROVIDE THE NECESSARY WARNING CURB PER CBC SEC. 11B-303.5.
R. DETERIORATION OR EXISTING NON-COMPLIANT CONSTRUCTION:

IF ANY CONDITION IS DISCOVERED WHICH, IF LEFT UNCORRECTED, WOULD MAKE THE BUILDING NON-COMPLIANT WITH THE REQUIREMENTS OF THE EDITION OF THE CBC IN FORCE AT THE TIME OF ORIGINAL CONSTRUCTION, THE CONDITION MUST BE CORRECTED IN ACCORDANCE WITH CURRENT CODE REQUIREMENTS. A C.C.D. 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. *PER DSA IR 16-1, SEC. 5.4

S. CONTRACTOR SHALL ADJUST ALL DOOR CLOSERS TO A MAXIMUM OPENING FORCE OF 5 LBF

Owner:

BAKERSFIELD CITY SCHOOL DISTRICT
1300 BAKER STREET
BAKERSFIELD, CA 93305

Project Name:
WELLNESS CENTER

Project Address:
WELLNESS CENTER
1100 CITADEL STREET
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LICENSED ARCHITECT CURTIS E FLYNN No. C 29955 REN. 5-31-25 STATE OF CALIFORNIA

Sheet Title:
ENLARGED SITE PLAN

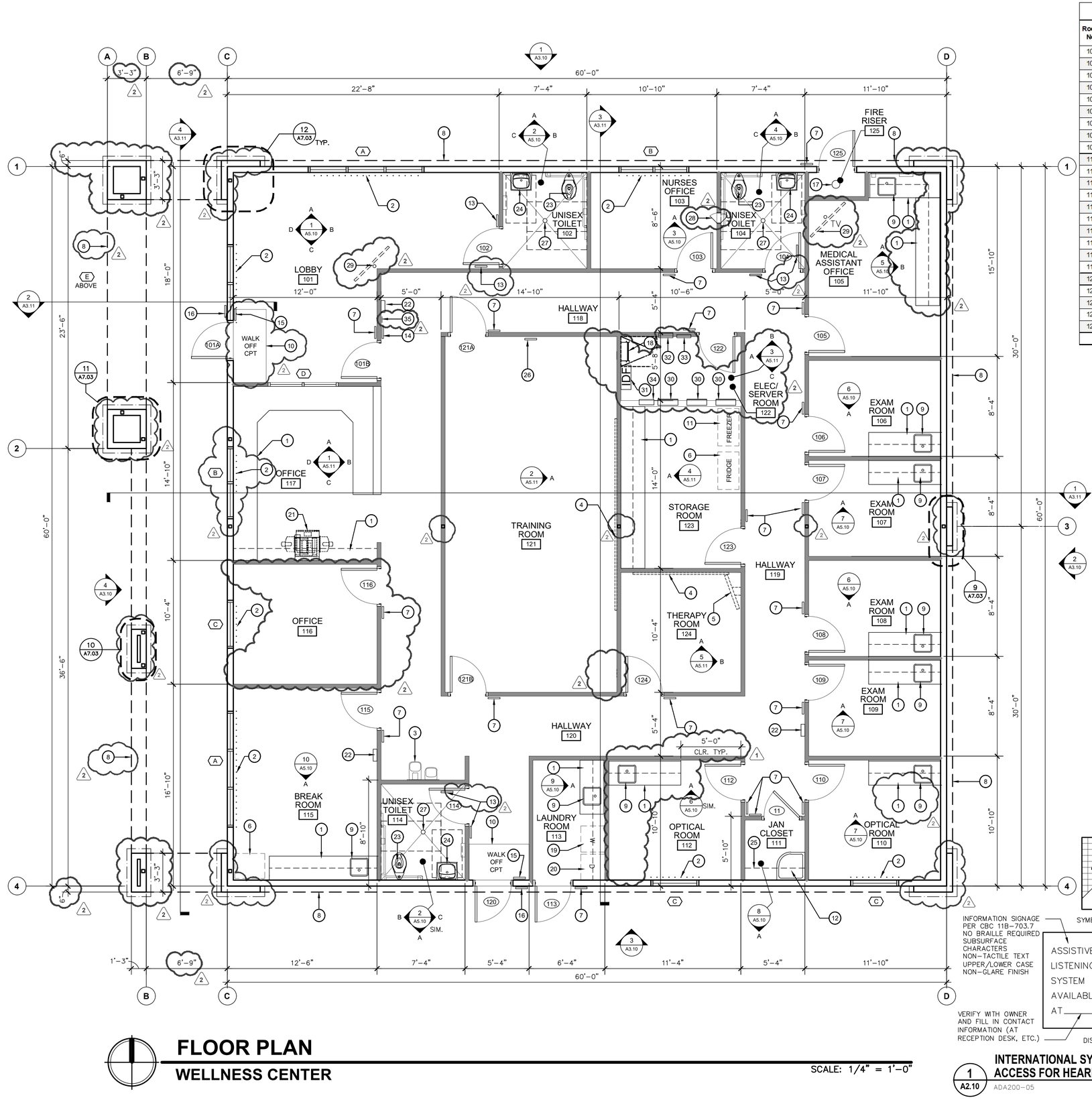
Job No.:
5527

Sheet No.:
A1.02

Release: ADDENDUM 2 .11/22/24

ENLARGED SITE PLAN
WELLNESS CENTER

SCALE: 1" = 10'



FLOOR PLAN

WELLNESS CENTER

SCALE: 1/4" = 1'-0"

OCCUPANCY LOAD TABLE

Room No.	ROOM NAME	Area S.F.	Occupant Load Table	Occupant Load
101	LOBBY	291	15	19
102	UNISEX TOILET	N/A	N/A	N/A
103	NURSES OFFICE	84	100	1
104	UNISEX TOILET	N/A	N/A	N/A
105	MEDICAL ASSISTANT OFFICE	157	100	2
106	EXAM ROOM	88	100	1
107	EXAM ROOM	88	100	1
108	EXAM ROOM	88	100	1
109	EXAM ROOM	88	100	1
110	OPTICAL ROOM	110	100	1
111	JANITOR CLOSET	N/A	N/A	N/A
112	OPTICAL ROOM	110	100	1
113	LAUNDRY ROOM	60	300	1
114	UNISEX TOILET	N/A	N/A	SV
115	BREAK ROOM	192	15	13
116	OFFICE	120	100	1
117	OFFICE	174	100	2
118	HALLWAY	NA	N/A	N/A
119	HALLWAY	NA	N/A	N/A
120	HALLWAY	NA	N/A	N/A
121	TRAINING ROOM	425	15	28
122	ELECT./SERVER ROOM	NA	N/A	N/A
123	STORAGE ROOM	137	300	1
124	THERAPY ROOM	100	100	1
	TOTAL OCCUPANT LOAD:			75

ALS SYSTEM

ASSISTIVE LISTENING SYSTEM (ALS):

1. PROVIDE A SET OF PORTABLE ALS WITH A TRANSMITTER AND A MINIMUM OF TWO HEARING-AID COMPATIBLE RECEIVERS.

   PER CBC 2019, 11B-219.
   960S.F. / 20 (OCCUPANT LOAD) = 48
   48 x 4% = 1.92 ALS DEVICES REQUIRED (OR 2 MIN.).

2. THE SYSTEM SHALL BE STORE IN THE SCHOOL ADMINISTRATION OFFICE UNTIL REQUESTED FOR USE.

3. SPECIFY THE ALS TYPE AND THAT THE SYSTEM SHALL BE CAPABLE OF INTERFACING WITH THE VOCE AMPLIFICATION SYSTEMS AND ANY MEDIA PROGRAM AUDI SYSTEM INSTALLED, AND SHALL COMPLY WITH CBC SECTIONS 11B-219 AND 11B-706.

4. SYSTEM SHALL INCLUDE: ANCHOR AUDIOASSISTIVE LISTENING PACKAGE #AL-9000: 16 CHANNEL TRANSMITTER, DC POWER SUPPLY, 4 BELT PACK RECEPTACLES WITH EAR BUDS, AND 2 NECK LOOPS, WIRELESS MICROPHONE & BATTERY CHARGER, OR EQUAL..

KEY NOTES

1. CABINETS. SEE INTERIOR ELEVATIONS
2. VERTICAL BLINDS
3. ACCESSIBLE HI/LO DRINKING FOUNTAIN - SEE DETAIL 8/A8.01
4. MARKER BOARDS - SEE DETAIL 9/A8.02
5. T.V BRACKET - SEE DETAIL 8/A8.02
6. REGRIGERATOR - F.B.O
7. TACTILE ROOM IDENTIFICATION SIGN - SEE DETAIL 5/A8.01
8. DASHED LINE INDICATES SOFFITT ABOVE
9. SINK ON COUNTERTOP WITH CABINETS - SEE INTERIOR ELEVATIONS
10. WALK-OFF CARPET TILES
11. FREEZER - F.B.O
12. JANITORS MOP SINK - SEE PLUMBING
13. RESTROOM SIGNAGE PER DETAIL 2/A8.01
14. TACTILE EXIT ROUTE SIGN - SEE DETAIL 4/A8.01
15. TACTILE EXIT SIGN - SEE DETAIL 4/A8.01
16. BUILDING ENTRANCE SIGN - SEE DETAIL 1/A8.01
17. FIRE SPRINKLER RISER
18. ROOF ACCESS LADDER - SEE DETAILS 10-14/A7.01
19. WASHER - F.B.O
20. DRYER - F.B.O
21. COPY MACHINE - F.B.O
22. FIRE EXTINGUISHER CABINET - SEE DETAIL 5/A8.02
23. WATER CLOSET - SEE PLUMBING
24. LAVATORY - SEE PLUMBING
25. JANITOR'S CLOSET SHELF & MOP HANGER - SEE DETAIL 14/A8.01
26. ALS AVAILABLE SIGN, PROVIDE PORTABLE ASSISTIVE LISTENING SYSTEM, PER CBC 11B-216.10, 11B-219 AND 11B-706. SEE DETAIL 1/A2.10
27. FLOOR DRAIN, -SEE PLUMBING PLAN.
28. SPECIMAN PASS-THRU CABINET, -SEE 4/A5.10 & SPEC SECTION 102800.
29. HANGING TV BRACKET, -SEE DETAIL 2/A4.10.
30. ELECTRICAL PANEL, -SEE ELECTRICAL SHEETS.
31. IDF, -SEE ELECTRICAL SHEETS.
32. SONITROL SECURITY CABINET, -SEE ELECTRICAL SHEETS.
33. FATC, -SEE ELECTRICAL SHEETS.
34. MAG CONTROL BOX, -SEE ELECTRICAL SHEETS.
35. SECURITY KEY PAD.

2

GENERAL NOTES

1. DIMENSIONS ARE GIVEN TO FACE OF STUD UNLESS NOTED OTHERWISE.
2. DIMENSIONS FOR ACCESSIBILITY COMPLIANCE ARE GIVEN FROM CENTERLINE OR FACE OF FIXTURE/ACCESSORY TO FACE OF FINISH OR ADJACENT FIXTURE/ACCESSORY. SEE NOTE BELOW
3. SEE SHEET A8.01 FOR MOUNTING HEIGHT AND CLEARANCE REQUIREMENTS AT ALL TOILET ROOM ACCESSORIES AND ACCESSIBLE FIXTURES: WATER CLOSETS, LAVATORIES, DRINKING FOUNTAINS, ETC.
4. SEE MATERIAL & FINISH SCHEDULE ON FOR MATERIAL & FINISH SELECTIONS.
5. ALL INTERIOR WALLS TO RECEIVE ACOUSTIC BATT INSULATION. PROVIDE GYPSUM BD. FROM FINISH FLOOR TO WITHIN 3" OF ROOF DECK ABOVE W/ BLOCKING BETWEEN ROOF FRAMING MEMBERS
6. ALL GYPSUM BOARD TO BE 5/8" U.N.O.; 5/8" CEMENT BACKER @ C.T.
7. FRAME ALL WALLS FROM FLOOR SLAB BELOW TO WITHIN 1/4" OF THE UNDERSIDE OF THE ROOF DECK ABOVE U.N.O. W/ 5/8" GYP. BD. BOTH SIDES FROM FIN. FLOOR BELOW TO 6" ABOVE HIGHEST ADJACENT CEILING
8. SEE STRUCTURAL DRAWINGS FOR SHEAR WALL LOCATIONS
9. SEE STRUCTURAL DRAWINGS FOR TYPICAL FRAMING CONSTRUCTION DETAILS
10. ALL INSULATION AT EXTERIOR WALLS SHALL BE R-19 INSULATION. INSULATION IN ATTIC SPACE SHALL BE R-38 FOIL-FACT F.G. BATT INSULATION INSTALLED. INSULATION INSTALLED ON ROOF DECK SHALL BE R-30 RIGID INSULATION
11. PROVIDE ACOUSTIC BATT INSULATION AT ALL INTERIOR TOILET ROOM WALLS. PROVIDE ACOUSTIC SEALANT AT ALL END WALL JOINTS AND AT ALL PENETRATIONS.

WALL LEGEND

- 6" METAL STUDS
- 4" METAL STUDS
- CMU VENEER

SYMBOL PROPORTIONS

INFORMATION SIGNAGE PER CBC 11B-703.7
NO BRAILLE REQUIRED
SUBSURFACE CHARACTERS
NON-TACTILE TEXT
UPPER/LOWER CASE
NON-GLARE FINISH

ASSISTIVE LISTENING SYSTEM AVAILABLE AT

6" HIGH PICTOGRAM, 11B-703.6

NOTE:
THIS SIGN IS ASSISTING THE DEAF NOT BLIND - BRAILLE NOT REQUIRED. SEE CBC 11B-219.2 FOR ASSISTIVE-LISTENING SYSTEM REQUIREMENTS

VERIFY WITH OWNER AND FILL IN CONTACT INFORMATION (AT RECEPTION DESK, ETC.)

DISPLAY CONDITIONS

1 A2.10 **INTERNATIONAL SYMBOL OF ACCESS FOR HEARING IMPAIRED**
ADA200-05

SCALE: 3" = 1'-0"

Owner:

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BAKERSFIELD, CA 93305

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Sheet Title:

FLOOR PLAN

Job No.: **5527**

Sheet No.: **A2.10**

Release: ADDENDUM 2 2 .11/22/24

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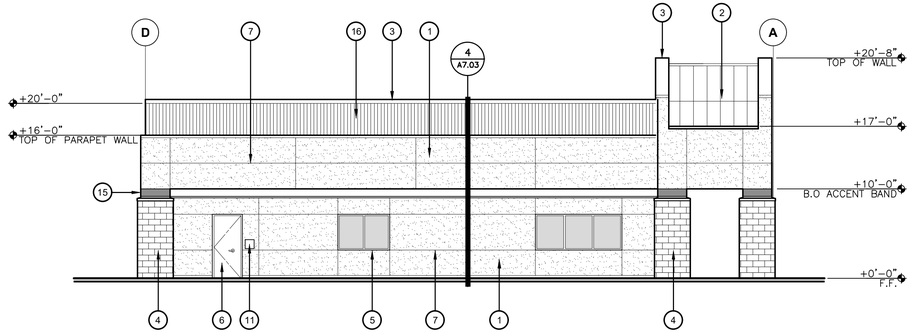
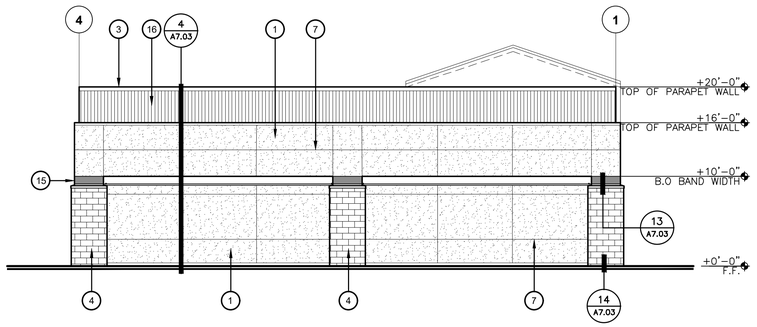


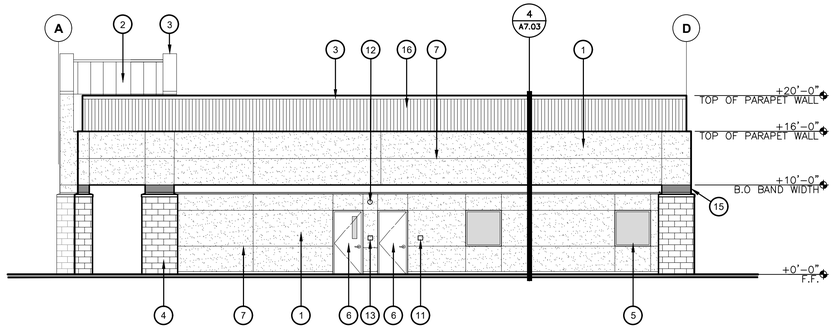
1 A3.10 ELEVATION

SCALE: 1/8" = 1'-0"



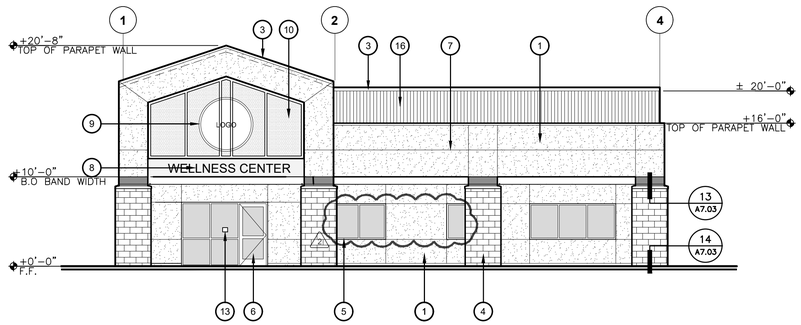
2 A3.10 ELEVATION

SCALE: 1/8" = 1'-0"



3 A3.10 ELEVATION

SCALE: 1/8" = 1'-0"



4 A3.10 ELEVATION

SCALE: 1/8" = 1'-0"

KEY NOTES

1. EXTERIOR CEMENT PLASTER o/ WEATHER BARRIER, PRIME AND PAINT
2. PRE-FINISHED STANDING SEAM METAL ROOF o/ UNDERLAYMENTS - SEE SHEET A7.05 FOR TYPICAL DETAILS
3. 22 GA. SHEET METAL COPING, PROVIDE CLINCH-LOCK SEAM PER SMACNA DETAIL 1 FIGURE 3-2 AT SEAMS ALONG RAKED COPING, PRIME AND PAINT
4. CMU SPLIT FACED VENEER - SEE DETAIL 13 & 14/A7.03
5. H.M. WINDOW FRAME W/ 1" INSULATED GLAZING UNIT, PAINT FRAME - SEE WINDOW ELEVATIONS
6. HOLLOW METAL DOOR AND FRAME - SEE DOOR SCHEDULE, PAINT
7. CONTROL JOINT - TYPE #5 - SEE 8/A7.01
8. 8" H. FLUSH MOUNTED CAST ALUMINUM DIMENSIONAL LETTERS (HELVETICA FONT)
9. 60" DIAMETER POWDER COATED STEEL PLATE W/ LASER CUT LOGO SIGN - DESIGN GRAPHICS TO BE PROVIDED BY OWNER - SEE DETAIL 11/A7.02
10. HOLLOW METAL FRAME WITH PERFORATED PANEL - SEE DETAILS 9 THRU 12 /A7.02
11. TACTILE ROOM IDENTIFICATION SIGN- SEE 5/A8.01
12. WALL MOUNTED EXTERIOR LIGHT FIXTURE - SEE ELECTRICAL DRAWINGS
13. BUILDING ENTRANCE SIGN - SEE DETAIL 1/A8.01
14. NOT USED
15. 12" PAINTED CEMENT PLASTER ACCENT BAND
16. METAL FASCIA PANEL - SEE DETAIL 1 & 2/A7.06

GENERAL NOTES

1. ALL METAL LATH WIRE SHALL BE CUT BEHIND ALL EXPANSION/CONTROL JOINTS. THE CONTRACTOR SHALL PROVIDE STUDS AS REQUIRED @ ALL JOINTS
2. ALL EXTERIOR GLASS SEE WINDOW ELEVATIONS AND SCHEDULE
3. CEMENT PLASTER WILL BE PAINTED WITH 3 DIFFERENT COLORS (ELASTOMERIC P50.E)

   1) MAIN BODY
   2) SECONDARY BODY
   3) 12" ACCENT BAND
4. HOLLOW METAL FRAMES & DOORS WILL BE PAINTED WITH A MIN. OF 2 COLORS

   1) EXTERIOR SURFACE : 1. COLOR
   2) INTERIOR SURFACE : 2. COLORS
      A) JAMB
      B) DOOR

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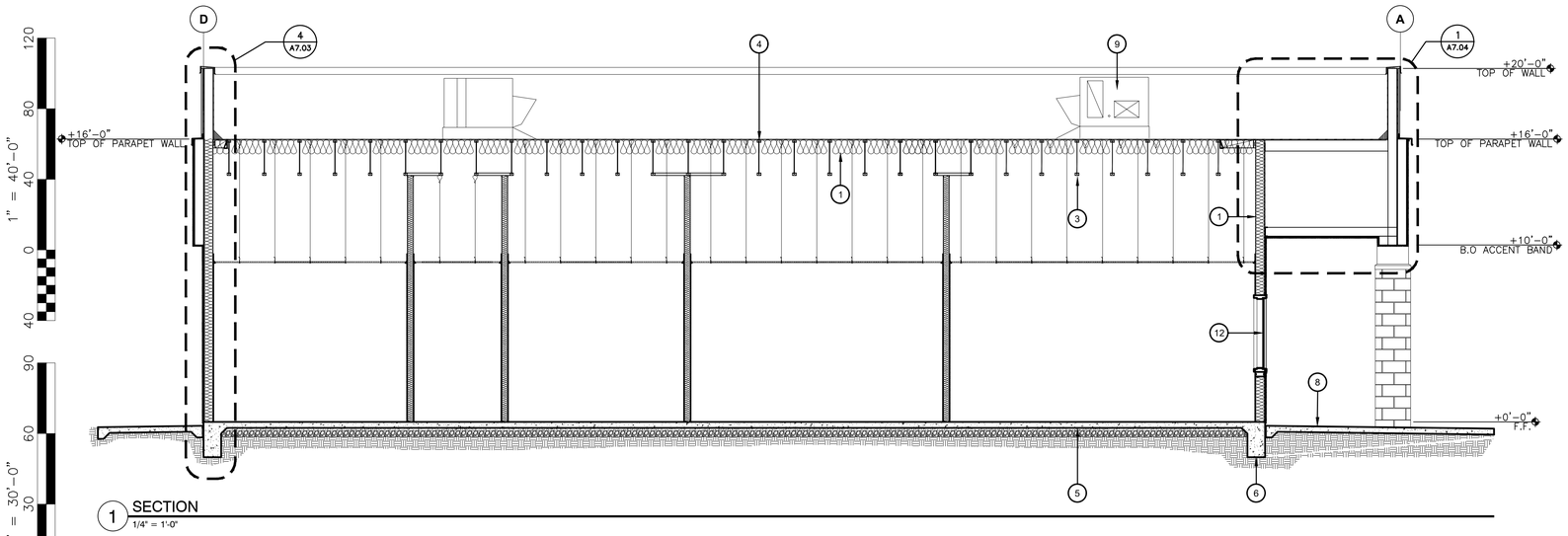
Sheet Title:

EXTERIOR ELEVATIONS

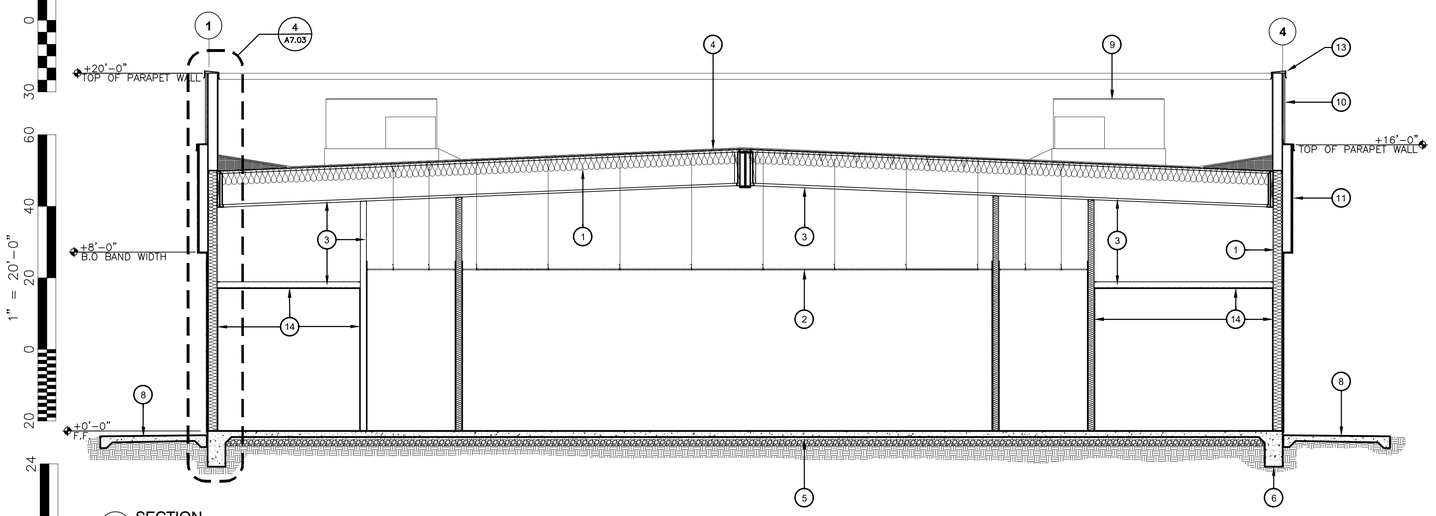
Job No.: **5527**

Sheet No.: **A3.10**

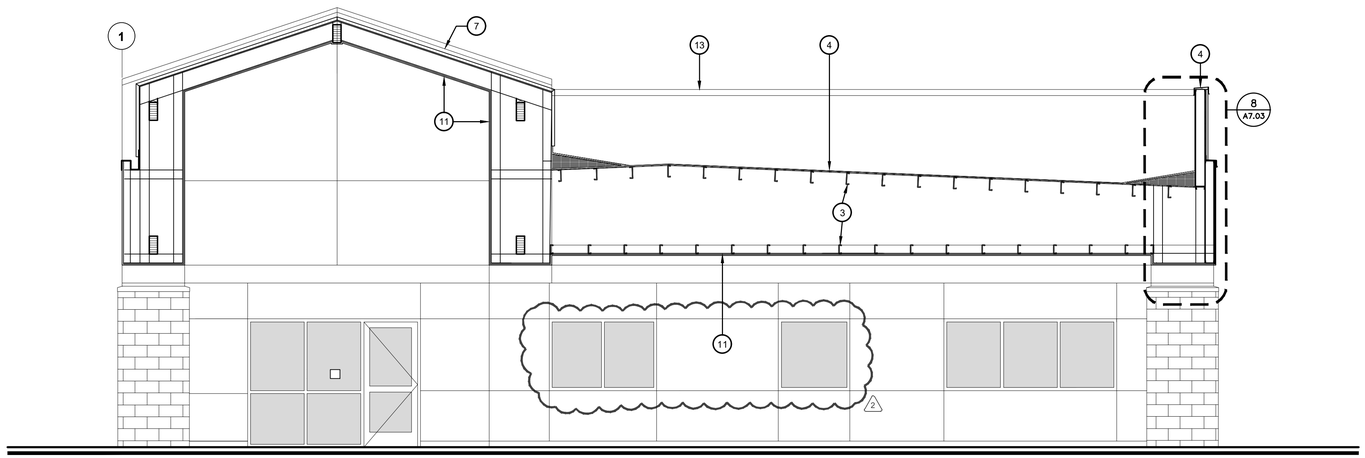
Release: ADDENDUM 2 (2) 11/22/24



1 SECTION
1/4" = 1'-0"



3 SECTION
1/4" = 1'-0"



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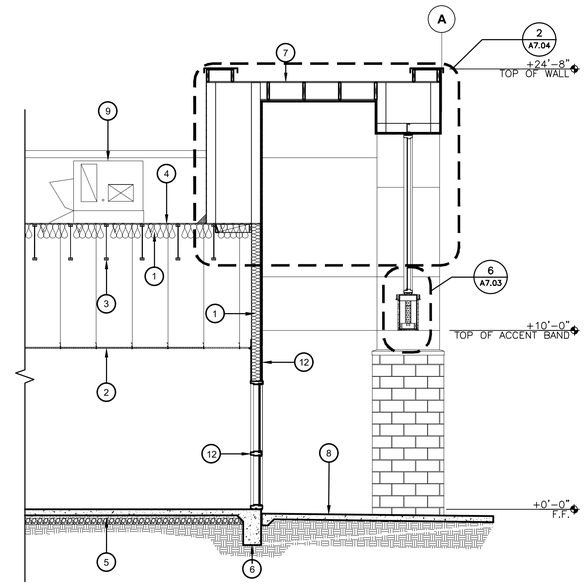
1/4" = 1'-0"



2 SECTION
1/4" = 1'-0"

KEY NOTES

1. BATT INSULATION
2. SUSPENDED ACOUSTICAL TILE
3. STRUCTURAL FRAMING - SEE STRUCTURAL
4. SINGLE PLY ROOFING MEMBRANE o/ PLYWOOD
5. CONCRETE SLAB - SEE STRUCTURAL
6. CONCRETE FOOTING - SEE STRUCTURAL
7. STANDING SEAM METAL ROOFING - SEE SHEET A7.05 FOR TYPICAL DETAILS
8. CONCRETE SIDEWALK
9. MECHANICAL UNIT
10. METAL FASCIA PANEL
11. CEMENT PLASTER SYSTEM
12. DOOR / WINDOW FRAME
13. SHEET METAL COPING
14. GYPSUM BD.

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SECTIONS

Job No.: **5527**

Sheet No.: **A3.11**

Release: ADDENDUM 2 (2) .11/22/24
12/20/24

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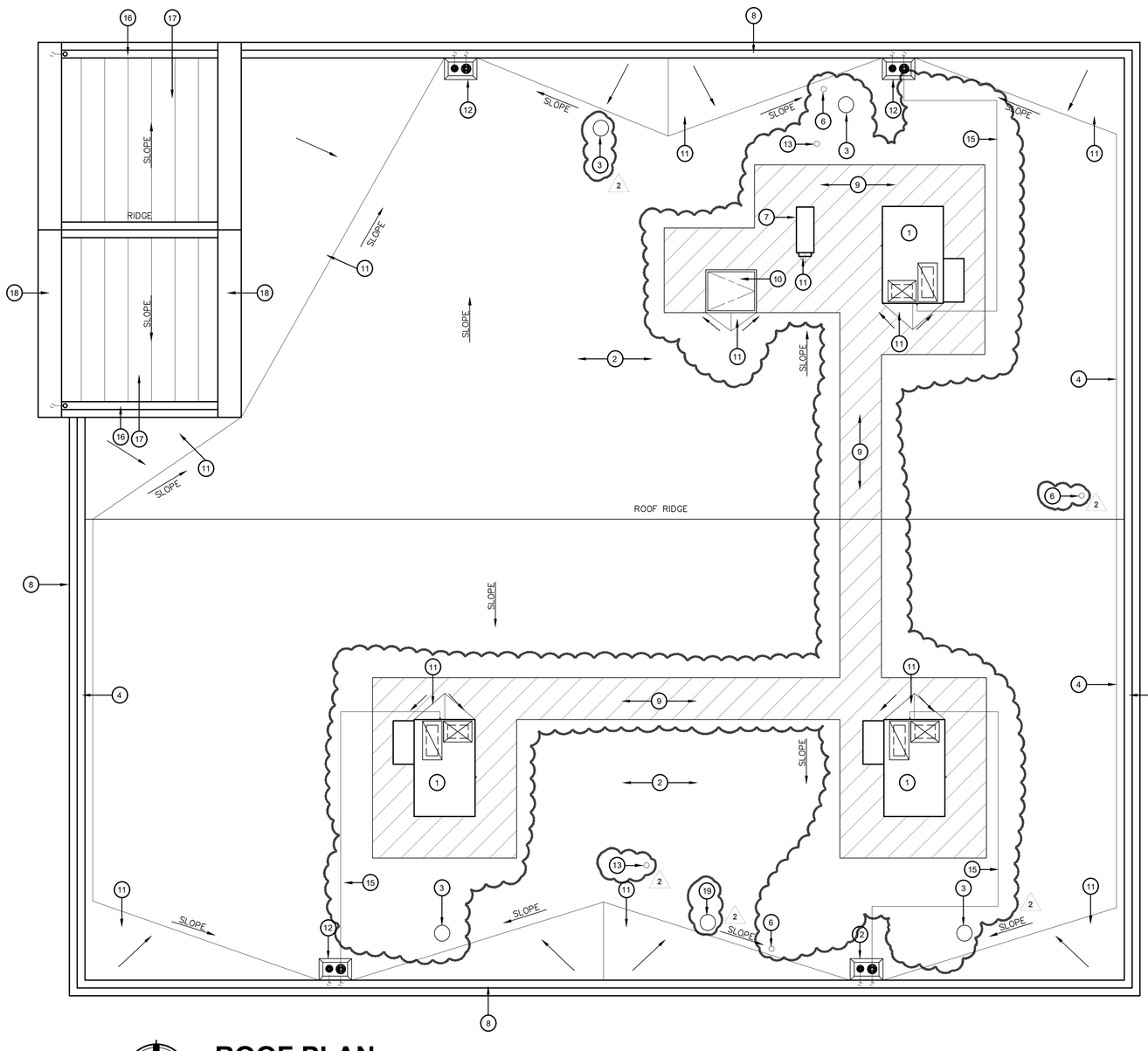
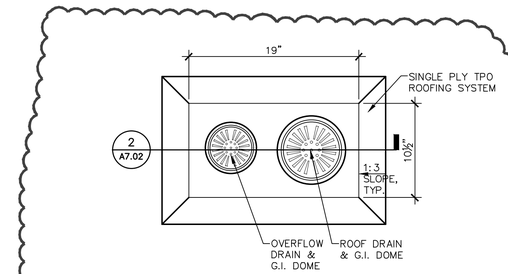


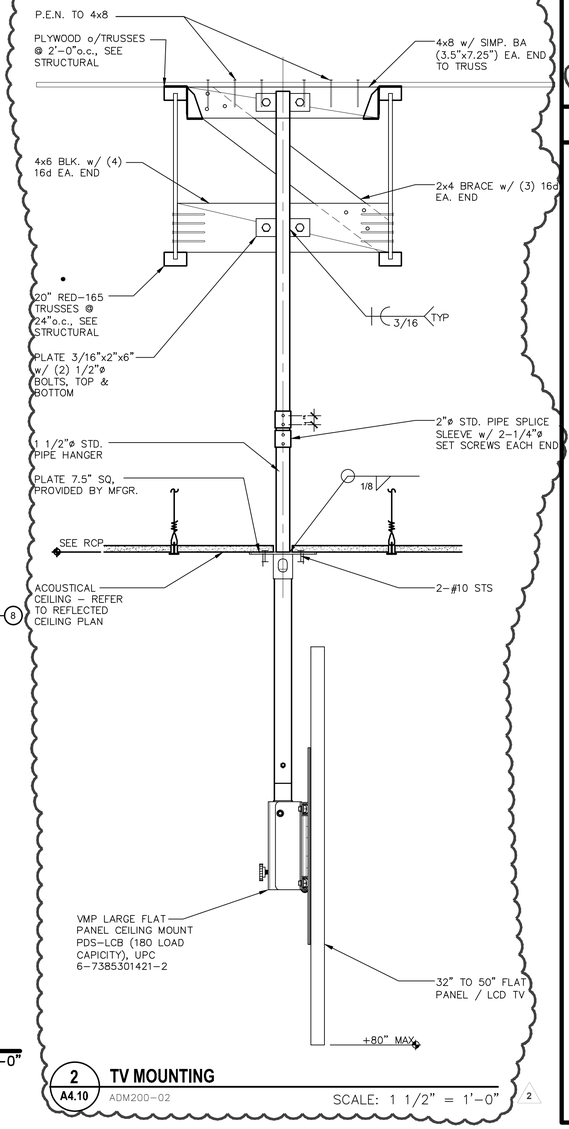
ROOF PLAN
WELLNESS CENTER

SCALE: 1/4" = 1'-0"



1 A4.10 **ROOF DRAIN**
ADR100-05_ADD 2

SCALE: 1 1/2" = 1'-0"



2 A4.10 **TV MOUNTING**
ADM200-02

SCALE: 1 1/2" = 1'-0"

KEY NOTES

1. HVAC UNITS, REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION - SEE DETAIL 5/A7.02
2. CLASS "A" SINGLE-PLY ROOFING
3. EXHAUST DUCT w/ ROOF CAP, - SEE DETAIL 7/M0.11
4. CANT STRIP - SEE DETAIL 4/A7.02 2
5. OUTDOOR UNIT PLATFORM
6. ROOF VENT PENETRATION, -SEE 7/A7.02 & MECHANICAL DRAWINGS. 2
7. OUTDOOR UNIT ON PLATFORM. SEE MECHANICAL DRAWINGS
8. 22GA METAL PARAPET CAP - SEE DETAIL 5/A7.03
9. ROOF WALK MATS TYP., -SEE SPEC SECTION 075423
10. ROOF HATCH - SEE DETAIL 10/A7.01
11. RIGID INSULATION ROOF CRICKET - SEE DETAIL 8/A7.02
12. ROOF DRAIN AND OVERFLOW COMBO. ROOF DRAIN DOWN INSIDE WALL CONNECT TO STORM DRAIN SYSTEM BELOW GRADE. OVERFLOW DRAIN DOWN WALL DAYLIGHT THROUGH WALL 12" ABOVE F.F. -SEE DETAIL 1/A4.10 & 2/A7.02
13. HOSE-BIBB ON ROOF, -SEE 6/A7.02 AND MECHANICAL DRAWINGS. 2
14. 24GA METAL PARAPET CAP - SEE DETAIL 13/A7.02
15. CONDENSATE DRAIN PIPE ON ROOF, -SEE PLUMBING PLANS. 2
16. BUILT IN SHEET METAL GUTTER. DOWNSPOUT DOWN THROUGH COLUMN CONNECT TO STORM DRAIN SYSTEM BELOW GRADE
17. STANDING SEAM METAL ROOF - SEE SHEET A7.05 FOR TYPICAL DETAILS
18. SHEET METAL COPING.
19. DRYER VENT w/ ROOF CAP, SEE 7/M0.11. 2

GENERAL NOTES

1. ALL ROOF PENETRATIONS SHALL BE WEATHER TIGHT
2. ALL SHEET METAL COPING SHALL BE PAINTED TO MATCH ADJACENT FINISH. ALL FLASHING SHALL HAVE A 15# UNDERLAYMENT.

Owner:

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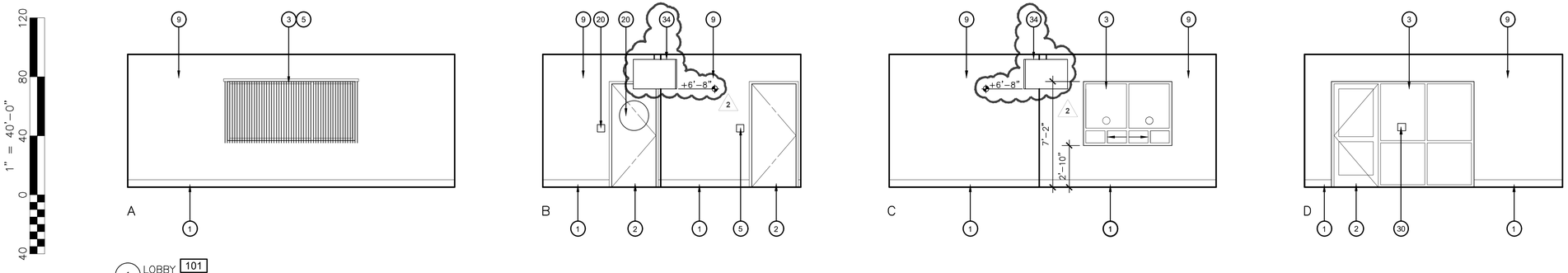
Sheet Title:

ROOF PLAN

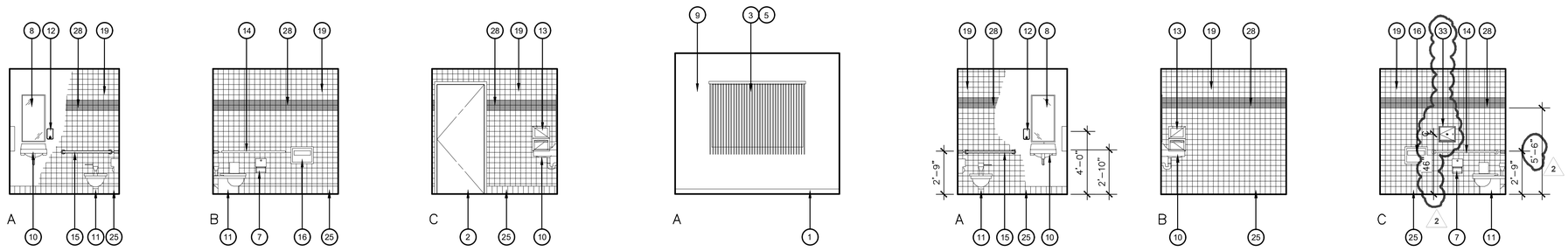
Job No.: **5527**

Sheet No.: **A4.10**

Release: ADDENDUM 2 2 .11/22/24



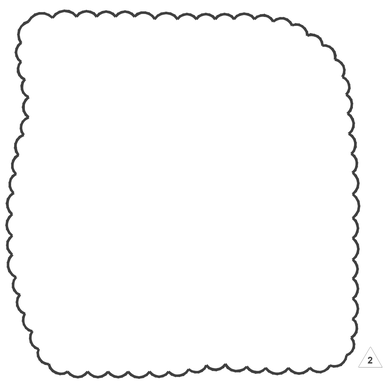
1 LOBBY 101
1/4" = 1'-0"

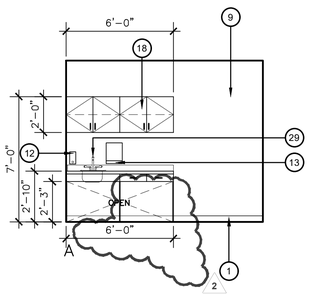


2 UNISEX TOILET 102 114 **SIM.**
1/4" = 1'-0"

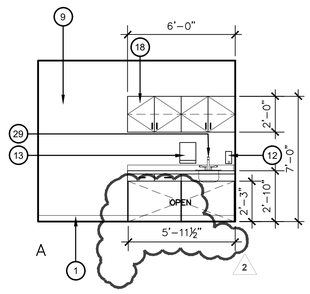
3 NURSES OFFICE 103
1/4" = 1'-0"

4 UNISEX TOILET 104
1/4" = 1'-0"

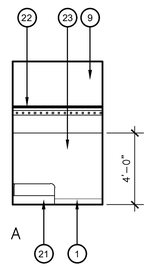




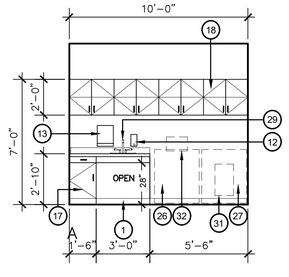
6 EXAM ROOM 106 108 112 **SIM.**
1/4" = 1'-0"



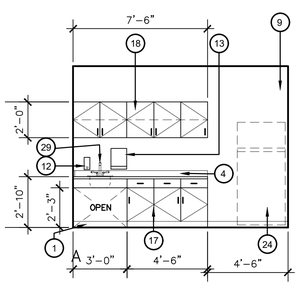
7 EXAM ROOM 107 109 110
1/4" = 1'-0"



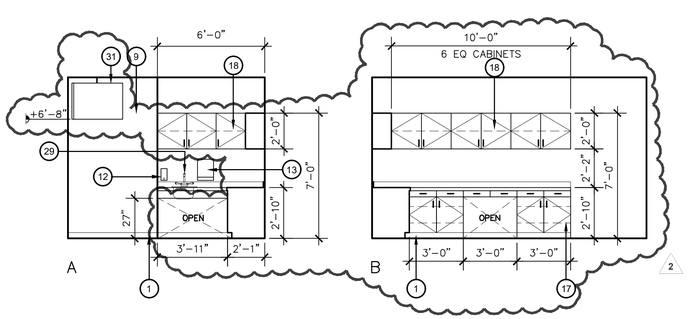
8 JANITOR CLOSET 111
1/4" = 1'-0"



9 LAUNDRY ROOM 113
1/4" = 1'-0"



10 BREAK ROOM 115
1/4" = 1'-0"



5 MEDICAL ASSISTANT OFFICE 105
1/4" = 1'-0"

KEY NOTES

1. 4" RUBBER TOPSET BASE
2. DOOR & FRAME,SEE DOOR SCHEDULE
3. WINDOW FRAME, SEE WINDOW SCHEDULE
4. 12 MM CORIAN COUNTERTOP WITH 4" BACKSPLASH
5. VERTICAL LOUVRE BLINDS
6. ROOM IDENTIFICATION SIGN, SEE DETAIL 5/A8.01
7. TOILET TISSUE DISPENSER
8. MIRROR
9. GYPSUM BOARD TEXTURED, PRIME AND PAINT.
10. LAVATORY - SEE PLUMBING DRAWINGS
11. FLOOR MOUNTED WATER CLOSET
12. WALL MOUNTED SOAP DISPENSER - F.B.O. INSTALLED BY CONTRACTOR
13. PAPER TOWEL DISPENSER
14. 48" LONG GRAB BAR GB-1 - SEE DETAIL 12/A8.01
15. 36" LONG GRAB BAR GB-1 - SEE DETAIL 12/A8.01
16. TOILET SEAT COVER DISPENSER
17. BASE CABINETS - SEE DETAIL 12/A8.02
18. UPPER CABINETS - SEE DETAIL 12/A8.02
19. CERAMIC WALL TILE
20. ACCESSIBLE RESTROOM SIGN - SEE DETAIL 2/A8.01
21. MOP SINK - SEE PLUMBING DRAWINGS
22. JANITOR'S SHELF & MOP HANGER - SEE DETAIL 14/A8.01
23. FRP
24. REFRIGERATOR - F.B.O.
25. 6" HIGH CERAMIC TILE COVE BASE
26. WASHER - F.B.O.
27. DRYER - F.B.O.
28. CERAMIC WALL TILE ACCENT COLOR
29. SINK W/ FAUCET - SEE PLUMBING
30. TACTILE EXIT SIGN - SEE DETAIL 4/A8.01
31. DRYER VENT BOX, -SEE MECHANICAL PLANS. FIELD VERIFY LOCATION.
32. WASHING MACHINE OUTLET BOX, -SEE PLUMBING PLANS. FIELD VERIFY LOCATION.
33. SPECIMAN PASS-THRU CABINET, -SEE SPEC SECTION 102800.
34. HANGING TV, -SEE 2/A4.10. 2

GENERAL NOTES

1. REFER TO ROOM FINISH SCHEDULE FOR FINISHES SEE REFLECTED CEILING PLANS FOR CEILING HEIGHTS & FINISHES
2. CONTRACTOR SHALL PROVIDE BACKING AS PER MANUFACTURES REQUIREMENTS FOR ALL WALL MOUNTED ACCESSORIES. SEE DETAIL 11/A8.01 FOR ACCESSORY MOUNTING HEIGHTS AND DETAIL 12/A8.02 FOR CASEWORK ANCHORING
3. COLORS FOR ALL ITEMS OF WORK SHALL BE SELECTED BY ARCHITECT
4. ALL CABINET DOOR PULLS SHALL BE MOUNTED VERTICALLY AND DRAWER PULLS SHALL BE MOUNTED HORIZONTALLY
5. CONTRACTOR SHALL COORDINATE w/ ELECTRICAL, PLUMBING, AND MECHANICAL DRAWINGS FOR LOCATIONS OF ALL OUTLETS, EXITS SIGNS, DATA BOXES, ACCESS DOORS, AND REQUIRED FINISHES
6. SEE DETAILS ON SHEET A8.01 FOR STANDARD MINIMUM ACCESSIBLE CLEARANCES/HEIGHTS AT TOILETS, LAVATORIES, TOILET ACCESSORIES, DRINKING FOUNTAINS, ETC.

Owner:

BAKERSFIELD CITY SCHOOL DISTRICT
1300 BAKER STREET
BAKERSFIELD, CA 93305

Project Name:

WELLNESS CENTER

Project Address:

DR. MARTIN LUTHER KING JR. ELEMENTARY SCHOOL
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LICENSED ARCHITECT CURTIS C. FLYNN No. C 29955 RENEWAL 5-31-25 STATE OF CALIFORNIA

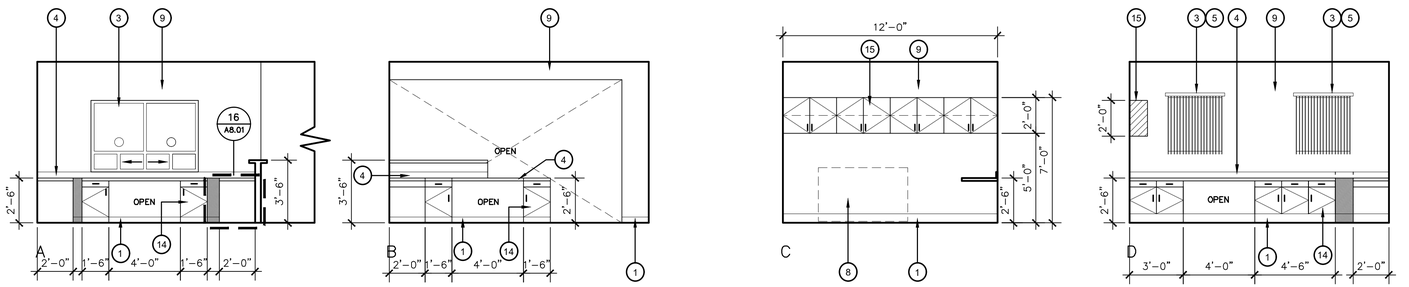
Sheet Title:

INTERIOR ELEVATIONS

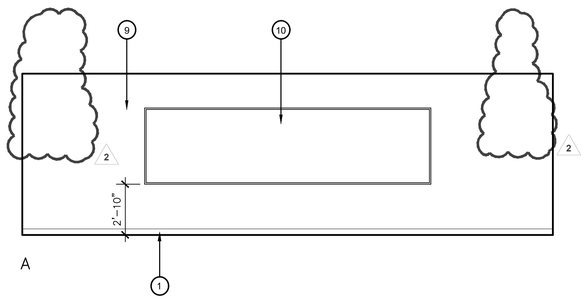
Job No.: **5527**

Sheet No.: **A5.10**

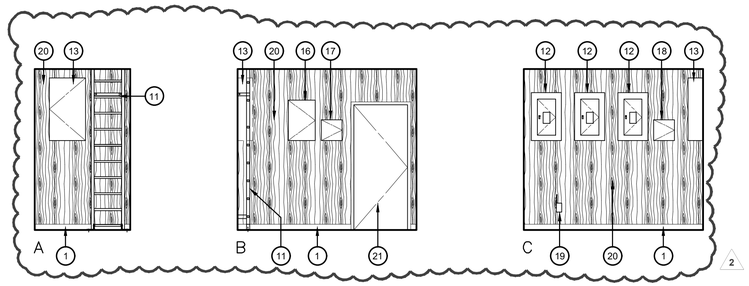
Release: ADDENDUM 2 2 .11/22/24



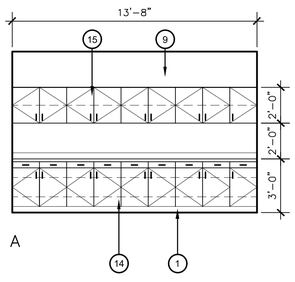
1 OFFICE 117
1/4" = 1'-0"



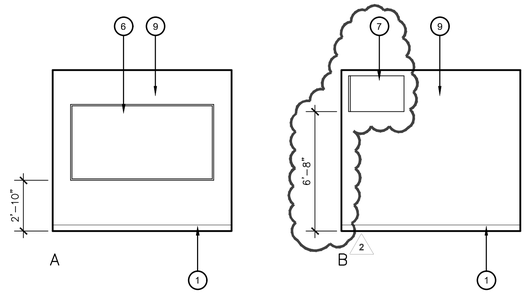
2 TRAINING ROOM 121
1/4" = 1'-0"



3 ELECT/SERVER ROOM 122
1/4" = 1'-0"



4 STORAGE ROOM 123
1/4" = 1'-0"



5 THERAPY ROOM 124
1/4" = 1'-0"

KEY NOTES

1. 4" RUBBER TOPSET BASE
2. NOT USED
3. WINDOW FRAME, SEE WINDOW ELEVATIONS & SCHEDULE
4. 12 MM CORIAN W/ 4" BACK SPLASH
5. VERTICAL LOUVRE BLINDS
6. 4'X8' MARKER BOARD - SEE DETAIL 9/A8.02
7. T.V BRACKETS - SEE DETAIL 2/A4.10 2
8. COPIER - F.B.O
9. GYPSUM BOARD TEXTURE, PRIME, AND PAINT.
10. 4' X 16' MARKERBOARD - SEE DETAIL 9/A8.02
11. ROOF ACCESS LADDER
12. ELECTRICAL PANEL, -SEE ELECTRICAL SHEETS.
13. IDF, -SEE ELECTRICAL SHEETS. 2
14. BASE CABINETS - SEE DETAIL 12/A8.02.
15. UPPER CABINETS - SEE DETAIL 12/A8.02.
16. SONITROL SECURITY CABINET, -SEE ELECTRICAL SHEETS.
17. FATC, -SEE ELECTRICAL SHEETS.
18. MAG CONTROL BOX, -SEE ELECTRICAL SHEETS.
19. HVAC WIRELESS GATEWAY, -SEE MECHANICAL SHEETS.
20. ½" PLY. WD. o/ GYP. BD.
21. DOOR & FRAME, -SEE SCHEDULE. 2

GENERAL NOTES

1. REFER TO ROOM FINISH SCHEDULE FOR FINISHES SEE REFLECTED CEILING PLANS FOR CEILING HEIGHTS & FINISHES
2. CONTRACTOR SHALL PROVIDE BACKING AS PER MANUFACTURES REQUIREMENTS FOR ALL WALL MOUNTED ACCESSORIES. SEE DETAIL 11/A8.01 FOR ACCESSORY MOUNTING HEIGHTS AND DETAIL 12/A8.02 FOR CASEWORK ANCHORING
3. COLORS FOR ALL ITEMS OF WORK SHALL BE SELECTED BY ARCHITECT
4. ALL CABINET DOOR PULLS SHALL BE MOUNTED VERTICALLY AND DRAWER PULLS SHALL BE MOUNTED HORIZONTALLY
5. CONTRACTOR SHALL COORDINATE w/ ELECTRICAL, PLUMBING, AND MECHANICAL DRAWINGS FOR LOCATIONS OF ALL OUTLETS, EXITS SIGNS, DATA BOXES, ACCESS DOORS, AND REQUIRED FINISHES
6. SEE DETAILS ON SHEET A8.01 FOR STANDARD MINIMUM ACCESSIBLE CLEARANCES/HEIGHTS AT TOILETS, LAVATORIES, TOILET ACCESSORIES, DRINKING FOUNTAINS, ETC.

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CURTIS E. FLYNN
No. C 28965
REN. 5-31-25
STATE OF CALIFORNIA

Sheet Title:

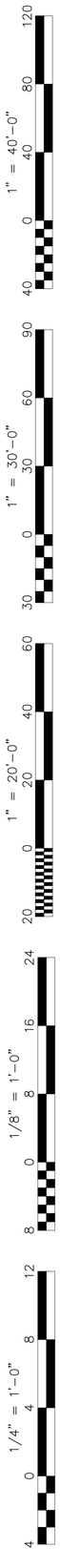
INTERIOR ELEVATIONS

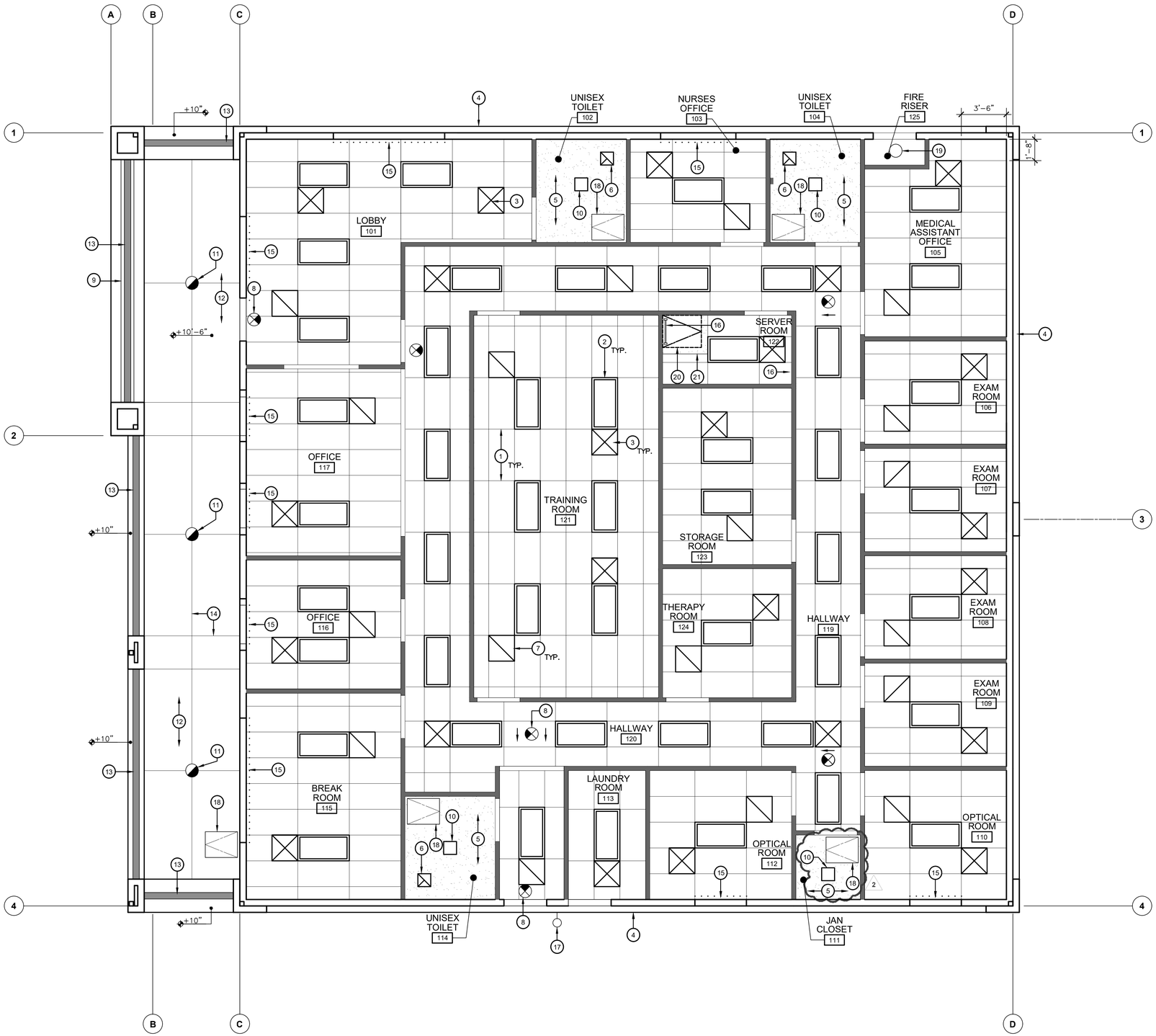
Job No.: **5527**

Sheet No.: **A5.11**

Release: ADDENDUM 2 2 .11/22/24

G:\2022frs\22-5527 MLK WELLNESS CENTER\Sheets SEAN PARKER 12/20/24





REFLECTED CEILING PLAN

WELLNESS CENTER

SCALE: 1/4" = 1'-0"

KEY NOTES

1. SUSPENDED ACOUSTICAL PANEL CEILING SEE SHEETS A8.03 & A8.04
2. RECESSED LIGHT FIXTURE - SEE ELECTRICAL
3. MECHANICAL SUPPLY GRILLE - SEE MECHANICAL
4. ROOF OVERHANG
5. GYPSUM BOARD CEILING - SEE DETAIL 14/A7.05
6. EXHAUST FAN - SEE MECHANICAL
7. RETURN GRILLE - SEE MECHANICAL
8. ILLUMINATED EXIT SIGN - SEE ELECTRICAL
9. BOX BEAM
10. 1'X1' SURFACE MOUNTED LIGHT FIXTURE - SEE ELECTRICAL
11. CAN LIGHT FIXTURE
12. CEMENT PLASTER SOFFIT
13. 3" CONTINUOUS VENT SCREED
14. CONTROL JOINT
15. VERTICAL BLINDS
16. ROOF ACCESS LADDER
17. WALL MOUNTED LIGHT FIXTURE
18. ATTIC ACCESS DOOR - SEE DETAIL 1/A7.02
19. FIRE RISER
20. ROOF ACCESS DOOR, -SEE 10/A7.01
21. HANGING SOFFIT

GENERAL NOTES

1. ALL GYPSUM BOARD SOFFITS AND CEILINGS SHALL BE 5/8" THICK, UNLESS NOTED OTHERWISE.
2. SEE INTERIOR ELEVATIONS / SECTIONS FOR ADDITIONAL INFORMATION AT SPECIAL CEILING AREAS
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROPER WATER TIGHT FLASHING AROUND ALL ROOF PENETRATIONS, PER SMACNA STANDARDS

LEGEND

- SUSPENDED ACOUSTICAL TILE CEILING TO REMAIN
- SOFFIT
- 2x4 RECESSED LIGHT FIXTURE (SEE ELECTRICAL DRAWINGS)
- RECESSED CAN LIGHT
- WALL MOUNTED LIGHT FIXTURE
- 1x1 SURFACE MOUNTED LIGHT FIXTURE (SEE ELECTRICAL DRAWINGS)
- EXIT SIGN
- MECHANICAL SUPPLY GRILLE (SEE MECHANICAL DRAWINGS)
- EXHAUST FAN (SEE MECHANICAL DRAWINGS)
- GYPSUM BOARD CEILING

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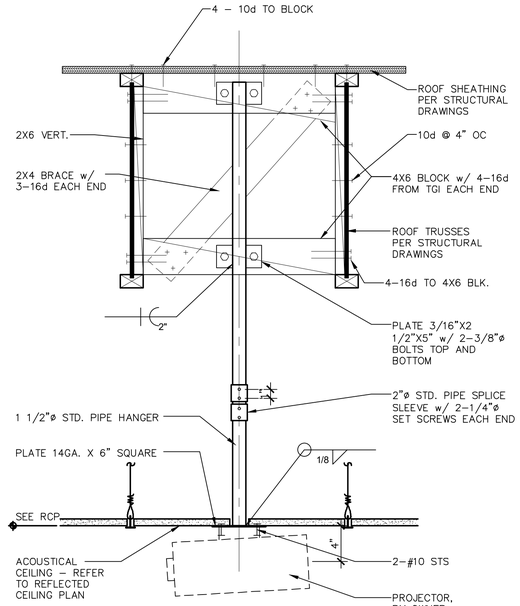
Sheet Title:

REFLECTED CEILING PLAN

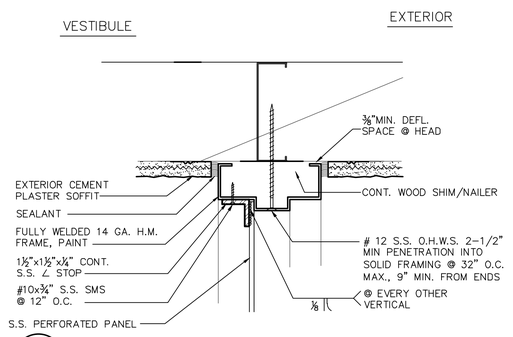
Job No.: **5527**

Sheet No.: **A6.10**

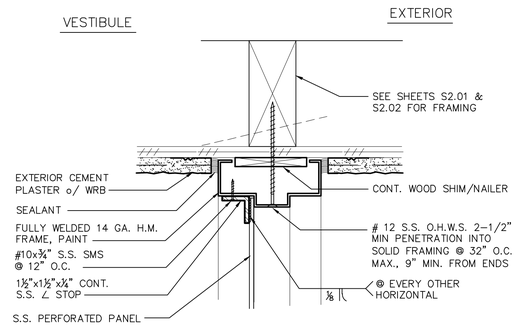
Release: ADDENDUM 2 (2) .11/22/24



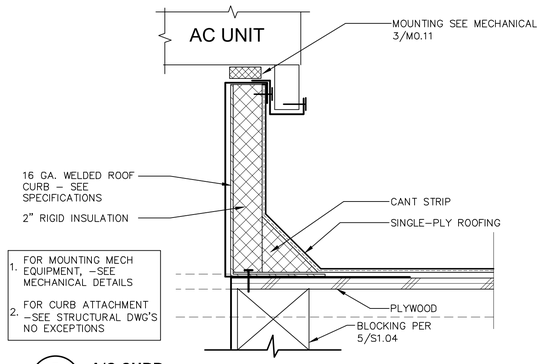
14 A7.02 PROJECTOR MOUNTING
ADM200–02
SCALE: 1 1/2" = 1'–0"



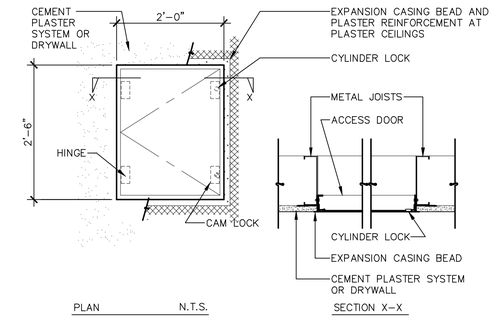
9 A7.02 H.M. ARCHITECTURAL SCREEN HEAD
ADD141–09
SCALE: 3" = 1'–0"



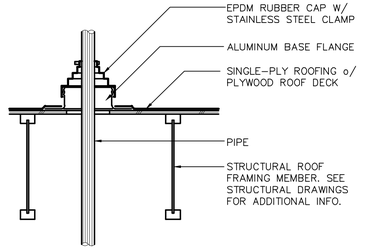
10 A7.02 H.M. ARCHITECTURAL SCREEN JAMB
ADD141–08
SCALE: 3" = 1'–0"



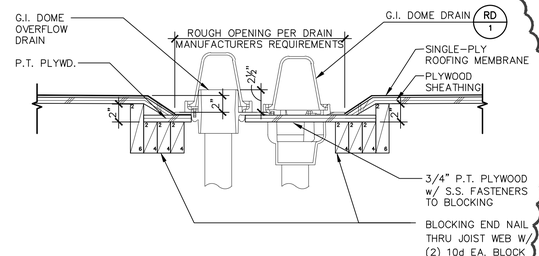
5 A7.02 A/C CURB
ADR200–20
SCALE: 3" = 1'–0"



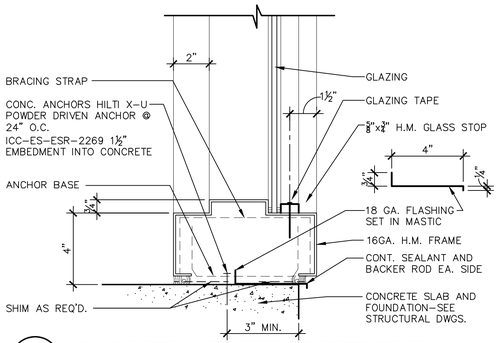
1 A7.02 FLUSH METAL ACCESS DOOR AT CEILING
ADC030–01
SCALE: 3/4" = 1'–0"



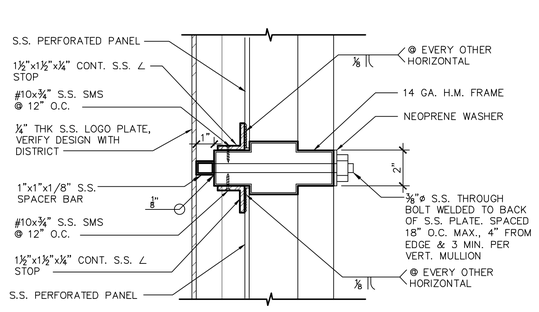
6 A7.02 DET. AT PIPE PENETRATION
ADR100–02
SCALE: 1" = 1'–0"



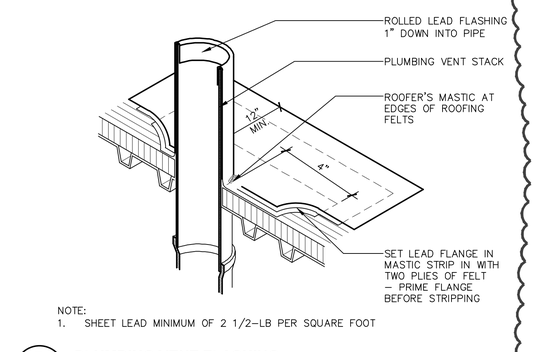
2 A7.02 ROOF DRAIN
ADR100–04_ADD2
SCALE: 1 1/2" = 1'–0"



15 A7.02 HOLLOW METAL WINDOW SILL @ EXTERIOR WALL
ADG101–01
SCALE: 3" = 1'–0"

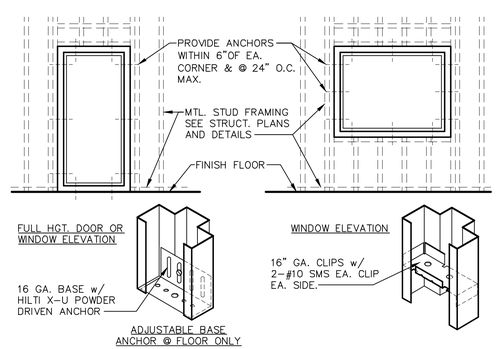


11 A7.02 H.M. ARCHITECTURAL SCREEN MULLION
ADD141–10
SCALE: 3" = 1'–0"

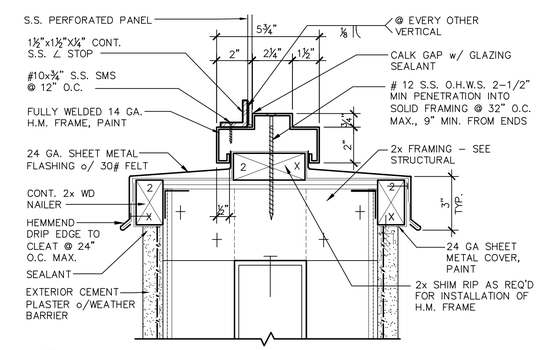


NOTE:
1. SHEET LEAD MINIMUM OF 2 1/2–LB PER SQUARE FOOT

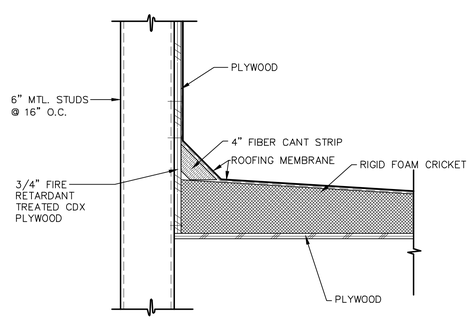
7 A7.02 PLUMBING VENT FLASHING
ADR100–05
SCALE: 3" = 1'–0"



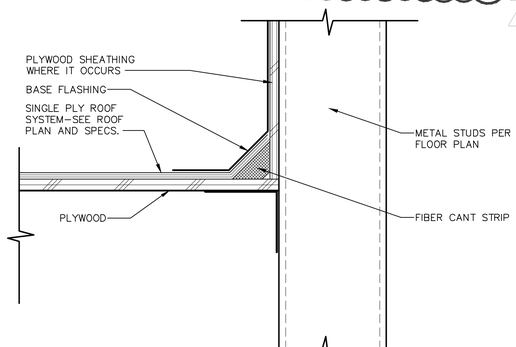
16 A7.02 TYPICAL H.M. FRAME CONNECTION TO STEEL STUDS
ADG130–01
SCALE: N.T.S.



12 A7.02 H. M. ARCHITECTURAL SCREEN SILL
ADD141–05
SCALE: 3" = 1'–0"



8 A7.02 CANT AND CRICKET
ADR133–02
SCALE: 1 1/2" = 1'–0"



4 A7.02 ROOF TO WALL FLASHING
ADR120–02
SCALE: 3" = 1'–0"

Owner:

BAKERSFIELD CITY SCHOOL DISTRICT
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Sheet Title:
EXTERIOR DETAILS

Job No.: **5527**

Sheet No.: **A7.02**

Release: ADDENDUM 2 (2) 11/22/24

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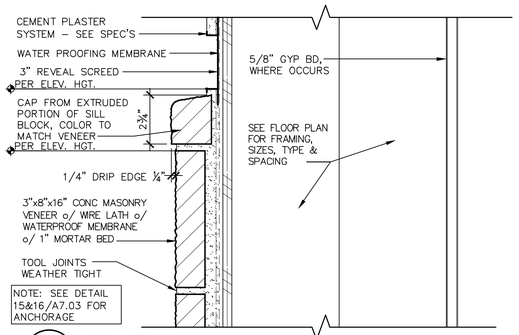
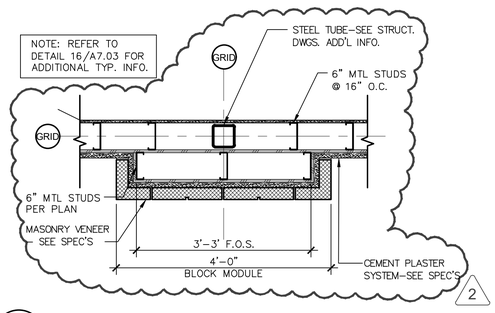
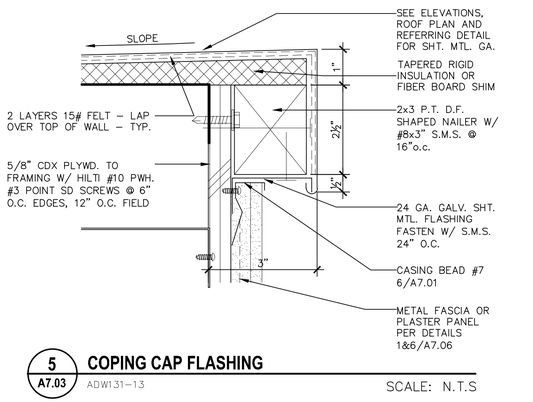


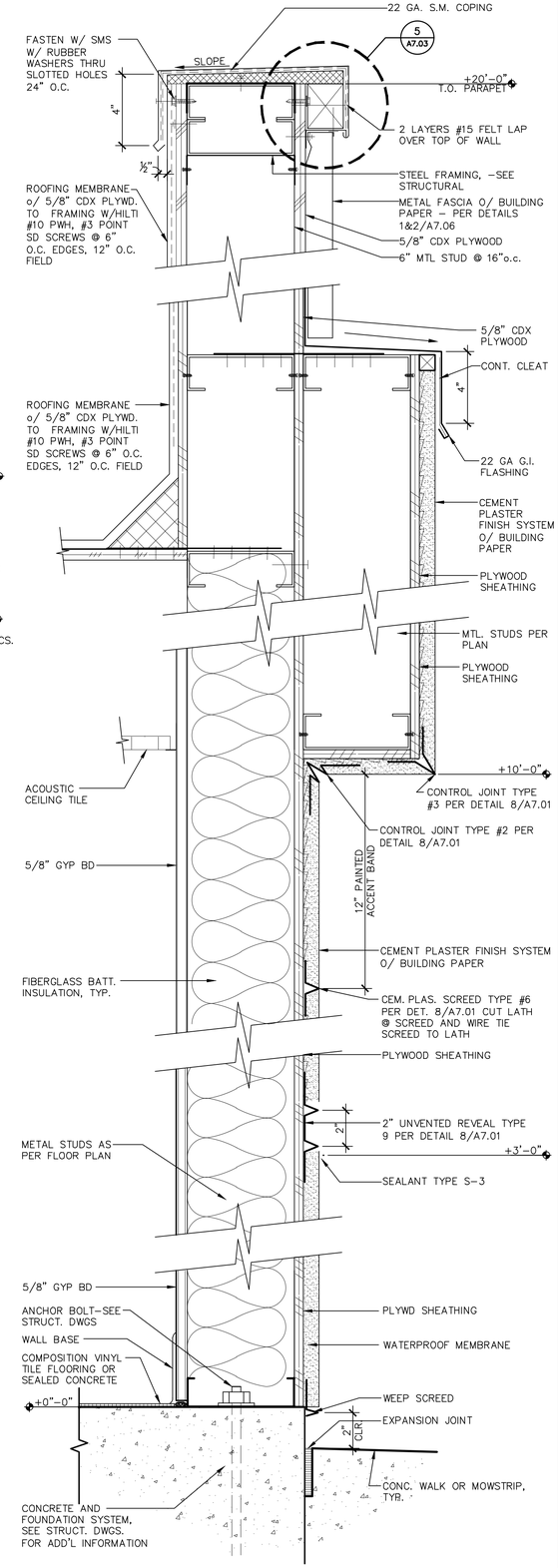
13 / A7.03 — CMU VENEER ADW142–03 SCALE: 3" = 1'–0"



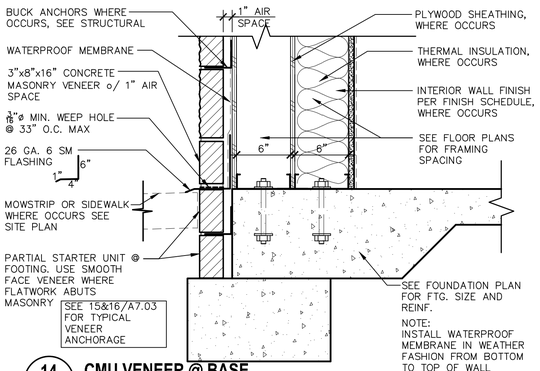
9 / A7.03 — PILASTER COLUMN DETAIL ADW132–09 SCALE: 3/4" = 1'–0"



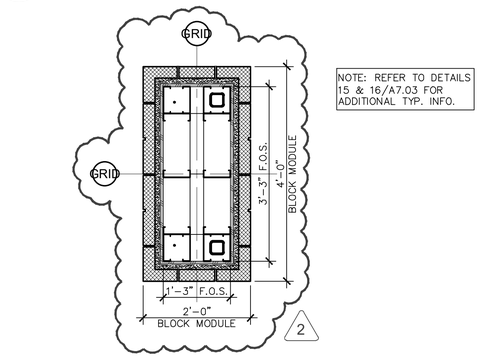
5 / A7.03 — COPING CAP FLASHING ADW131–13 SCALE: N.T.S



4 / A7.03 — WALL SECTION ADW1.31–20 SCALE: 3" = 1'–0"

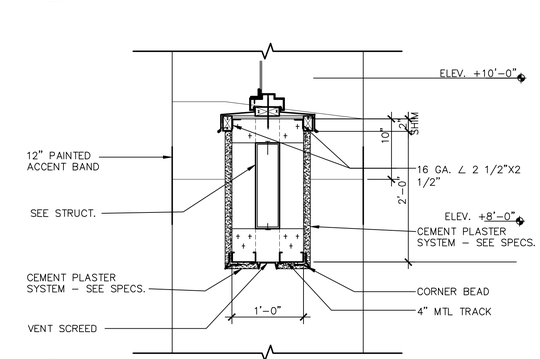


14 / A7.03 — CMU VENEER @ BASE ADW142–02 SCALE: 1 1/2" = 1'–0"

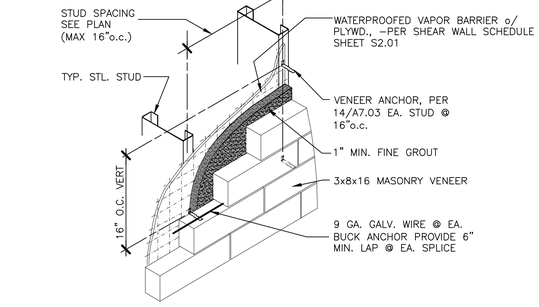


NOTE: REFER TO DETAILS 15 & 16/A7.03 FOR ADDITIONAL TYP. INFO.

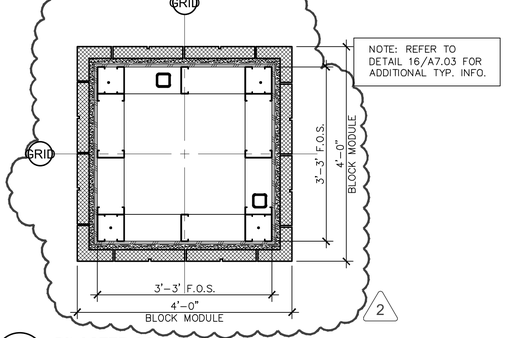
10 / A7.03 — COLUMN DETAIL ADW132–05 SCALE: 3/4" = 1'–0"



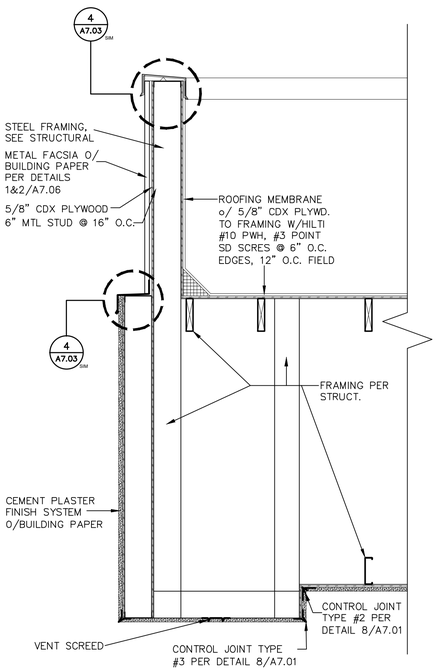
6 / A7.03 — BOX BEAM DETAIL ADW131–14 SCALE: 1" = 1'–0"



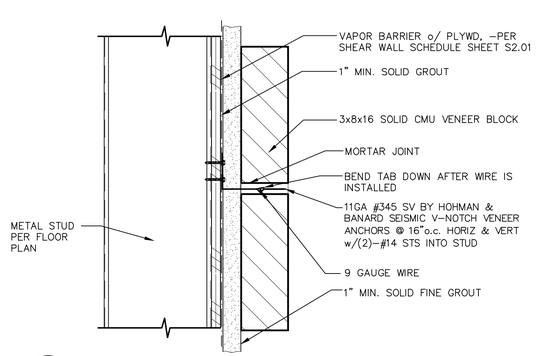
15 / A7.03 — VENEER ANCHORAGE @ STEEL STUD ADW132–03



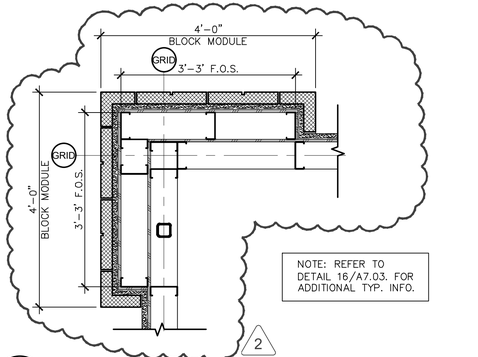
11 / A7.03 — PILASTER COLUMN DETAIL ADW132–04 SCALE: 3/4" = 1'–0"



8 / A7.03 — PARAPET FRAMING ADR131–04 SCALE: 3/4" = 1'–0"



16 / A7.03 — VENEER ANCHOR ADW132–02 SCALE: 3" = 1'–0"



12 / A7.03 — PILASTER COLUMN DETAIL ADW132–06 SCALE: 3/4" = 1'–0"

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EXTERIOR DETAILS

Job No.: **5527**

Sheet No.: **A7.03**

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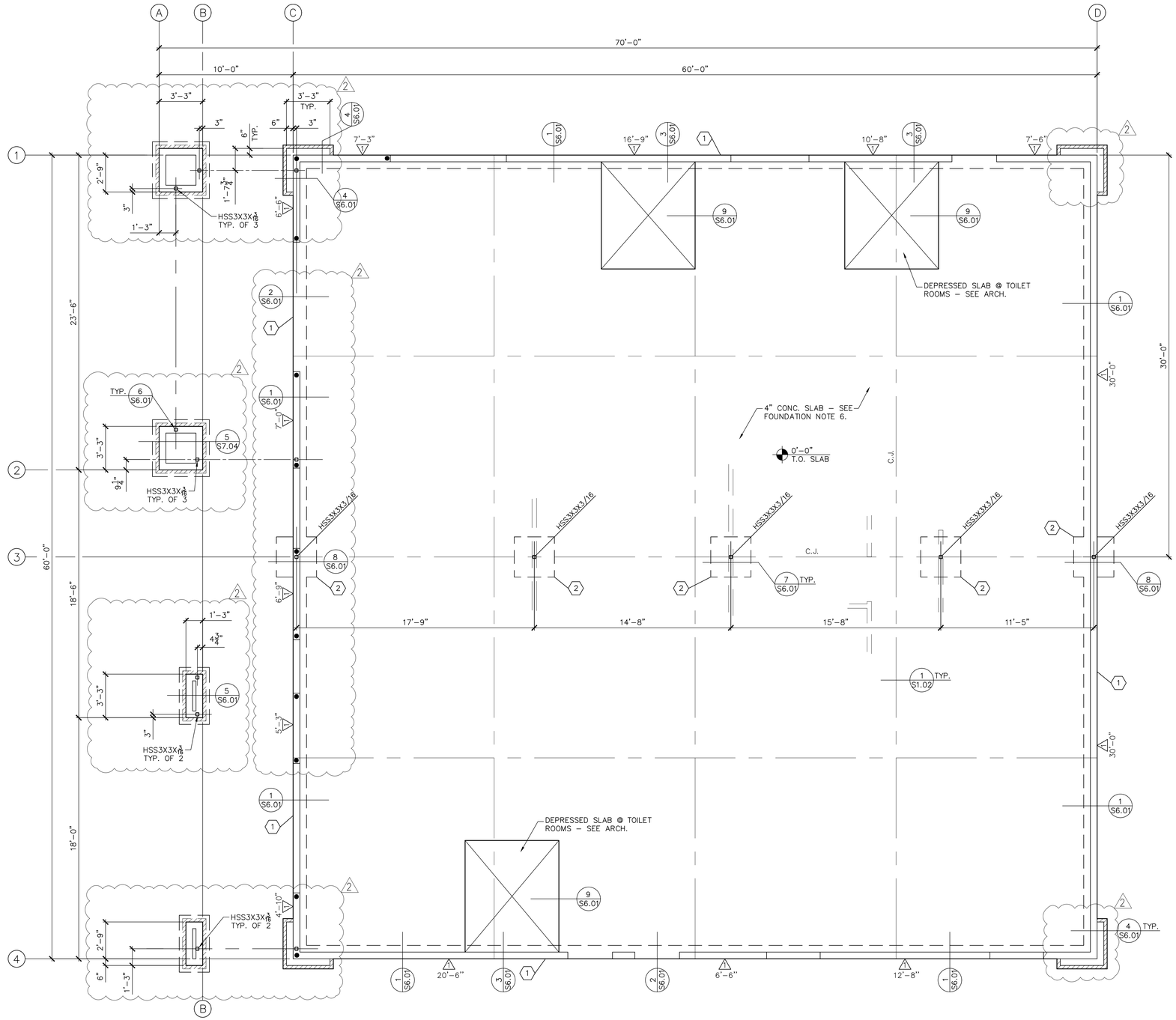

FOUNDATION PLAN

SCALE: 1/4"=1'-0"

FOUNDATION NOTES

1. REFER TO GENERAL NOTES AND TYPICAL DETAILS ON SHEET S1.01 THRU S1.05.
2. SEE DETAIL 5/S1.03 WHERE PIPES INTERSECT FOOTING.
3. ALL EMBEDDED ITEMS MUST BE TIED IN PLACE AND SECURE PRIOR TO FOUNDATION INSPECTION.
4. SEE 1/S1.02 FOR METHOD OF POURING CONCRETE SLABS ON GRADE.
5. PLYWOOD WALL SHEATHING IS TO BE APPLIED OVER THE ENTIRE WALL.
6. 4" (MIN.) THICK CONCRETE SLAB WITH #3 BARS AT 16"OC EACH WAY SET 1½" DOWN FROM TOP OF SLAB. MAINTAIN MINIMUM SLAB THICKNESS AT SLOPED SLABS.
7. ● DENOTES HOLDOWN TYPE "1" PER "HOLDOWN SCHEDULE", THIS SHEET.
8. SEE 10/S1.05 FOR TYPICAL STEEL STUD TO COLUMN CONNECTION.
9. ◁ DENOTES SHEAR WALL PER "SHEAR WALL SCHEDULE", THIS SHEET.

WALL SHEATHING SCHEDULE

TYPE	THICK-NESS	PANEL INDEX	GRADE	WIDTH FRAMING MEMBER	SCREW SIZE	SCREW SPACING PES	SCREW SPACING INT	ANCHOR SCREWS DIA-METER	ANCHOR SCREWS EMBED. DEPTH	ANCHOR SCREWS SPACING	REFERENCE	ASD CAPACITY (PLF) WIND / SEISMIC
1	1/2"	32/16	CDX STRUCT 1 PLYWD.	STEEL STUD	#10 SMS	6	12	1/4"	1¾"	PER DETAIL	SEE 2/S1.04	455 / 356

NOTES:
1. PROVIDE FRAMING MEMBERS AT MINIMUM WIDTH INDICATED WHERE PLYWOOD SHEETS ARE SPLICED.
2. P.E.S. - PLYWOOD EDGE SCREW SPACING
3. INT - INTERIOR PLYWOOD SCREWS TO SUPPORTS, NOT OTHERWISE SPECIFIED. SEE 2/S1.04 FOR OTHER INFORMATION.
4. SMS - SHEET METAL SCREW (1" MIN. LENGTH)
5. SCREWS USED TO ATTACH SHEATHING SHALL BE IN ACCORDANCE WITH ASTM C1513.
6. 15/32" PLYWOOD IS ACCEPTAPLE WITH DIMENSIONAL CONSIDERATION.

FOOTING SCHEDULE

MARK	PLAN DIM.	MIN. DEPTH	REINFORCEMENT
1	1'-0" WD.	1'-6"	2-#5 CONT. TOP & BOT.
2	3'-0" SQ.	1'-6"	3-#5 EA. WAY BOT.

HOLDOWN SCHEDULE

TYPE	SIMPSON HOLDOWN	MIN. POST	FASTENERS SCREWS TO POST[3]	ANCHOR BOLTS	DETAIL REFERENCE
1	S/HDU6	DBL. 600S162-68	12 - #14	5/8"ø	8/S1.03

NOTES:
1. INSTALL HOLDOWN IMMEDIATELY ADJACENT TO END OF WALL, AS SHOWN ON FOUNDATION PLAN, ATTACH TO POST.
2. INSTALL PER MANUFACTURERS REQUIREMENTS AND GUIDELINES.
3. PROVIDE PLYWOOD EDGE SCREWS TO POST AT HOLDOWN.
4. ● REFERS TO HOLDOWN TYPE 1.

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Sheet Title:

FOUNDATION PLAN

Job No.: **5527**

Sheet No.: **S2.01**

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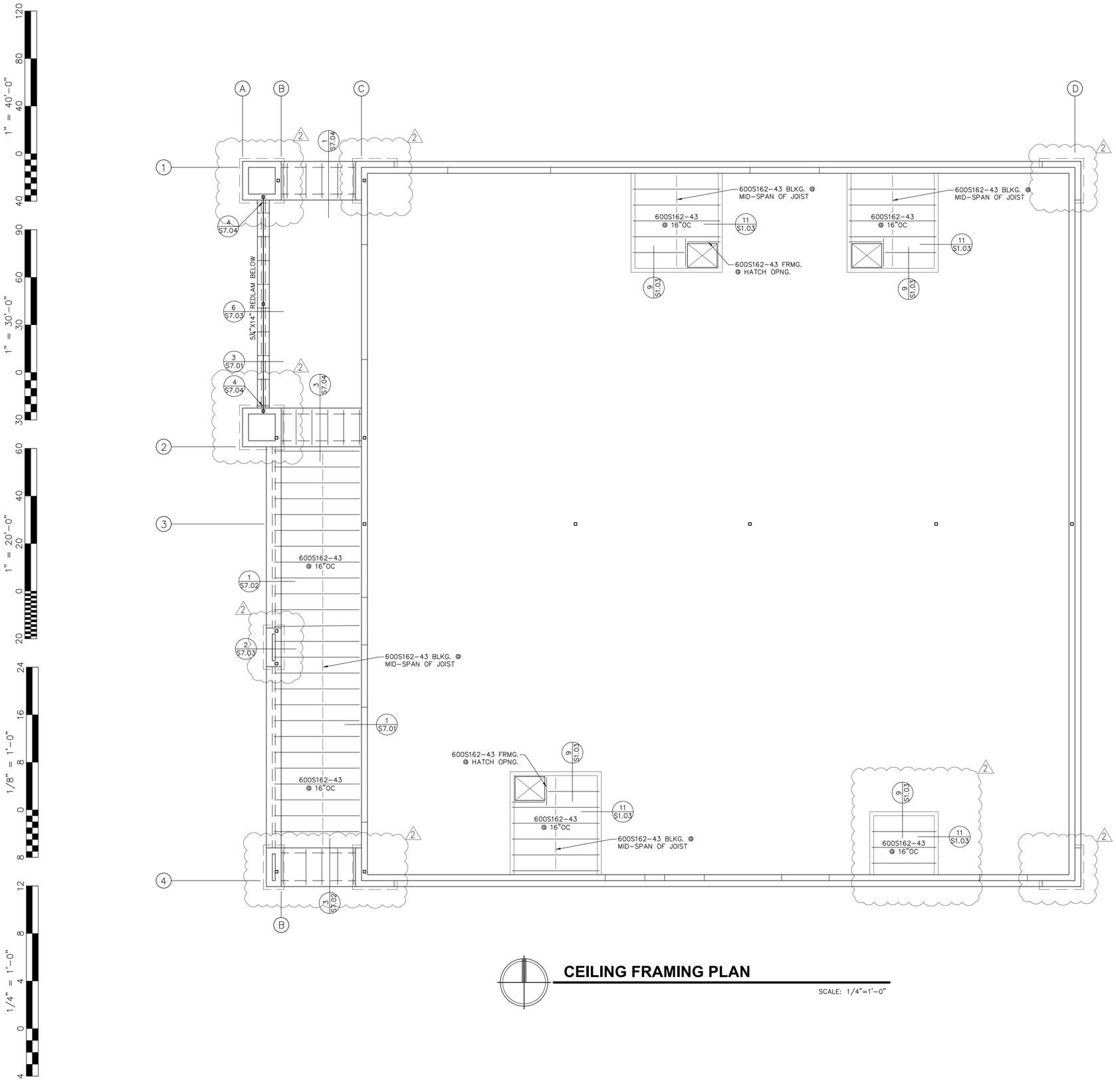

CEILING FRAMING PLAN

SCALE: 1/4"=1'-0"

CEILING FRAMING NOTES

1. REFER TO GENERAL NOTES ON SHEETS S1.01 THRU S1.05.
2. CONTRACTOR SHALL VERIFY FIRE SPRINKLER LINE LAYOUT AND PROVIDE FOR ADDITIONAL FRAMING AS REQUIRED FOR PROPER SUPPORT.
3. CONTRACTOR SHALL VERIFY AND COORDINATE THE LOCATIONS OF ALL ROOF SUPPORTED MECHANICAL AND ELECTRICAL EQUIPMENT.

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CEILING FRAMING PLAN

Job No.:

5527

Sheet No.:

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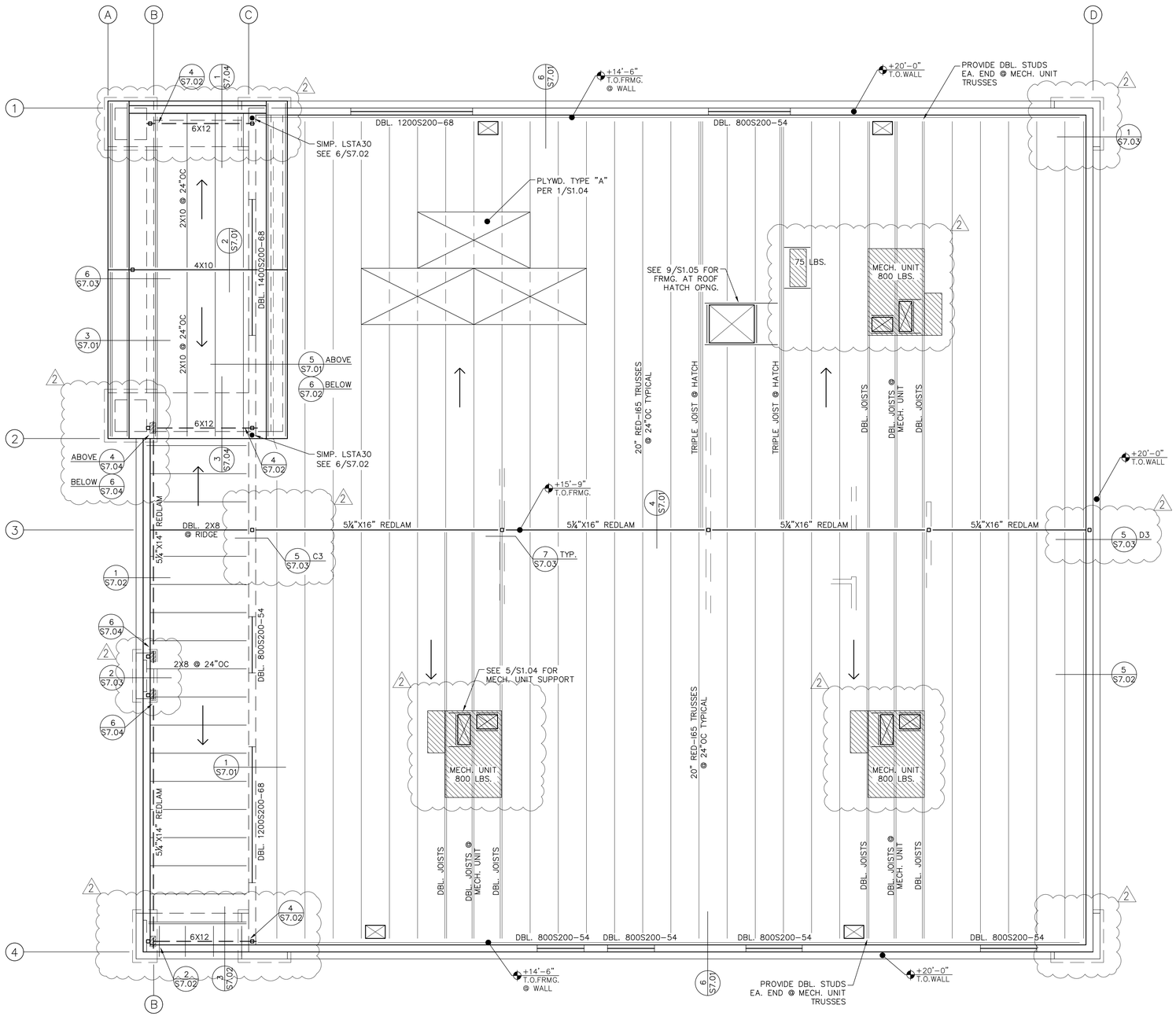

ROOF FRAMING PLAN

SCALE: 1/4"=1'-0"

ROOF FRAMING NOTES

1. REFER TO GENERAL NOTES ON SHEETS S1.01 THRU S1.05.
2. ALL ROOF FRAMING SPACES AS SHOWN ON PLANS SHALL BE AS MEASURED ON OF SLOPE.
3. ALL ROOF SHEATHING SHALL BE TYPE "A" PER DETAIL 1/S1.04, U.N.O.
4. SEE DETAIL 9/S1.05 FOR TYPICAL FRAMING AT ROOF OPENINGS.
5. CONTRACTOR SHALL VERIFY FIRE SPRINKLER LINE LAYOUT AND PROVIDE FOR ADDITIONAL FRAMING AS REQUIRED FOR PROPER SUPPORT.
6. CONTRACTOR SHALL VERIFY AND COORDINATE THE WEIGHTS & LOCATIONS OF ALL ROOF SUPPORTED MECHANICAL AND ELECTRICAL UNITS AND PROVIDE ADDITIONAL FRAMING AS REQUIRED FOR PROPER SUPPORT.
7. ⟶ REPRESENTS DIRECTION OF DOWNWARD SLOPE.
8. ALL POST TO BEAM CONNECTIONS SHALL HAVE SIMPSON PC OR EPC CONNECTORS, U.N.O..
9. USE SPLICE PER 6/S1.05 TYPICAL, U.N.O.
10. ALL WALLS SHALL BE 600S162-43 STUDS @ 16"OC, U.N.O.
11. PROVIDE COMPLETE TRUSS DRAWINGS AND CALCULATIONS. TRUSS DRAWINGS MUST BE APPROVED WITHIN 30 DAYS OF PERMIT ISSUANCE. NO INSPECTIONS WILL BE PERFORMED IF TRUSS DRAWINGS ARE NOT APPROVED AFTER 30 DAYS. TRUSS DRAWINGS MUST INCLUDE THE HANGERS FOR TRUSSES.
12. APPROVED TRUSS DRAWINGS MUST BE ON JOB SITE FOR INSPECTION PURPOSES.

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ROOF FRAMING PLAN

Job No.:

5527

Sheet No.:

S4.01

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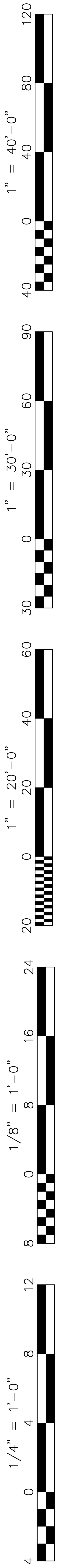

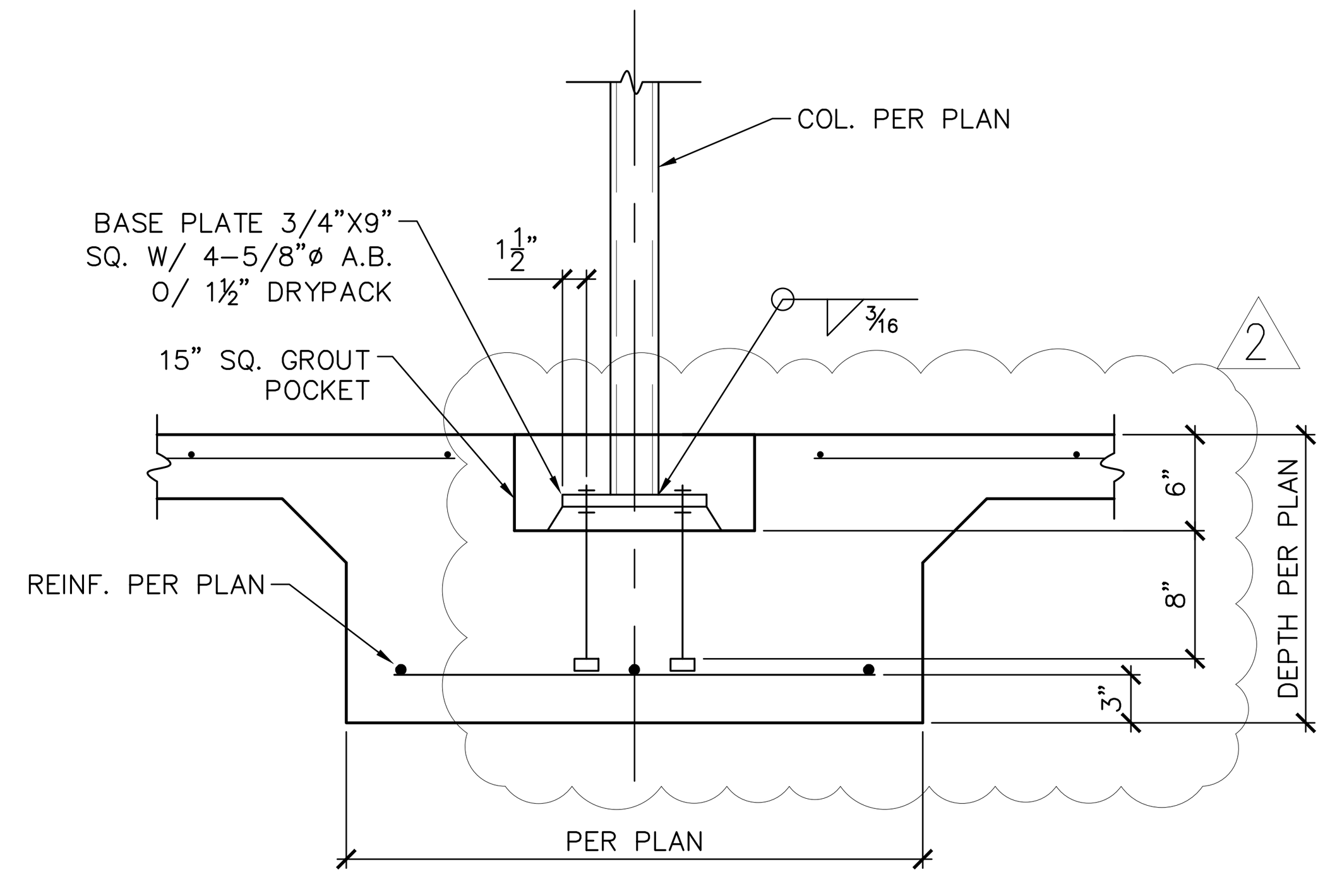

DETAIL 7 S6.01
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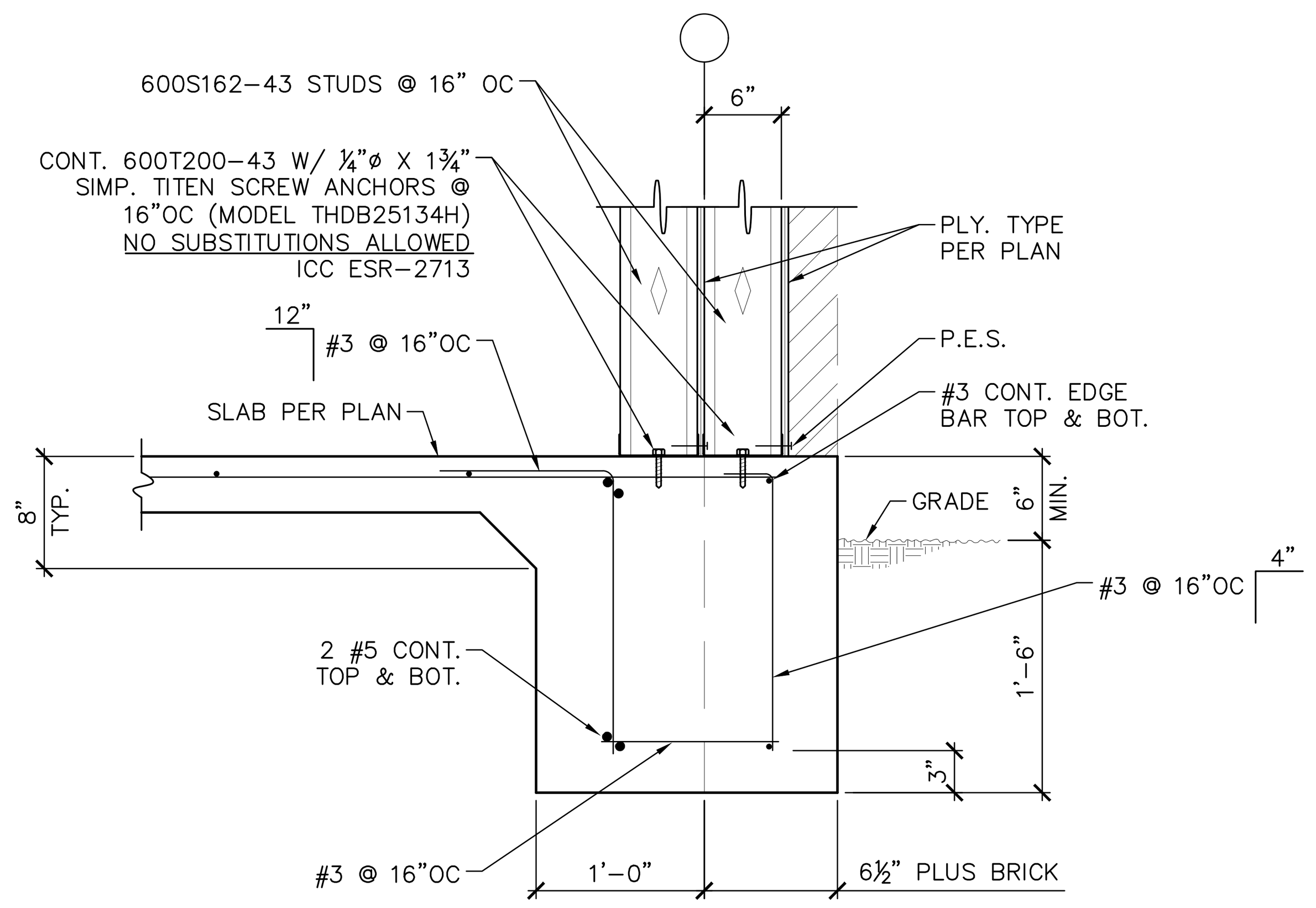

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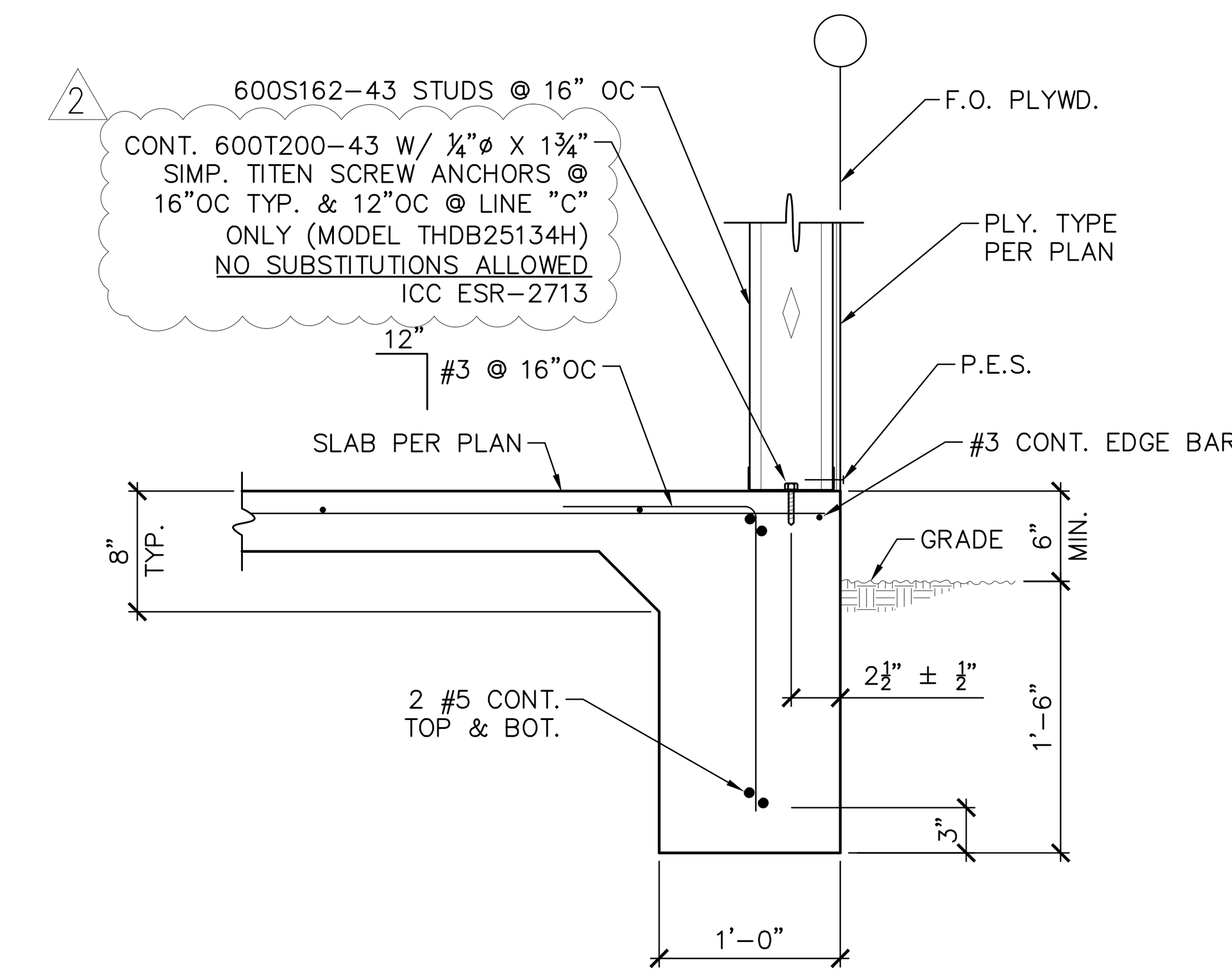

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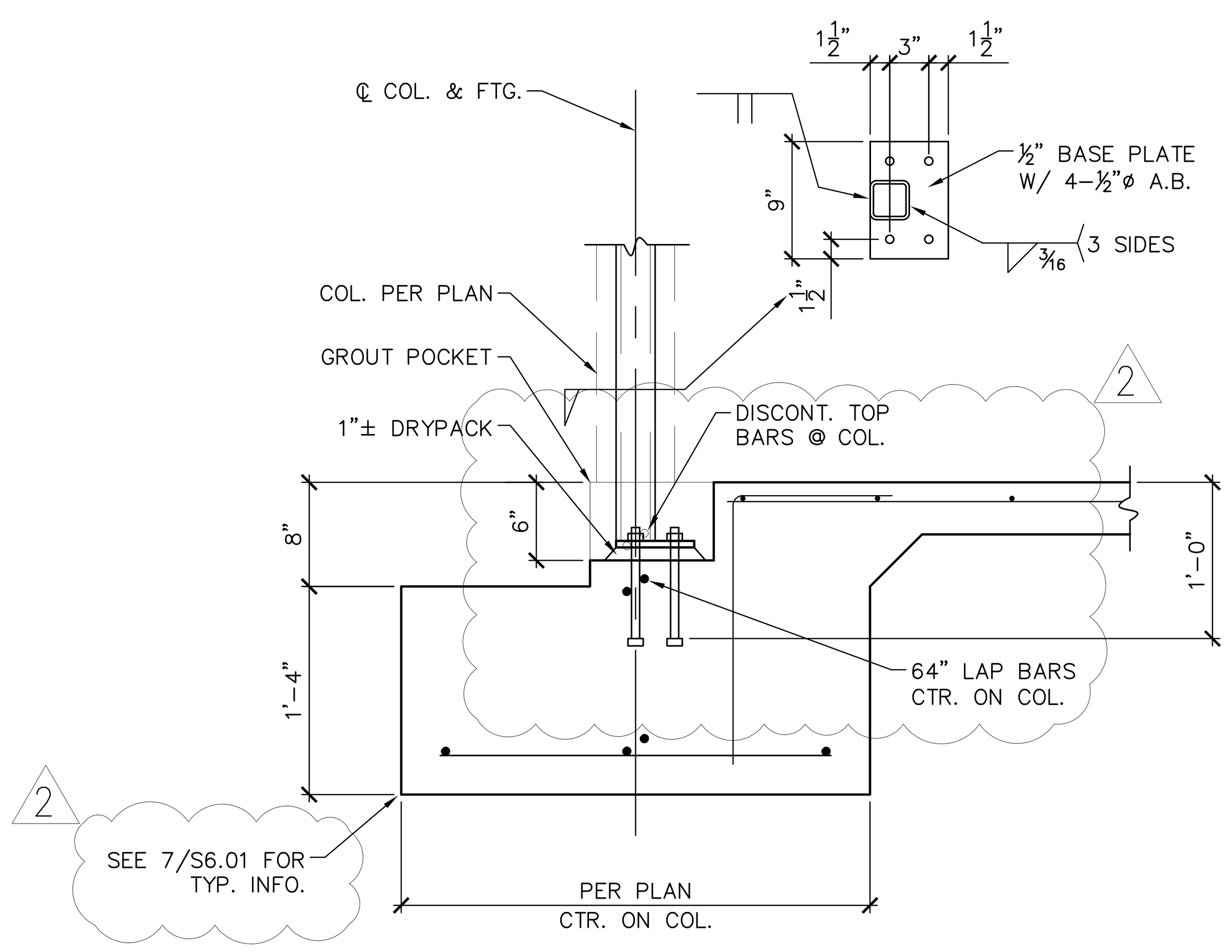

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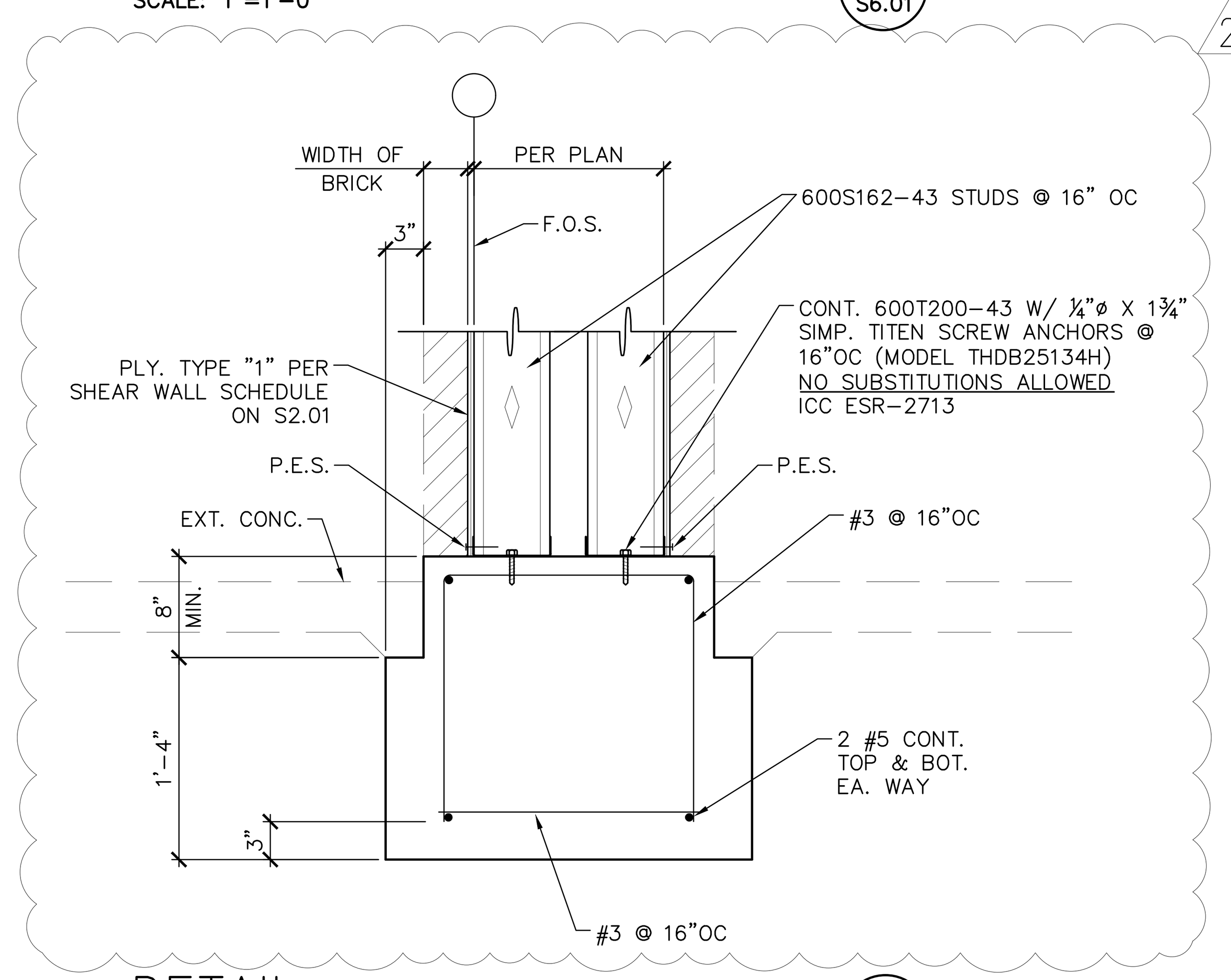

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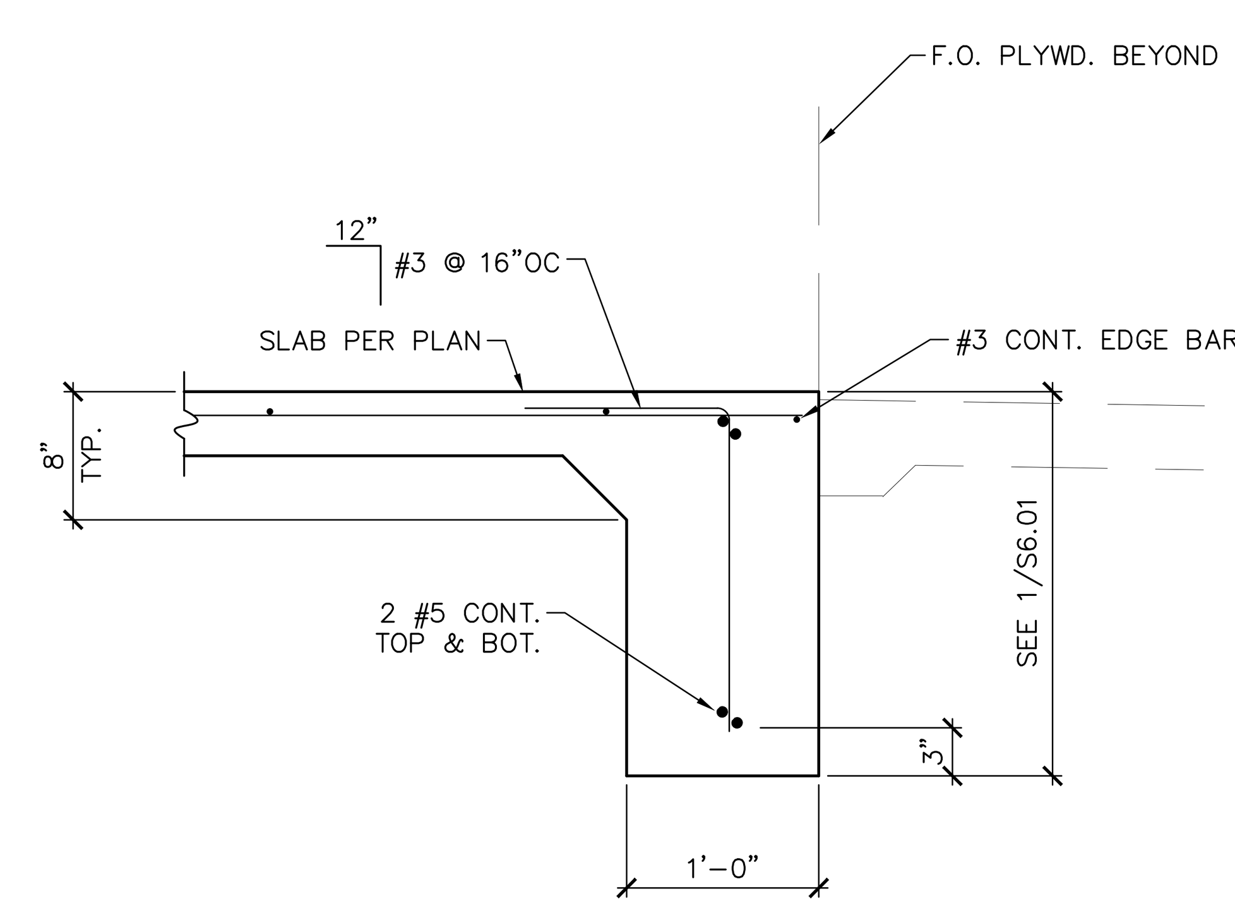

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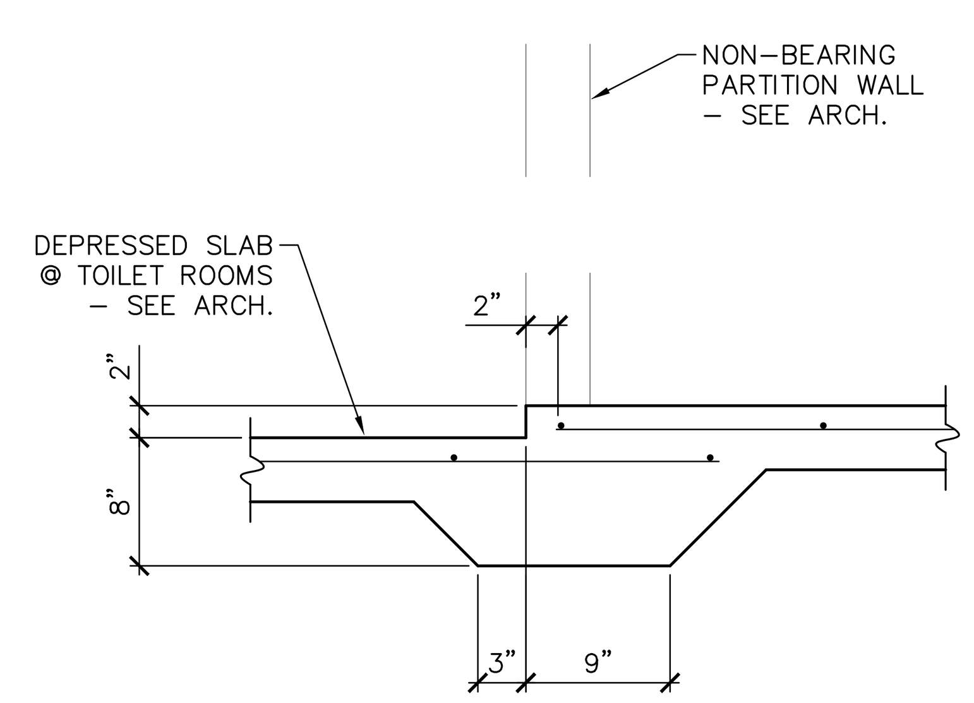

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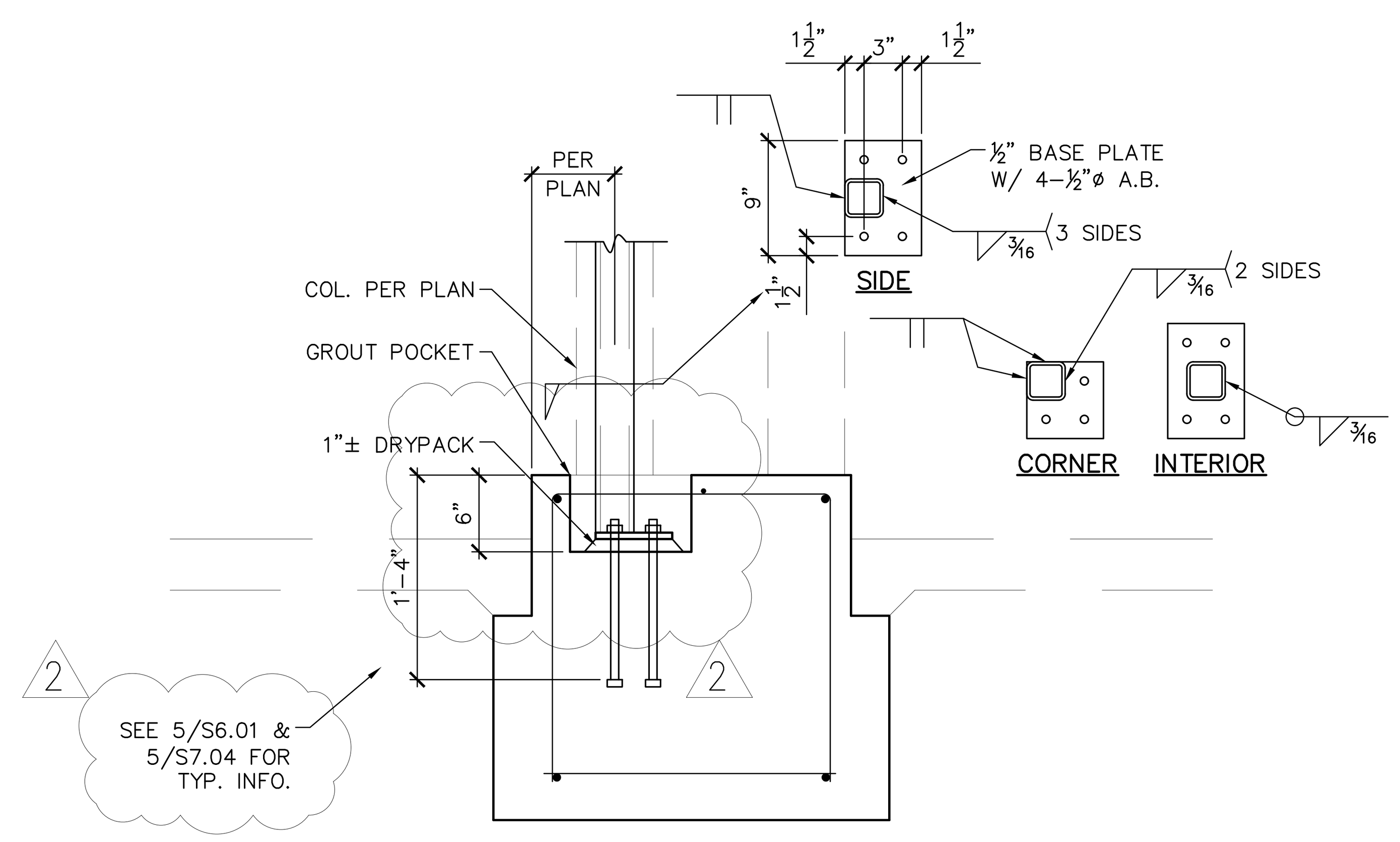

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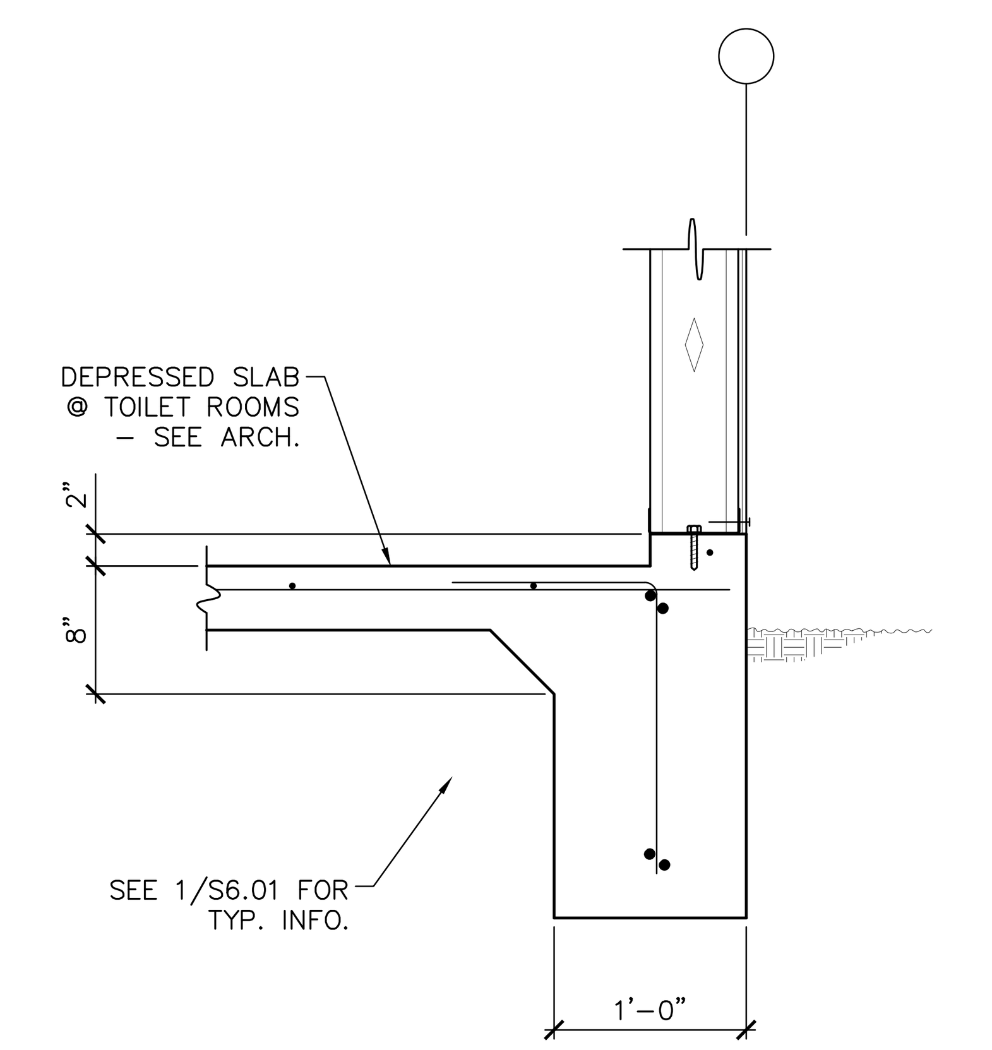

DETAIL 3 S6.01
SCALE: 1"=1'-0"

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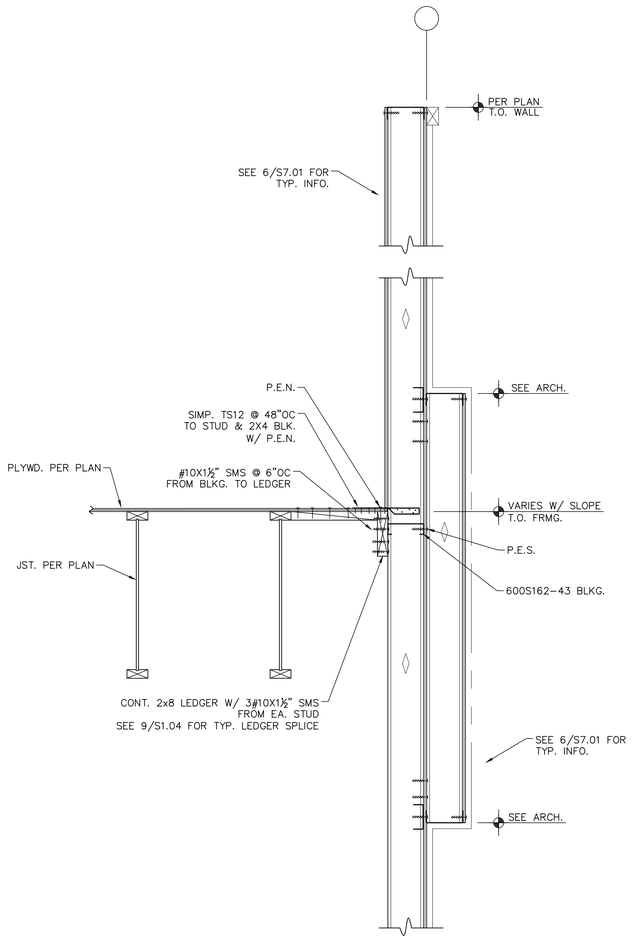

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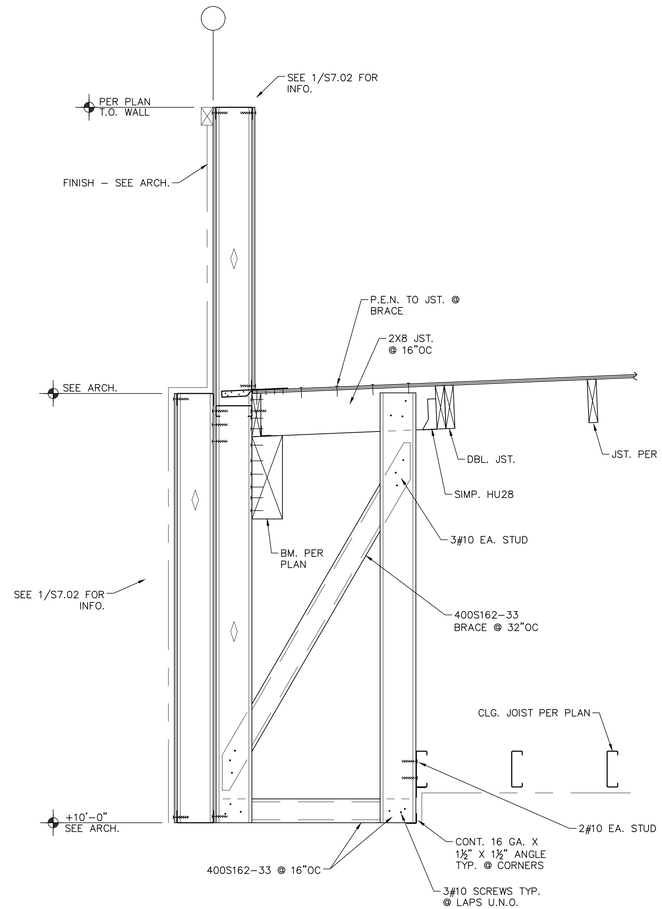

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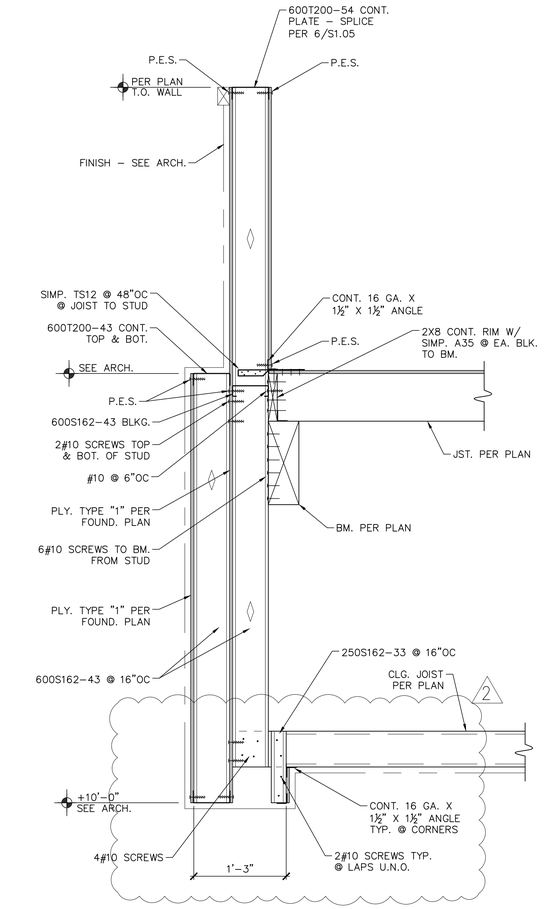

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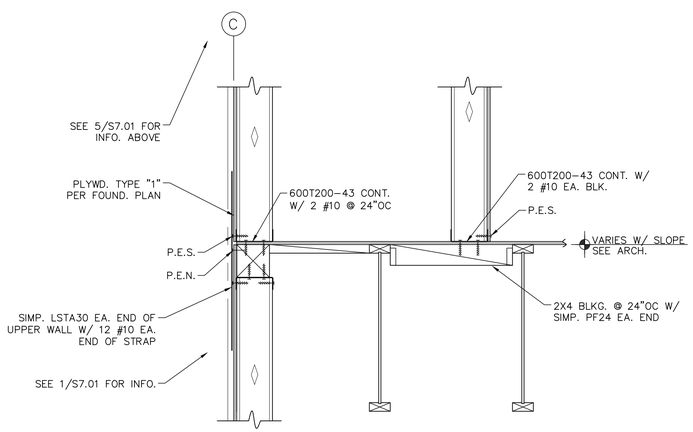

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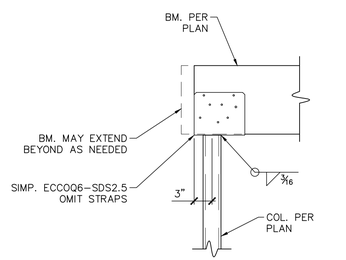

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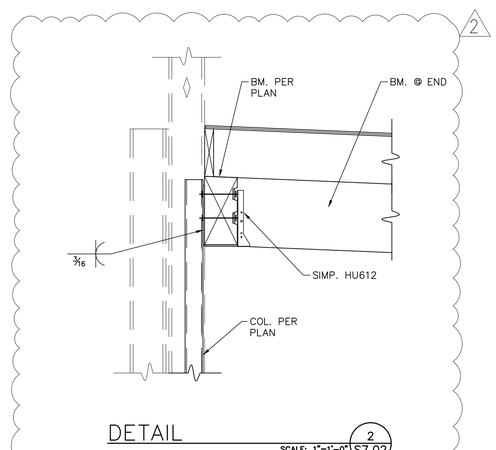

DETAIL 2 S7.02
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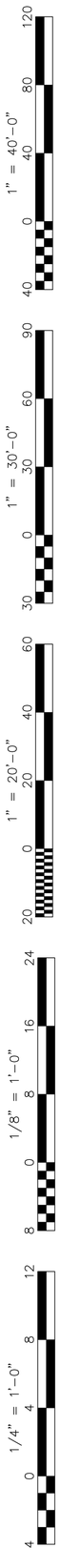

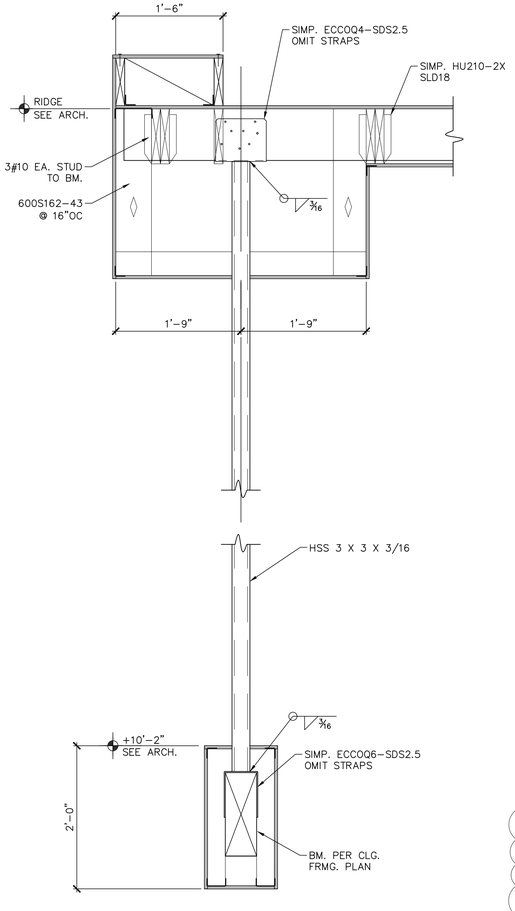

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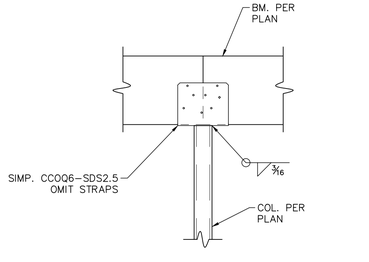

DETAIL
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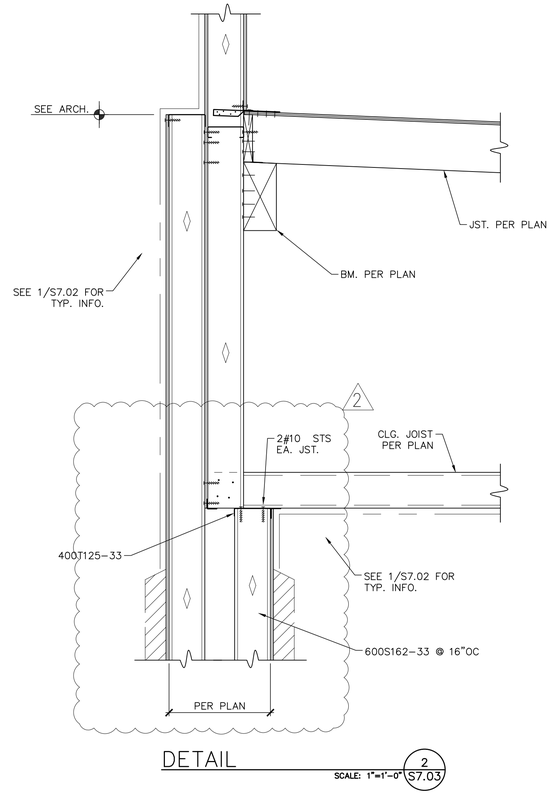

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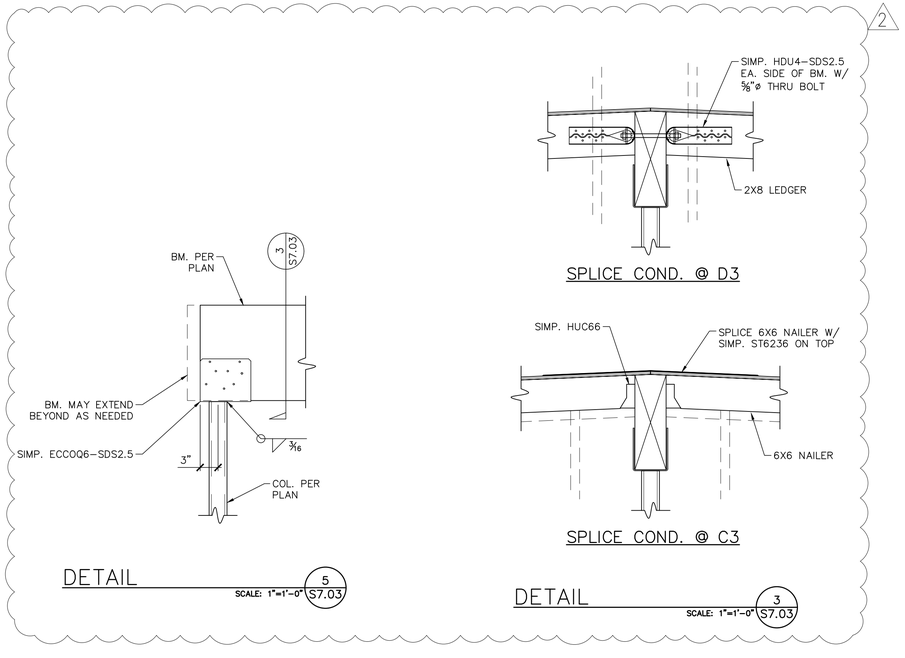

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DETAIL
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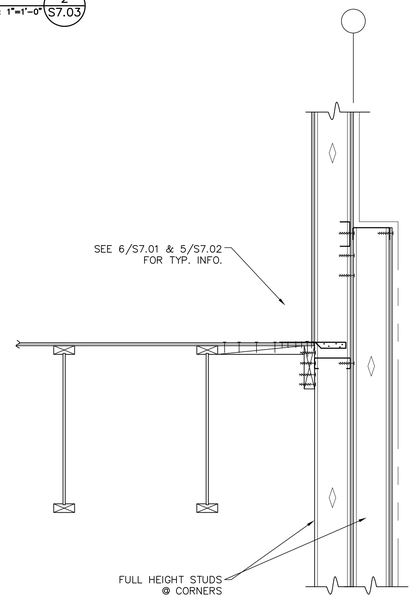

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BAKERSFIELD CITY SCHOOL DISTRICT

1300 BAKER ST.
BAKERSFIELD, CA 93305

Project Name & Address:

WELLNESS CENTER

DR. MARTIN LUTHER KING JR. ELEMENTARY

1100 CITADEL,
BAKERSFIELD, CA 93307

integrated designs
by SOMAM, Inc.

**ARCHITECTURE
ENGINEERING
INTERIOR DESIGN**

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STATE OF CALIFORNIA

Sheet Title:

FRAMING DETAILS

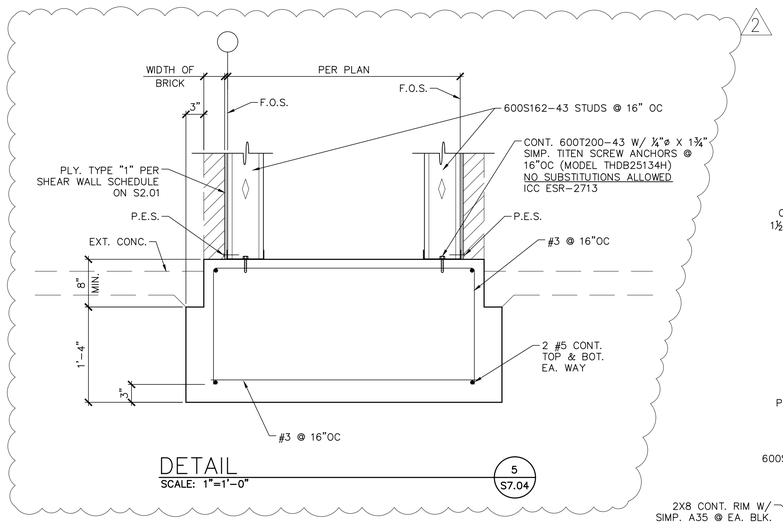
Job No.:

5527

Sheet No.:

S7.03

Release: **ADDENDUM 2** 2 **11/7/24**



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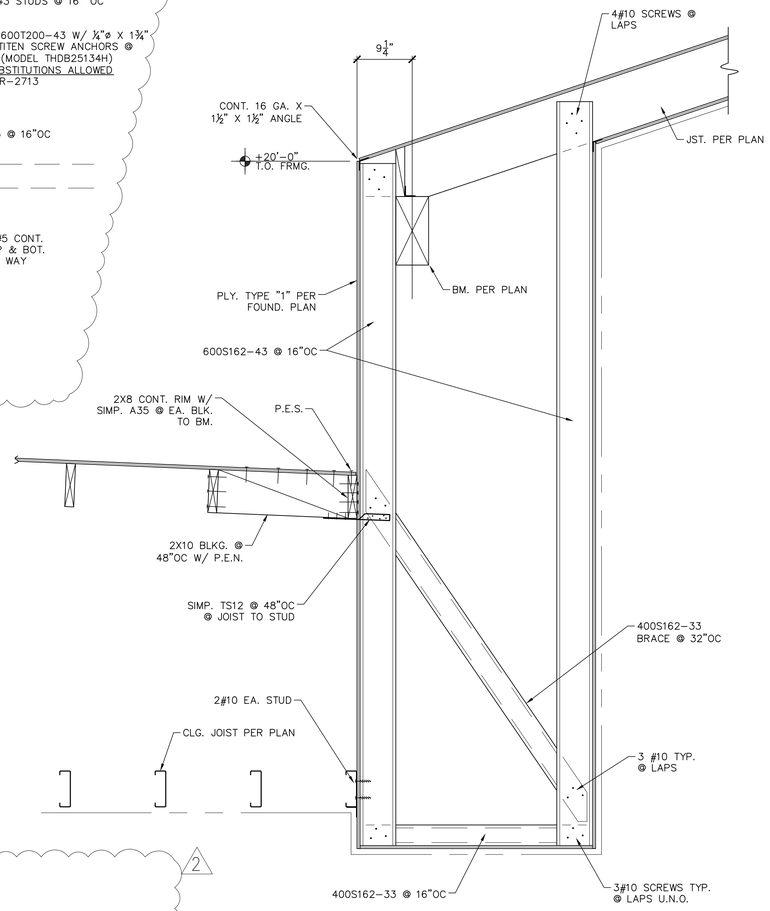

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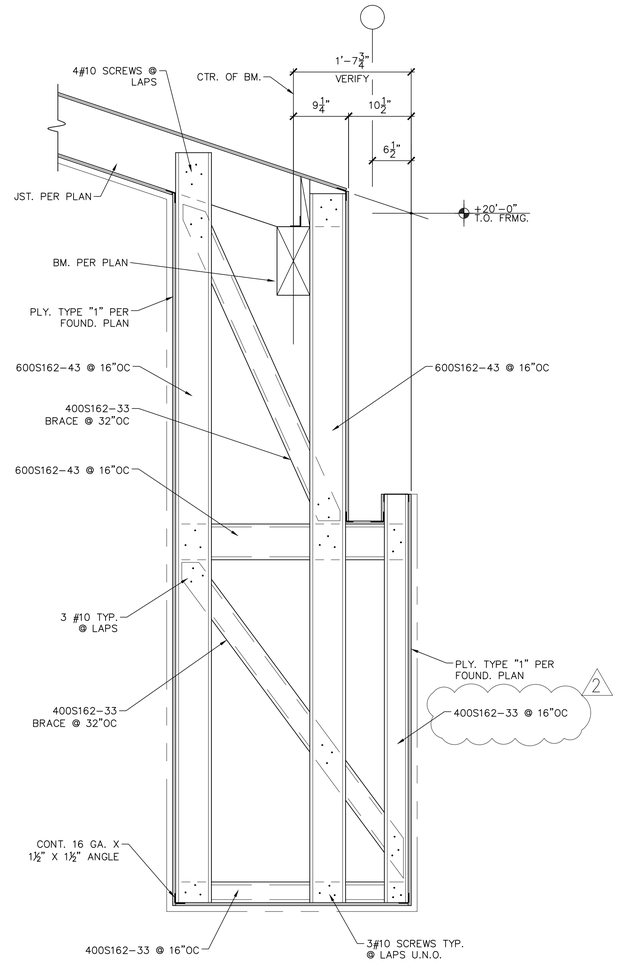

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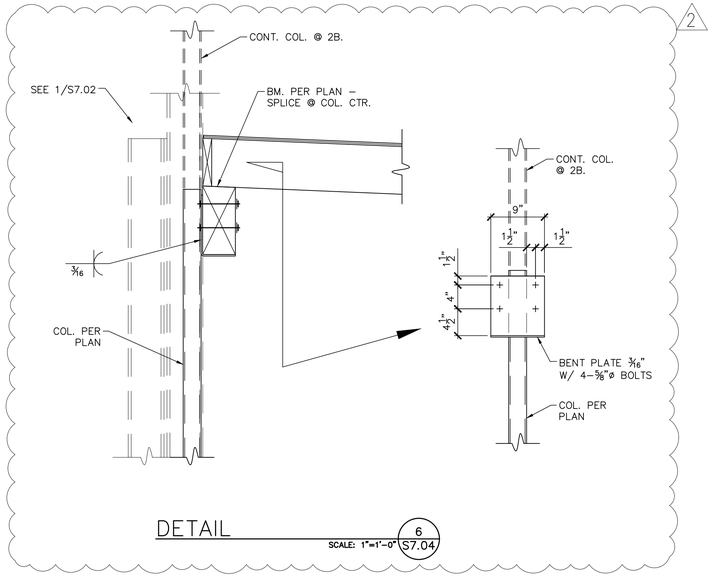

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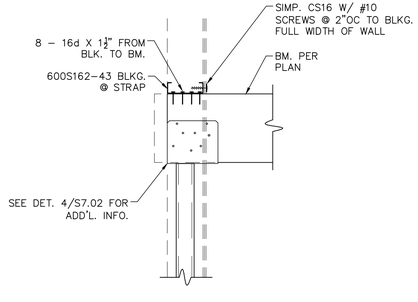

DETAIL 4 S7.04
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SCALE: 1"=1'-0"

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1" = 40'-0" (0, 40, 80, 120)
1" = 30'-0" (0, 30, 60, 90)
1" = 20'-0" (0, 20, 40, 60)
1/8" = 1'-0" (0, 8, 16, 24)
1/4" = 1'-0" (0, 4, 8, 12)

PLUMBING FIXTURE & EQUIPMENT SCHEDULE

MARK	FIXTURE	CONNECTIONS CW	HW	W	V	DESCRIPTION
WC 1	WATER CLOSET ADA	1"	-	4"	2"	KOHLER K-96057-SS "HIGHCLIFF ULTRA" WITH ANTIMICROBIAL FINISH, ELONGATED BOWL, FLOOR MOUNT, 1.1 TO 1.6 GPF. SLOAN "ROYAL" 111-1.28 FLUSH VALVE WITH HANDLE POINTED TOWARDS WIDE SIDE OF STALL. BEMIS 1655SSCT EXTRA HEAVY DUTY OPEN FRONT SEAT.
L 1	LAVATORY ADA	1/2"	1/2"	2"	1-1/2"	KOHLER K-2005 "KINGSTON", 21"x18" WALL HUNG VITREOUS CHINA WITH 4" CENTERS, MCGUIRE 155A GRID DRAIN AND TAILPIECE. CHICAGO 420-T41E2805ABCP 0.5 GPM FAUCET WITH HOT WATER LIMIT SET TO 105F, INTEGRAL INLET CHECK VALVES, SINGLE LEVER WITH VANDAL PROOF NON-AERATING OUTLET. PROVIDE J.R. SMITH 723 CONCEALED ARMS AND STEEL SUPPORT PLATE PER x/M0.11 FOR FIXTURE MOUNTING. REFER TO ARCHITECTURAL PLANS FOR ACCESSIBLE MOUNTING HEIGHT.
S 1	SINK ADA	1/2"	1/2"	2"	1-1/2"	JUST SLF-ADA-2119-A-GR SINGLE COMPARTMENT 18 GAUGE STAINLESS STEEL, 16"x16"x6-1/2" DEEP BOWL SIZE, THREE FAUCET HOLES AT 8" CENTERS, J-35-GS BASKET STRAINER, CHICAGO 786-GN8AE36ABCP 1.5 GPM, 8" SWIVEL GOOSENECK SPOUT WITH NON-AERATING LAMINAR OUTLET, 4" WRIST BLADE HANDLES.
S 2	SINK ADA	1/2"	1/2"	2"	1-1/2"	JUST SLF-ADA-2225-A-GR SINGLE COMPARTMENT 18 GAUGE STAINLESS STEEL, 16"x22"x6-1/2" DEEP BOWL SIZE, THREE FAUCET HOLES ON 4" CENTERS. PROVIDE J-35-GS-316 CUP STRAINER, CHICAGO 786-GN8AE36ABCP 1.5 GPM, 8" SWIVEL GOOSENECK SPOUT WITH NON-AERATING LAMINAR OUTLET, 4" WRIST BLADE HANDLES.
S 3	LAUNDRY SINK	1/2"	1/2"	4"	2"	KOHLER K-19017-3 "GLEN FALLS", 25"x22"x13" DEEP CAST IRON WITH ENAMEL FINISH. PROVIDE K-8799 REMOVABLE BASKET STRAINER WITH OPEN/CLOSE STOPPER. CHICAGO 527-317ABCP POLISHED CHROME DOUBLE BEND FAUCET WITH 6" SWING SPOUT, 4" WRIST BLADE HANDLES.
ST 1	SINK TRIM	1/2"	-	-	-	CHICAGO 712-ABCP GLASS FILLER FAUCET WITH DECK FLANGE, SET ADJUSTABLE FLOW CONTROL TO 1.0 GPM, COATED METAL PUSH-BACK HANDLE WITH LOCKING CLIP.
MS 1	MOP SINK	1/2"	1/2"	3"	2"	KOHLER K-6710 "WHITBY", 28"x28" CORNER FLOOR MOUNT, ACID RESISTANT ENAMELED CAST IRON MOP SINK. PROVIDE K-8940 RIM GUARD AND K-9146 STRAINER DRAIN. CHICAGO 897-CCP WALL MOUNT POLISHED CHROME FAUCET WITH VACUUM BREAKER, PAIL HOOK, WALL BRACE AND INTEGRAL SUPPLY STOPS. FLORESTONE MR-370 60" HOSE WITH WALL BRACKET.
DF 1	DRINKING FOUNTAIN ADA	1/2"	-	2"	1-1/2"	HAWS 1119.14 WITH 1920, BP32 AND 6469 HI-LO WALL MOUNT DRINKING FOUNTAIN WITH BOTTLE FILLER, DRIP TRAY, BACK PANELS, 14 GAUGE STAINLESS STEEL, PUSH BUTTON OPERATION, VANDAL RESISTANT BUBBLER HEADS AND WASTE STRAINERS, INTEGRAL TRAPS. PROVIDE 6700.4 AND 6700.4L MOUNTING PLATES, 6800 MOUNTING SUPPORT. REFER TO ARCHITECTURAL PLANS FOR ACCESSIBLE MOUNTING HEIGHT.
WMB 1	WASHING MACHINE BOX	3/4"	3/4"	2"	1-1/2"	GUY GRAY MODEL T200, 20 GAUGE STEEL RECESSED SUPPLY AND DRAIN BOX WITH WHITE POWDER COAT FINISH. INSTALL VALVES FOR BOTTOM SUPPLY.
HB 1	HOSE BIBB	3/4"	-	-	-	J.R. SMITH 5573 RECESSED WALL FAUCET IN CONCEALED STAINLESS STEEL BOX WITH LOCKING DOOR, VACUUM BREAKER, REMOVABLE HANDWHEEL, AND TEE KEY.
HB 2	HOSE BIBB	3/4"	-	-	-	WOODFORD MODEL Y24-BR ROUGH BRASS STANDPIPE FAUCET, 34HF ANTI-SIPHON VACUUM BREAKER, METAL HANDWHEEL, AND LOOSE TEE KEY.
WHA 1	WATER HAMMER ARRESTER	1/2"	-	-	-	SIOUX CHIEF HYDRA-RESTER 652-AS, SEAMLESS COPPER CHAMBER APPROVED FOR CONCEALED INSTALLATION, UP TO 11 FIXTURE UNITS. INSTALL IN UPWARD POSITION.
FD 1	FLOOR DRAIN	1/2"	-	2"	1-1/2"	J.R. SMITH 2005(B)-P050-BHP 5" SQUARE NICKEL BRONZE STRAINER HEAD, DUCO CAST IRON BODY WITH FLASHING COLLAR, TRAP PRIMER CONNECTION, HEEL PROOF GRATE.
TP 1	TRAP PRIMER	1/2"	-	-	-	PRECISION PLUMBING PRODUCTS P1-500 VALVE. PROVIDE DU-U DISTRIBUTION UNIT WHEN MORE THAN ONE DRAIN IS SERVED, UP TO 4 DRAINS PER DISTRIBUTION UNIT, PLUG UNUSED OUTLETS AS REQUIRED. PROVIDE WALL ACCESS DOOR. REFER TO PLANS FOR NUMBER OF DRAINS SERVED.
RD 1	COMBINATION ROOF & OVERFLOW DRAIN	-	-	-	-	J.R. SMITH SERIES 148 COMBINATION ROOF AND OVERFLOW DRAIN, CAST IRON, FLASHING CLAMPS, GRAVEL STOPS, AND ENAMEL PAINT FOR OUTDOOR PROTECTION. PROVIDE 148-10 OVERFLOW DOME. SEE PLANS FOR OUTLET SIZE.
WH 1	WATER HEATER	3/4"	3/4"	-	-	STATE PCE-50-20LS, 48 GALLON RATED STORAGE CAPACITY, 61 GPH RECOVERY AT 80°F RISE, 3/4" ASME RATED FACTORY T&P RELIEF VALVE. 26-1/2" DIA x 36 HIGH. OPERATING WEIGHT: 600 LBS ELEC ELEMENTS: 480V, 3 PH, 12 KW
TET 1	THERMAL EXPANSION TANK	3/4"	-	-	-	AMTROL ST-12C THERM-X-TROL, 6.4 GALLON WITH 0.5 ACCEPTANCE FACTOR, ASME RATED WITH INLINE CONNECTIONS, 150 PSIG WORKING PRESSURE, NSF 61 COMPLIANT BLADDER FOR POTABLE WATER USE. OPERATING WEIGHT: 70 LBS
CP 1	CIRCULATING PUMP	-	3/4"	-	-	GRUNDFOS UPS26-99SFC 3-SPEED STAINLESS STEEL INLINE PUMP WITH INTEGRAL CHECK VALVE, 3/4" FLANGE CONNECTIONS, 5 GPM AT 26 FEET HEAD, NSF 61 COMPLIANT. ELEC: 115V, 1 PH, 197 WATTS

PACKAGE AIR COND UNIT SCHED

MARK	AC 1	AC 2	AC 3
VOLTS/PHASE	460/3	460/3	460/3
MCA / MOCP	23 / 25	23 / 25	23 / 25
FLA / LRA	21 / 53	21 / 53	21 / 53
FUSE SIZE	25	25	25
BLOWER:			
CFM	1600	1600	1600
DUCT SP (IN WC)	0.8	0.8	0.8
MINIMUM OSA (CFM)	150	150	150
HP / BHP	1 / 0.79	1 / 0.79	1 / 0.79
DRIVE	DIRECT	DIRECT	DIRECT
COOLING:	2 STAGES	2 STAGES	2 STAGES
TOTAL (MBH)	44.5	44.5	44.5
SENSIBLE (MBH)	35	35	35
EADB / EAWB (°F)	80 / 67	80 / 67	80 / 67
AMBIENT DB (°F)	105	105	105
REFRIGERANT	R410A	R410A	R410A
CONDENSATE CONN	3/4"	3/4"	3/4"
SEER / EER AT AHRI	16.2 / 12.2	16.2 / 12.2	16.2 / 12.2
HEATING:			
CAPACITY (MBH)	45.6	45.6	45.6
EADB (°F)	70	70	70
AMBIENT DB (°F)	47	47	47
STRIP HEATER (KW)	5.5	5.5	5.5
HSPF / COP	8.3 / 3.7	8.3 / 3.7	8.3 / 3.7
FILTERS:			
RA: QUANTITY / SIZE	4 / 16x16x2	4 / 16x16x2	4 / 16x16x2
TYPE	MERV 13	MERV 13	MERV 13
PD, CLEAN (IN WC)	0.3	0.3	0.3
OSA: QUANTITY / SIZE	1 / 20x24x1	1 / 20x24x1	1 / 20x24x1
TYPE	WASHABLE	WASHABLE	WASHABLE
MANUFACTURER	CARRIER	CARRIER	CARRIER
TYPE	HEAT PUMP	HEAT PUMP	HEAT PUMP
MODEL NUMBER	50GCQM05 - OFCI	50GCQM05 - OFCI	50GCQM05 - OFCI
CONTROL	T'STAT (6)	T'STAT (6)	T'STAT (6)
SERVICE	SEE PLANS	SEE PLANS	SEE PLANS
OP WEIGHT (LBS)	800	800	800
ACCESSORIES	(1),(2),(3),(4),(5),(7)	(1),(2),(3),(4),(5),(7)	(1),(2),(3),(4),(5),(7)

NOTES:
(1) INSULATED ROOF CURB TO MATCH ROOF SLOPE, SEE DETAIL 3/M0.11 - OFCI
(2) HEAVY DUTY CONDENSER COIL GUARD - FACTORY INSTALLED
(3) HINGED ACCESS PANELS - FACTORY INSTALLED
(4) CA COMPLIANT ECONOMIZER WITH FDD, FULLY MODULATING DAMPERS, AND BAROMETRIC RELIEF - OFCI
(5) DISCONNECT BY DIV 26 ELECTRICAL
(6) CONTROLLER INTERFACE FOR COMMUNICATION TO PELICAN WIRELESS THERMOSTAT
(7) UL 867 AND 2998 LISTED NPBI TYPE ION GENERATOR POWERED BY UNIT - FACTORY INSTALLED

INDOOR UNIT SCHEDULE

MARK	IDU 1
CFM (LOW / MED / HIGH)	280 / 340 / 400
ESP (IN WC)	
MINIMUM OSA (CFM)	0
HP / BHP / WATTS	
VOLTAGE/PHASE	(1)
MCA / MOCP	0.2 /
RPM	
DRIVE	DIRECT
MOUNTING	CEILING (4)
COOLING:	
TOTAL (MBH)	12
SENSIBLE (MBH)	
EADB / EAWB (°F)	80 / 67
AMBIENT DB (°F)	95
REFRIGERANT	R410A
LIQUID LINE SIZE	1/4"
SUCTION LINE SIZE	1/2"
CONDENSATE CONN	1"
SEER / EER AT AHRI	21.5 / 12.7
HEATING:	
CAPACITY (MBH)	12
EADB (°F)	70
AMBIENT DB (°F)	47
HSPF / COP	10.6 / 3.22
FILTERS:	
QUANTITY / SIZE	
TYPE	WASHABLE
PD, CLEAN (IN WC)	
MANUFACTURER	CARRIER
TYPE	HEAT PUMP
MODEL NUMBER	40MBCQ12 - OFCI
CONTROL	T'STAT (3)
SERVICE	SERVER ROOM
OP WEIGHT (LBS)	45
ACCESSORIES	(2)

NOTES:
(1) INDOOR UNIT RECEIVE POWER FROM OUTDOOR UNIT
(2) BUILT-IN CONDENSATE PUMP
(3) CONTROLLER INTERFACE FOR COMMUNICATION TO PELICAN WIRELESS THERMOSTAT - OFCI
(4) FOR MOUNTING, SEE DETAIL 5/M0.11

OUTDOOR UNIT SCHED

MARK	ODU 1
MCA / MOCP	15 / 15
FUSE SIZE	15
VOLTAGE/PHASE	208-230/1
MOUNTING	ROOF (5)
COOLING:	
TOTAL (MBH)	12
AMBIENT DB (°F)	95
SEER / EER AT AHRI	21.5 / 12.7
HEATING:	
CAPACITY (MBH)	12
AMBIENT DB (°F)	47
HSPF / COP	10.6 / 3.22
REFRIGERANT	R410A
LIQUID LINE SIZE	1/4"
SUCTION LINE SIZE	1/2"
MANUFACTURER	CARRIER
TYPE	HEAT PUMP
MODEL NUMBER	38MARBQ12 - OFCI
SERVICE	IDU-1
OP WEIGHT (LBS)	75
ACCESSORIES	(1),(2),(3),(4)

NOTES:
(1) INDOOR UNIT RECEIVE POWER FROM OUTDOOR UNIT
(2) CRANKCASE HEATER - FACTORY INSTALLED
(3) LOW AMBIENT COOLING OPERATION TO 40°F
(4) DISCONNECT BY DIV 26 ELECTRICAL
(5) FOR MOUNTING, SEE DETAIL 6/M0.11

EXHAUST FAN SCHED

MARK	EF 1	EF 2	EF 3	EF 4
CFM	55	95	95	95
ESP (IN WC)	0.25	0.25	0.25	0.25
HP / BHP / WATTS	- / - / 15.6	- / - / 19.4	- / - / 19.4	- / - / 19.4
VOLTAGE/PHASE	115/1	115/1	115/1	115/1
RPM	790	950	950	950
TIP SPEED				
SONES	0.3	0.5	0.5	0.5
DRIVE	DIRECT	DIRECT	DIRECT	DIRECT
MOUNTING	CEILING (6)	CEILING (6)	CEILING (6)	CEILING (6)
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
TYPE				
MODEL NUMBER	SP-A90 - OFCI	SP-A110 - OFCI	SP-A110 - OFCI	SP-A110 - OFCI
CONTROL	(1)	(1)	(1)	(1)
SERVICE	JANITOR	TOILET	TOILET	TOILET
OP WEIGHT (LBS)	12	17	17	17
ACCESSORIES	(2),(3),(4),(5)	(2),(3),(4),(5)	(2),(3),(4),(5)	(2),(3),(4),(5)

NOTES:
(1) INTERLOCK WITH LIGHTS
(2) SOLID STATE FAN SPEED CONTROLLER - OFCI
(3) BACKDRAFT DAMPER - FACTORY INSTALLED
(4) ROOF CAP WITH BIRDSCREEN - OFCI
(5) DISCONNECT BY DIV 26 ELECTRICAL
(6) FOR MOUNTING, SEE DETAIL 4/M0.11

GRILLE SCHEDULE

MARK	LOCATION	DESCRIPTION
A	CEILING SUPPLY	TITUS TDC STEEL FULL LOUVER FACE WITH SQUARE OR RECTANGULAR NECK, TYPE 3 BORDER FOR LAY-IN CEILING, STANDARD #26 WHITE FINISH.
B	CEILING SUPPLY	TITUS TDC STEEL FULL LOUVER FACE WITH SQUARE OR RECTANGULAR NECK, TYPE 1 BORDER FOR SURFACE MOUNT, STANDARD #26 WHITE FINISH.
C	CEILING RETURN	TITUS 50F ALUMINUM EGGCRATE WITH 1/2x1/2x1/2 GRID, TYPE 3 BORDER FOR LAY-IN CEILING, STANDARD #26 WHITE FINISH.

NOTE: ALL INTERIOR COMPONENTS, EVERYTHING BEHIND THE FACE PLATE, SHALL BE PAINTED FLAT BLACK.

GENERAL PLUMBING AND HVAC NOTES

A. THE PLANS AND SPECIFICATIONS DESCRIBE THE PLUMBING WORK AND HVAC WORK OF THIS PROJECT. ANY ITEMS MENTIONED IN ONE PART SHALL BE AS BINDING AS THOUGH MENTIONED IN BOTH. PROVIDE THE NECESSARY LABOR, MATERIALS, EQUIPMENT, TOOLS AND SERVICES FOR A COMPLETE FUNCTIONING SYSTEM.

B. ALL LOCATIONS OF EXISTING UTILITIES, DUCTWORK, AND EQUIPMENT SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL CONDITIONS PRIOR TO PROCEEDING WITH ANY WORK, INCLUDING EXACT LOCATION, SIZE, SERVICE, AND ROUTING OF EXISTING UTILITIES AND DUCTWORK. CONTRACTOR SHALL IMMEDIATELY NOTIFY ARCHITECT/ENGINEER OF ANY EXISTING CONDITIONS WHICH MAY CONFLICT WITH INFORMATION PROVIDED IN CONSTRUCTION DOCUMENTS.

C. PLUMBING AND HVAC LAYOUTS INDICATED ON PLANS ARE DIAGRAMMATIC ONLY. SOME WORK MAY BE SHOWN OFFSET FOR CLARITY. EXACT LOCATION OF EQUIPMENT, DUCTWORK, AND PIPES SHALL BE COORDINATED WITH OTHER TRADES.

D. PROVIDE CLEANOUTS PER CPC SECTIONS 707, 719 AND 1101.13.

E. PROVIDE PLUMBING VENT TERMINATION PER CPC SECTION 906. PLUMBING VENTS SHALL TERMINATE NOT LESS THAN TEN FEET FROM, OR NOT LESS THAN THREE FEET ABOVE, AIR INTAKE OR VENT SHAFT. COORDINATE EXACT LOCATION WITH OTHER TRADES.

F. PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE PER CBC SECTIONS 714 AND 717. FIRE STOP MATERIAL SHALL BE A TESTED ASSEMBLY APPROVED BY THE FIRE MARSHAL. SEE ARCHITECTURAL PLANS FOR LOCATION OF FIRE RATED ASSEMBLIES.

G. THE SEISMIC RESTRAINT OF MECHANICAL EQUIPMENT, DUCTWORK, AND PIPES SHALL CONFORM TO CBC CHAPTER 16A.

H. PROVIDE FRESH AIR INTAKE SEPARATION FROM EXHAUST TERMINATION AND PLUMBING VENT TERMINATION PER CMC SECTIONS 502, 510.9 AND 519.5, AND CPC SECTION 906. COORDINATE WITH OTHER TRADES.

I. DUCTWORK SIZES INDICATED ARE INSIDE DIMENSIONS. WHERE ACOUSTIC LINING IS SHOWN, MAINTAIN THE INSIDE CLEAR DIMENSIONS BY INCREASING THE SHEET METAL SIZE TO ACCOMMODATE LINING THICKNESS.

J. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.

MECHANICAL LEGEND

SYMBOL	DESCRIPTION	ABBR
AC 1	EQUIPMENT DESIGNATION / UNIT ABBREVIATION / NUMBER	AC-1
A 10x10-3 120	GRILLE DESIGNATION / NECK SIZE & BLOW / CFM	
	SUPPLY AIR	SA
	RETURN AIR	RA
	EXHAUST AIR	EXH
	ACOUSTIC LINED DUCT	(L)
	DUCT RISER	
	DUCT DROP	
	SQUARE TO ROUND FITTING	
	FIRE/SMOKE DAMPER	FSD
SD	DUCT SMOKE DETECTOR	SD
	VOLUME CONTROL DAMPER	VCD
T	THERMOSTAT AT 48" MAXIMUM TO TOP OF BOX	T'STAT
S	SWITCH	
— RL —	REFRIGERANT LIQUID	RL
— RS —	REFRIGERANT SUCTION	RS
	ABOVE FINISH FLOOR	AFF
	CAP	
	EXISTING	(E)
	(E) TO BE REMOVED	DEMO
	NEW	(N)
	OUTSIDE AIR	OSA
X	POINT OF CONNECTION	POC
	TYPICAL	TYP

SYMBOL	ABBR	DESCRIPTION
	S. W. D.	SOIL, WASTE OR DRAIN
	V	VENT
	CW	DOMESTIC COLD WATER
	HW	DOMESTIC HOT WATER
	HWR	DOMESTIC HOT WATER RETURN
— GAS —		GAS MAIN BY GAS UTILITY COMPANY
— G —	G	LOW PRESSURE NATURAL GAS
— RWL —	RWL	RAIN WATER LEADER
— OL —	OL	OVERFLOW LEADER
— CD —	CD	CONDENSATE DRAIN
— D —	D	DRAIN
— IW —	IW	INDIRECT WASTE
	FCO	FLOOR CLEANOUT
	COTG	CLEANOUT TO GRADE
	WCO	WALL CLEANOUT
	VTR	VENT THROUGH ROOF
	GV OR SOV	GATE OR SHUT - OFF VALVE
	BV	BALL VALVE
	CV	CHECK VALVE
	STR	STRAINER
		UNION
		ELBOW UP
		ELBOW DOWN
	RED	REDUCER
	HB	HOSE BIBB
	PP	PETES PLUG
	PRV	PRESSURE RELIEF VALVE

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REGISTERED PROFESSIONAL ENGINEER · ISA L. ... · 33712 · EXP. 6-30-26 · MECHANICAL · STATE OF CALIFORNIA

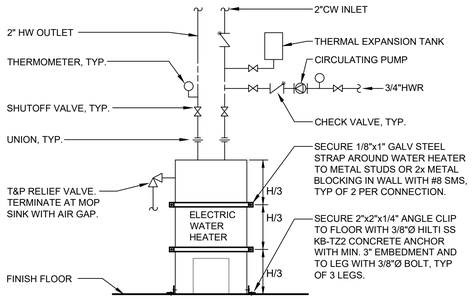
Sheet Title:
GENERAL NOTES - LEGEND

Job No.: **5527**

Sheet No.: **M0.01**

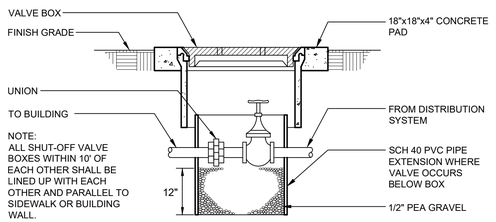
Release: ADDENDUM 2 · 11/22/24 · 12/20/24

G:\2022frs\22-5527 MLK WELLNESS CENTER\Sheets SEAN PARKER



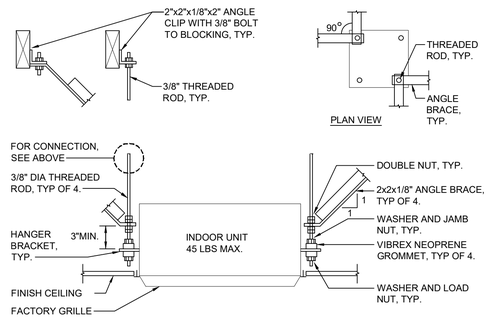
13 / M0.11 ELECTRIC WATER HEATER

SCALE: N.T.S.



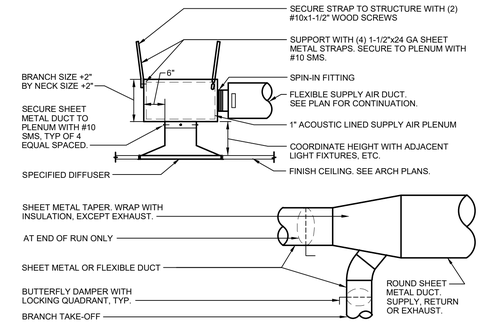
9 / M0.11 SHUT OFF VALVE IN BOX

SCALE: N.T.S.



5 / M0.11 INDOOR UNIT - CEILING

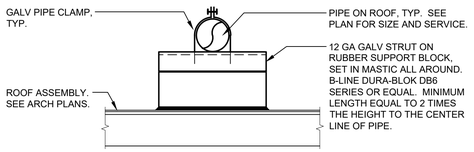
SCALE: N.T.S.



1 / M0.11 TYPICAL SUPPLY AIR DEVICE - BRANCH DUCT

SCALE: N.T.S.

NOTES:
1. FOR CONDENSATE DRAIN PIPING, SIZES 1" OR SMALLER:
   A. COPPER PIPING - 6'-0" SPACING MAXIMUM
   B. GALV STEEL PIPING - 7'-0" SPACING MAXIMUM



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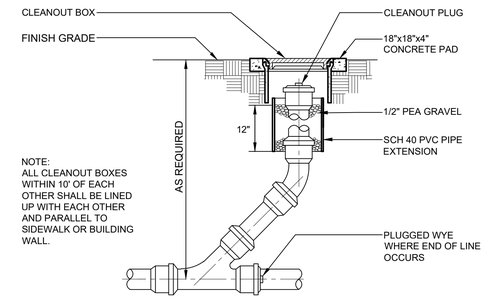
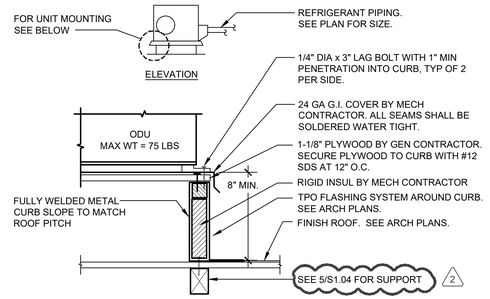
14 / M0.11 PIPE SUPPORT - ROOF

SCALE: N.T.S.



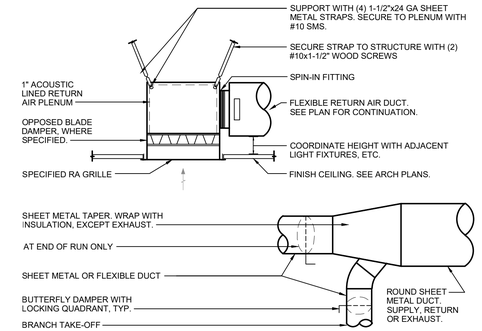
10 / M0.11 CLEANOUT TO GRADE (COTG)

SCALE: N.T.S.



6 / M0.11 OUTDOOR UNIT

SCALE: N.T.S.



2 / M0.11 TYPICAL RETURN/EXHAUST AIR DEVICE - BRANCH DUCT

SCALE: N.T.S.

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.g. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

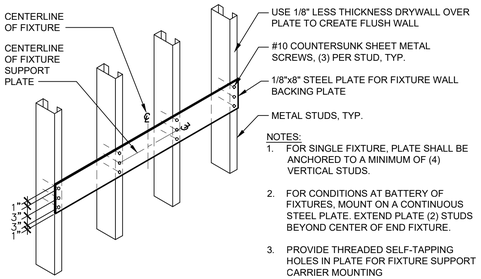
PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-16 SECTION 13.3 AS DEFINED IN ASCE 7-16 SECTIONS 13.6.5, 13.6.6, 13.6.7, 13.6.8; AND 2019 CBC, SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (e.g., OSHPD OPM FOR 2013 CBC OR LATER), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

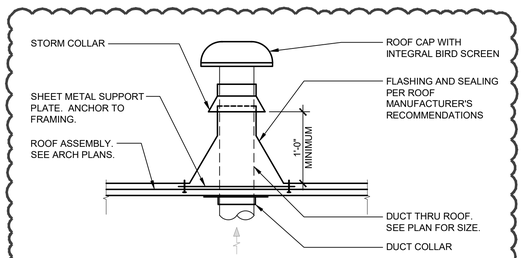
MP☐ MD☐ PP☐ E☐ OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP☒ MD☒ PP☒ E☐ OPTION 2: SHALL COMPLY WITH THE APPLICABLE HCAI PRE-APPROVAL (OPM #) #OPM-0043-13 MASON WEST SEISMIC RESTRAINT GUIDELINES FOR SUSPENDED DISTRIBUTION SYSTEMS.



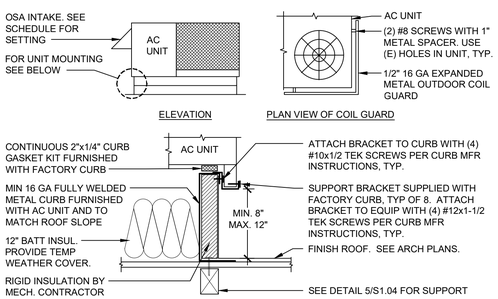
11 / M0.11 FIXTURE SUPPORT BACKING - METAL STUDS

SCALE: N.T.S.



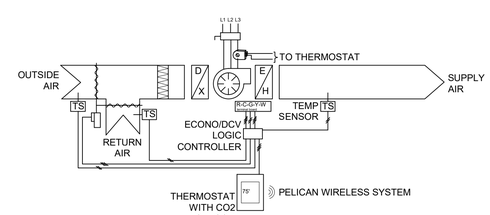
7 / M0.11 DUCT THRU ROOF - EXHAUST

SCALE: N.T.S.



3 / M0.11 AC UNIT MOUNTING

SCALE: N.T.S.

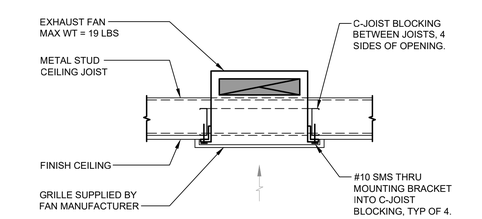


NOTES:
1. LINE VOLTAGE AND CONDUIT BY DIVISION 26
2. UNIT EQUIP WITH 0-10 VDC ECONOMIZER ACTUATOR AND DAMPERS.
3. ECONOMIZER LOGIC CONTROLLER KIT TO INCLUDE CONTROLLER AND TEMPERATURE SENSORS. PELICAN WIRELESS PEARL.
4. THERMOSTAT WITH INTEGRATED CO2 SENSOR. CONTRACTOR TO INSTALL OWNER FURNISHED PELICAN WIRELESS THERMOSTAT.
5. CURRENT SENSOR. VERIS H6ECM

2

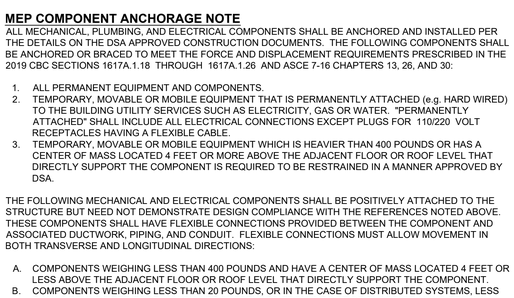
8 / M0.11 CONTROL SCHEMATIC - HEAT PUMP

SCALE: N.T.S.



4 / M0.11 EXHAUST FAN - CEILING

SCALE: N.T.S.



12 / M0.11 CONDENSATE DRAIN CONNECTION - DRAW THRU

SCALE: N.T.S.

1" = 40'-0" 120 80 40 0
1" = 30'-0" 90 60 30 0
1" = 20'-0" 60 40 20 0
1/8" = 1'-0" 24 16 8 0
1/4" = 1'-0" 12 8 4 0

Owner:

BAKERSFIELD CITY SCHOOL DISTRICT
1300 BAKER STREET
BAKERSFIELD, CA 93305

Project Name:
WELLNESS CENTER

Project Address:
DR. MARTIN LUTHER KING JR. ELEMENTARY SCHOOL
1100 CITADEL STREET
BAKERSFIELD, CA 93307

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by SOMAM, Inc.

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Stamp:

REGISTERED PROFESSIONAL ENGINEER — SEAN PARKER — No. 33312 — Exp. 6-30-26 — MECHANICAL — STATE OF CALIFORNIA

Sheet Title:
DETAILS

Job No.: **5527**

Sheet No.: **M0.11**

Release: ADDENDUM 2 (2) 11/22/24

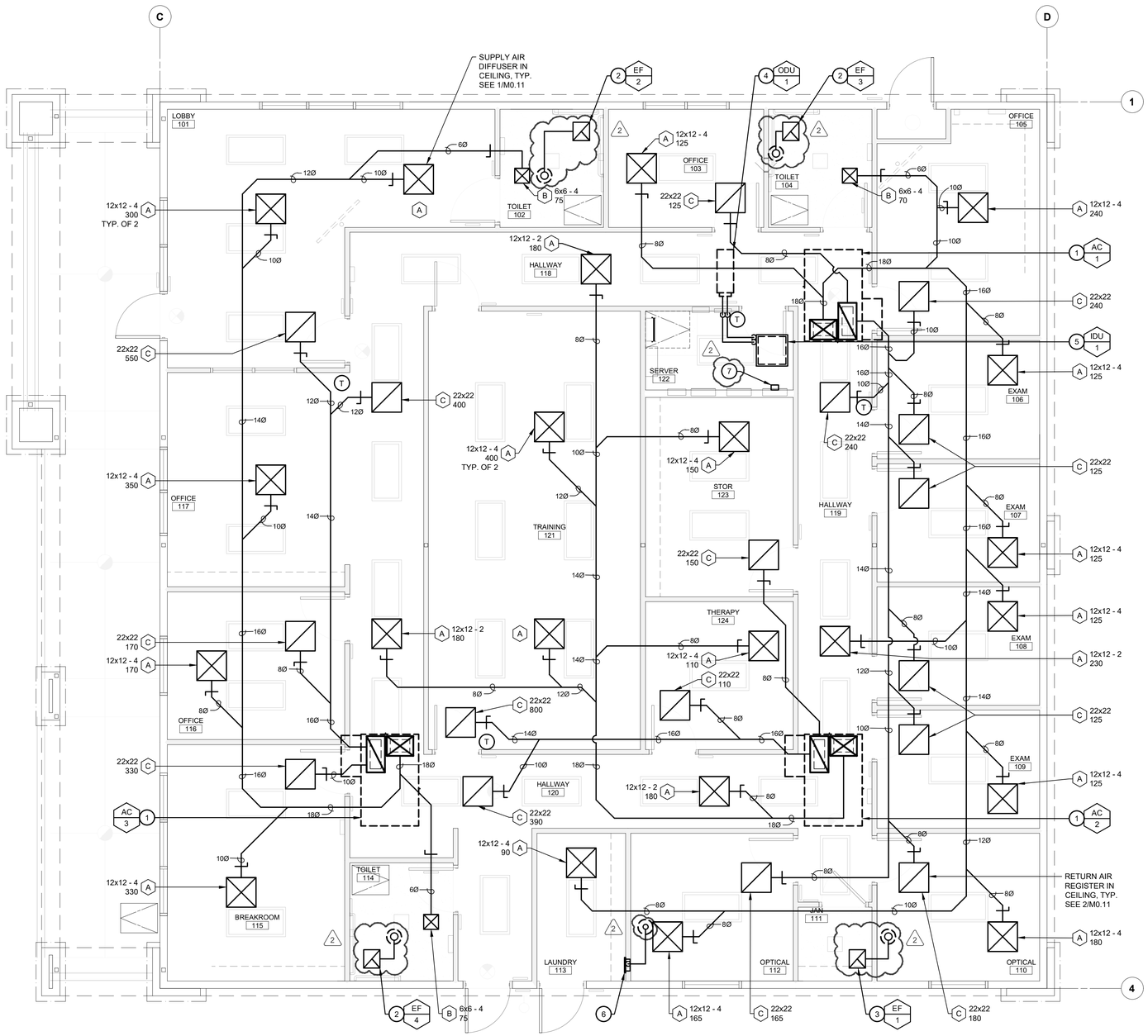
1" = 40'-0" 120 80 40 0 40

1" = 30'-0" 90 60 30 0 30

1" = 20'-0" 60 40 20 0 20

1/8" = 1'-0" 24 16 8 0 8

1/4" = 1'-0" 12 8 4 0 4



HVAC PLAN

WELLNESS CENTER

SCALE: 1/4" = 1'

KEY NOTES

1. AC UNIT ON ROOF WITH 18x14(L) SUPPLY AIR PLENUM AND 26x12(L) RETURN AIR PLENUM DROP THRU ROOF. SEE DETAILS 3 & 8/M0.11. TRANSITION AND OFFSET AS NEEDED TO AVOID STRUCTURAL MEMBERS. SEE STRUCTURAL ROOF FRAMING PLAN. UNIT IS OWNER FURNISHED, CONTRACTOR INSTALL (OFCI).
2. CEILING EXHAUST FAN WITH 6" ROUND EXHAUST DUCT THRU ROOF. PROVIDE FLASHING AND CAP ASSEMBLY. SEE 4/M0.11 AND 7/M0.11. FAN IS OFCI
3. CEILING EXHAUST FAN WITH 5" ROUND EXHAUST DUCT THRU ROOF. PROVIDE FLASHING AND CAP ASSEMBLY. SEE 4/M0.11 AND 7/M0.11. FAN IS OFCI
4. OUTDOOR UNIT ON ROOF. EXTEND REFRIGERANT PIPING TO INDOOR UNIT. SEE 6/M0.11. UNIT IS OFCI
5. INDOOR UNIT RECESSED IN CEILING SUSPENDED FROM STRUCTURE. SEE 5/M0.11. UNIT IS OFCI
6. DRYER VENT BOX RECESS IN WALL WITH 4" ALUMINUM DRYER VENT DUCT UP THRU ROOF. PROVIDE FLASHING AND CAP ASSEMBLY. IN-O-VATE TECH DB-350 AND DJK486, OR EQUAL. SIM 7/M0.11
7. HVAC WIRELESS GATEWAY. COORDINATE EXACT LOCATION WITH OWNER. PROVIDE 120/1 WALL OUTLET AND ETHERNET CONNECTION.

LEGEND

SYMBOL	DESCRIPTION	ABBR
AC 1	EQUIPMENT DESIGNATION / UNIT ABBREVIATION / NUMBER	AC-1
A 10x10-3 120	GRILLE DESIGNATION / NECK SIZE & BLOW / CFM	
	SUPPLY AIR	SA
	RETURN AIR	RA
	EXHAUST AIR	EXH
	ACOUSTIC LINED DUCT	(L)
	DUCT RISER	
	DUCT DROP	
	SQUARE TO ROUND FITTING	
	FIRE/SMOKE DAMPER	FSD
SD	DUCT SMOKE DETECTOR	SD
	VOLUME CONTROL DAMPER	VCD
S	SWITCH	
T	THERMOSTAT AT 48" MAXIMUM TO TOP OF BOX	T'STAT
RL	REFRIGERANT LIQUID	RL
RS	REFRIGERANT SUCTION	RS
	ABOVE FINISH FLOOR	AFF
	EXISTING	(E)
	(E) TO BE REMOVED	DEMO
	NEW	(N)
	OUTSIDE AIR	OSA
X	POINT OF CONNECTION	POC
	TYPICAL	TYP

Owner:

BAKERSFIELD CITY SCHOOL DISTRICT
1300 BAKER STREET
BAKERSFIELD, CA 93305

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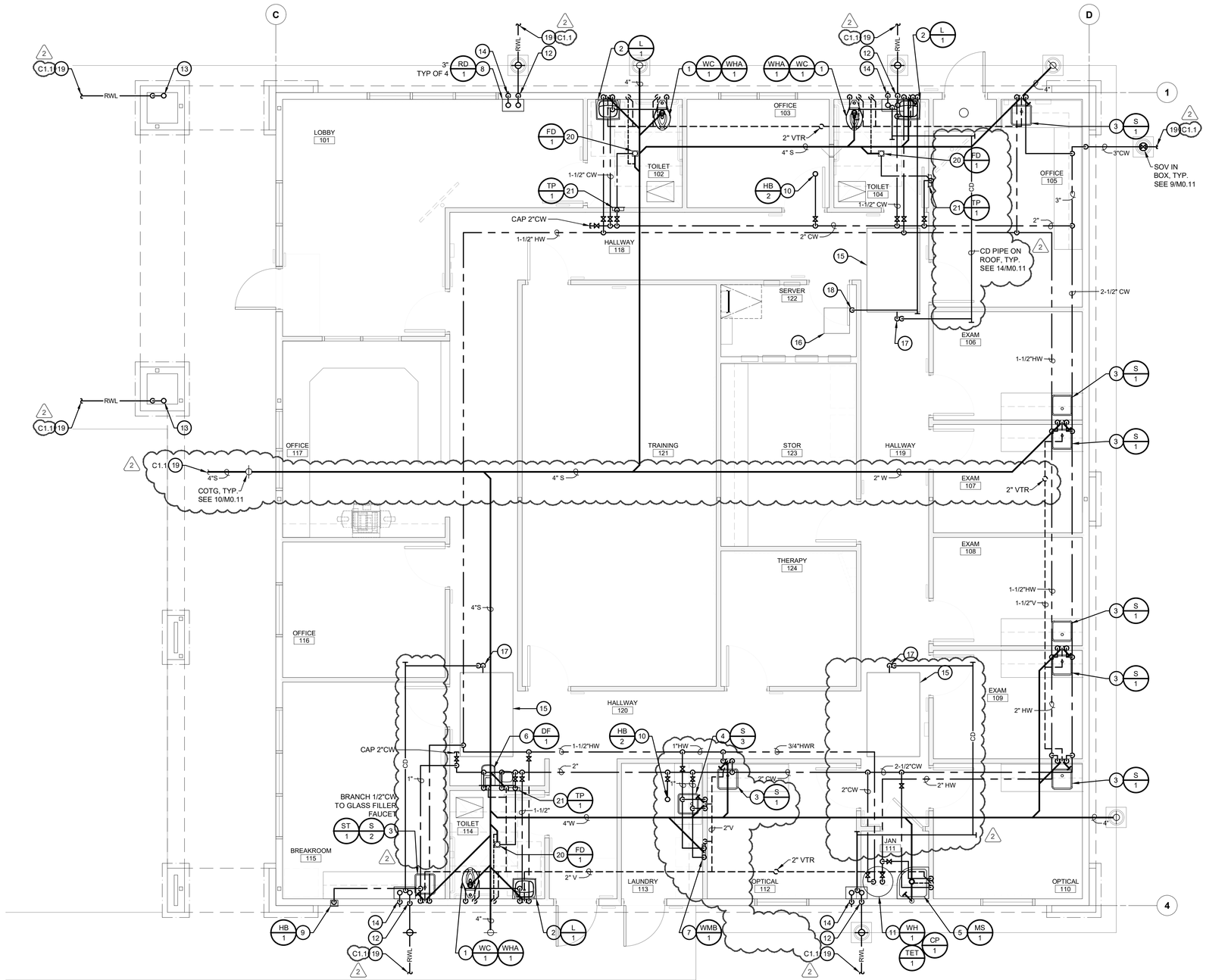
REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — MECHANICAL — 33712 — EXP. 6-30-26

Sheet Title:
HVAC PLAN

Job No.:
5527

Sheet No.:
M2.11

Release: ADDENDUM 2 .11/22/24



PLUMBING PLAN

WELLNESS CENTER

SCALE: 1/4" = 1'

KEY NOTES

1. 1-1/2"CW, 4"S, 2"V TO WATER CLOSET, TYP.
2. 3/4"CW & HW, 2"W, 1-1/2"V TO LAV, TYP. PROVIDE FIXTURE SUPPORT PLATE PER 11/M0.11
3. 3/4"CW & HW, 2"W WITH WCO, 1-1/2"V TO SINK, TYP.
4. 3/4"CW & HW, 4"W WITH WCO, 2"V TO LAUNDRY SINK, TYP.
5. 3/4"CW & HW, 3"W WITH WCO, 2"V TO MOP SINK, TYP.
6. 3/4"CW, 2"W, 1-1/2"V TO DRINKING FOUNTAIN, FOR EACH CONNECTION. EXTEND 3/4"CW TO BOTTLE FILLER.
7. 3/4"CW & HW, 2"W, 1-1/2"V TO WASHING MACHINE BOX WITH SOV FOR CONNECTION TO RESIDENTIAL TYPE WASHING MACHINE.
8. COMBO ROOF DRAIN AND OVERFLOW DRAIN. SEE ARCH ROOF PLAN FOR EXACT LOCATION.
9. 3/4"CW TO HOSE BIBB AT 12" ABOVE FINISH GRADE, TYP.
10. 3/4"CW UP TO HOSE BIBB ON ROOF WITH SOV, TYP. SEE ARCH PLANS FOR EXACT LOCATION. DO NOT PLACE IN WALKWAY.
11. ELECTRIC WATER HEATER WITH CIRCULATING PUMP AND EXPANSION TANK. SEE 13/M0.11
12. 3"RWL DOWN IN WALL TO BELOW GRADE. PROVIDE COTG AND CONNECT TO SITE STORM DRAIN SYSTEM, TYP.
13. CONNECT 3"RWL TO ROOF GUTTER, OFFSET AS NEEDED, DROP DOWN IN COLUMN SPACE TO BELOW GRADE. PROVIDE COTG AND CONNECT TO SITE STORM DRAIN SYSTEM, TYP.
14. 3"OL DOWN IN WALL, DISCHARGE THRU WALL AT +12" ABOVE FINISH GRADE WITH 1" EXTENSION PAST WALL, TYP. SEAL WALL PENETRATION WATER TIGHT. PAINT EXPOSED PIPE TO MATCH WALL. SEE ARCH PLANS FOR EXACT LOCATION.
15. AC UNIT ON ROOF, TYP. SEE MECH PLANS FOR EXACT LOCATION.
16. INDOOR UNIT RECESSED IN CEILING WITH INTEGRAL CONDENSATE PUMP. SEE MECH PLANS FOR EXACT LOCATION.
17. CONNECT 3/4"CD TO AC UNIT ON ROOF WITH TRAP PER 12/M0.11 AND DISCHARGE TO ROOF DRAIN WITH AIR GAP (SEE 14/M0.11)
18. CONNECT 1" DRAIN TO INDOOR UNIT, OFFSET ABOVE CEILING, AND DISCHARGE TO TAILPIECE OF LAV.
19. SEE CIVIL PLANS FOR CONTINUATION
20. 1/2"CW BELOW FLOOR FROM TRAP PRIMER, 2"W, 1-1/2"V TO FLOOR DRAIN, TYP.
21. 3/4"CW TO TRAP PRIMER WITH SOV IN WALL AT +24" BEHIND WALL ACCESS PANEL. EXTEND 1/2"CW BELOW FLOOR TO FLOOR DRAIN.

LEGEND

SYMBOL	DESCRIPTION	ABBR
	SOIL OR WASTE	S. W.
	VENT	V
	DOMESTIC COLD WATER	CW
	DOMESTIC HOT WATER	HW
	DOMESTIC HOT WATER RETURN	HWR
CD	CONDENSATE DRAIN	CD
D	DRAIN	D
	FLOOR CLEANOUT OR CLEANOUT TO GRADE	FCO COTG
	WALL CLEANOUT	WCO
	VENT THROUGH ROOF	VTR
	GATE OR SHUTOFF VALVE	GV SOV
	UNION	
	ELBOW UP	
	ELBOW DOWN	
	REDUCER	RED
	HOSE BIBB	HB
	ABOVE FINISH FLOOR	AFF
	CAP	
	EXISTING	(E)
	(E) TO BE REMOVED	DEMO
	NEW	(N)
X	POINT OF CONNECTION	POC
	TYPICAL	TYP

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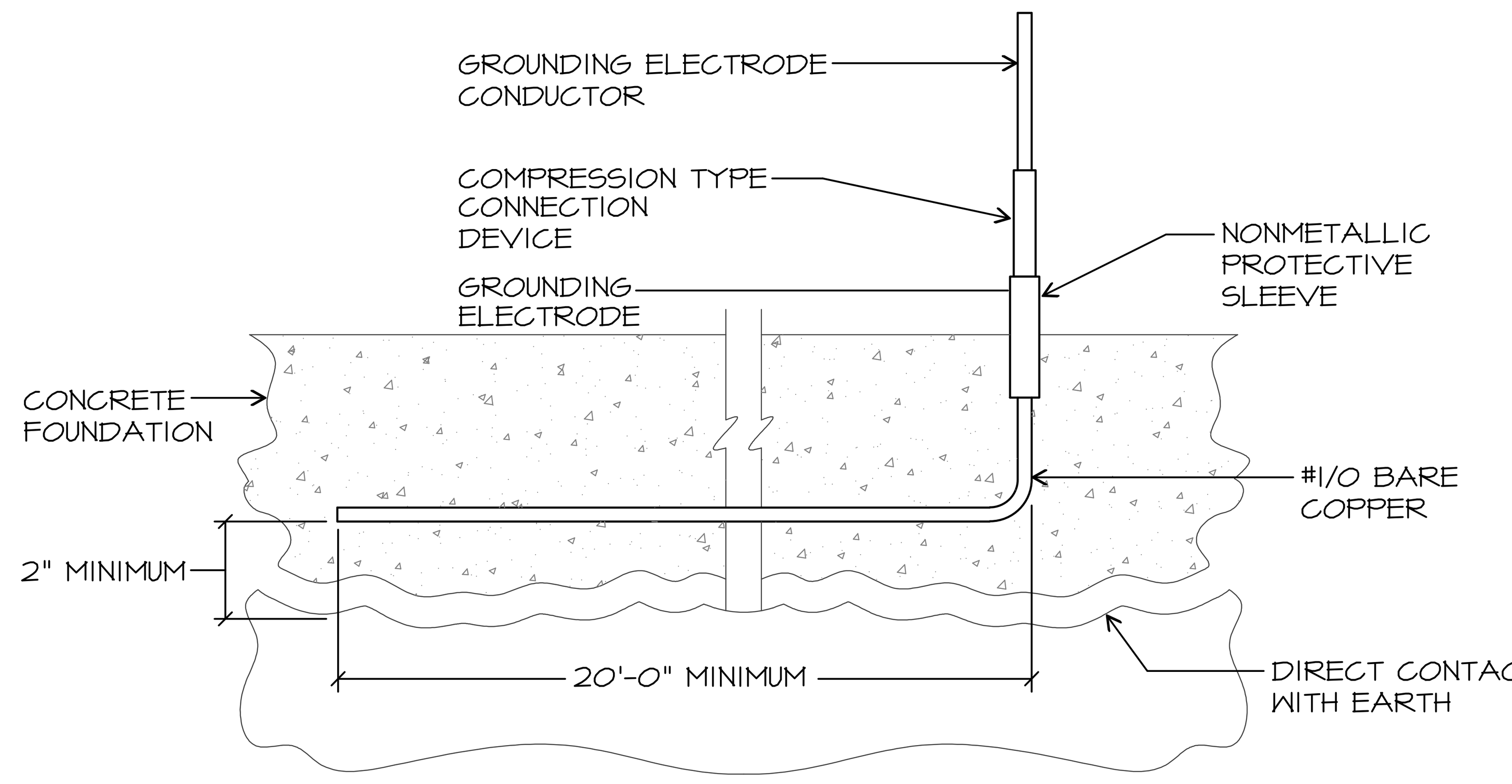
Sheet Title:
PLUMBING PLAN

Job No.: **5527**

Sheet No.: **M3.11**

Release: ADDENDUM 2 (2) 11/22/24

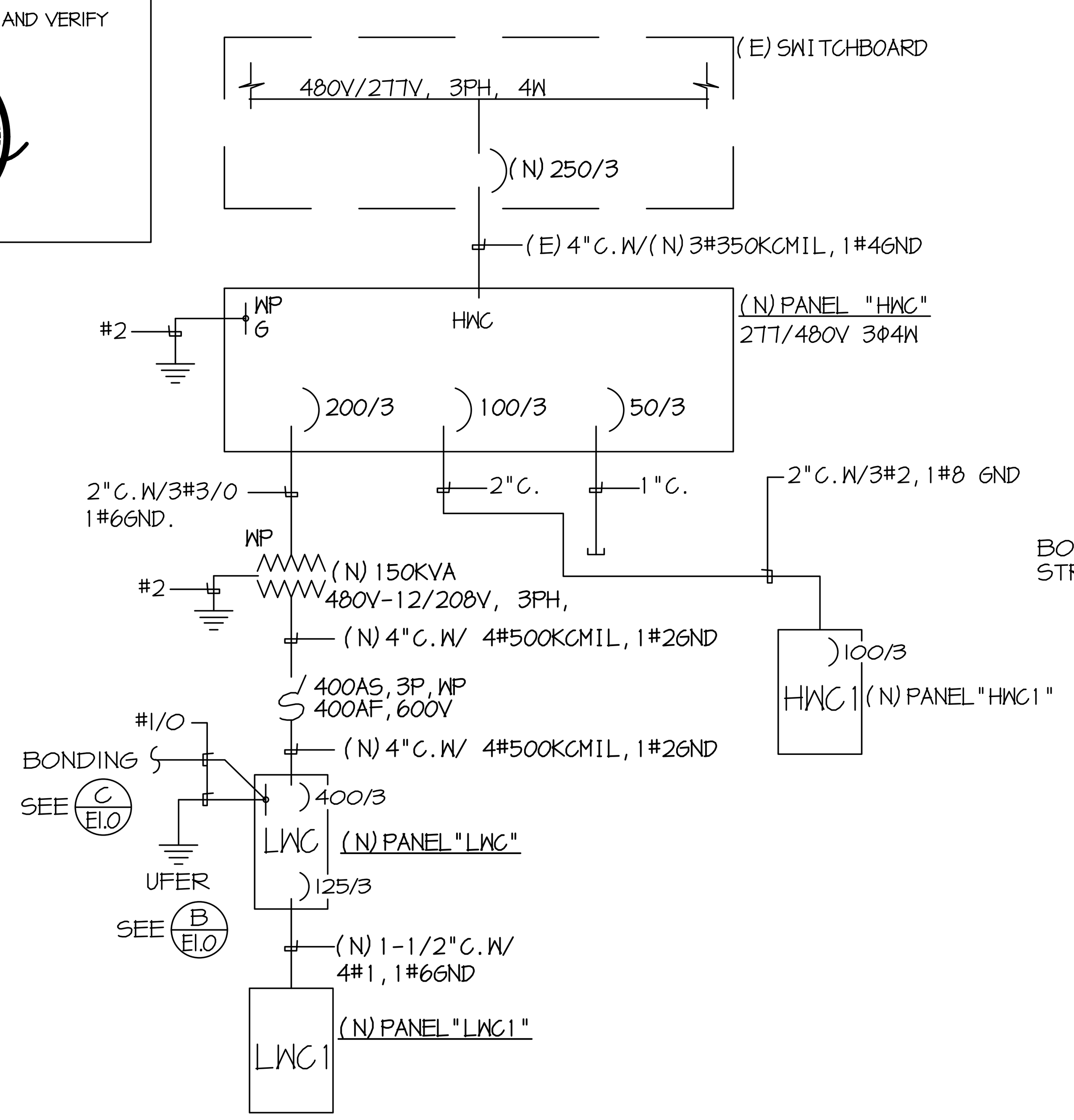


THE GROUNDING SYSTEM SHALL CONSIST OF A "UFER" TYPE 20' LONG OF #1/0 BARE COPPER CONDUCTOR EMBEDDED ALONG THE BOTTOM OF A CONCRETE FOOTING OR GRADE BEAM THAT IS IN DIRECT CONTACT WITH THE EARTH.

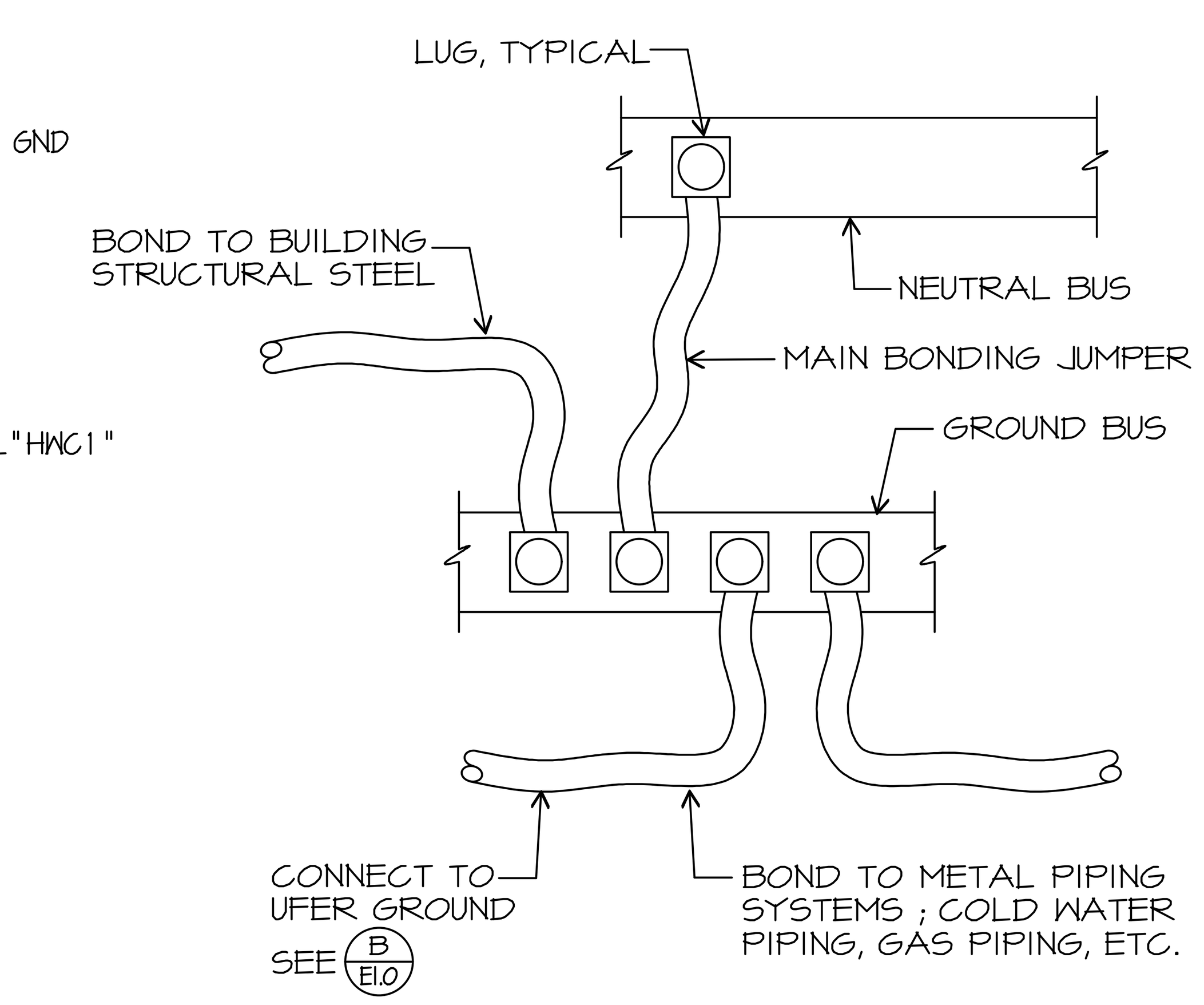
UFER GROUND DETAIL (B)

SCALE: NONE

EXISTING ELECTRICAL SERVICES HAS BEEN INVESTIGATED AND FOUND TO HAVE ADEQUATE CAPACITY FOR THE PROPOSED LOAD ADDITION SHOWN ON THESE PLANS
SITE INSPECTOR IS TO WITNESS AND VERIFY GROUNDING TESTS



SINGLE LINE DIAGRAM (A)



BONDING DIAGRAM (C)

SCALE: NONE

APPLICABLE CODE: 2019 CBC

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B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURE ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

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ELECTRICAL DISTRIBUTION SYSTEMS (E):

DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

GENERAL NOTES

1. VISIT JOB SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BID.
2. THE ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2019 CALIFORNIA ELECTRICAL CODE AND ALL APPLICABLE LOCAL ORDINANCES. WHERE PLANS CALL FOR A HIGHER STANDARD THAN APPLICABLE CODES, THE PLANS SHALL GOVERN.
3. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD TO SUIT FIELD CONDITIONS.
4. ALL ELECTRICAL EQUIPMENT, APPLIANCES AND LIGHTING FIXTURES SHALL BE LISTED BY A RECOGNIZED TEST LAB AND BEAR THAT LABEL OF APPROVAL.
5. CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL MATERIAL AND EQUIPMENT FOR THIS WORK UNLESS OTHERWISE NOTED.
6. FURNISH DISCONNECT SWITCHES AT REMOTE MOTORS.
7. ALL SPACES AS INDICATED ON PANELS OR SWITCHBOARDS SHALL BE COMPLETE WITH HARDWARE AND BUSSING FOR FUTURE BREAKER OR SWITCH.
8. CHECK ARCHITECTURAL PLANS FOR DOOR SWINGS BEFORE INSTALLING SWITCH OUTLETS.
9. GROUNDING AND BONDING SHALL BE PER CODE PLUS ANY ADDITIONAL PROVISIONS SPECIFIED OR SHOWN ON DRAWINGS.
10. ALL CONDUIT RUNS SHALL CONTAIN A CODE SIZED GREEN GROUND WIRE.
11. THESE PLANS ARE NOT COMPLETE UNTIL APPROVED BY THE AUTHORITY HAVING JURISDICTION.
12. ALL CONDUCTORS SHALL BE IN CONDUIT.
13. ALL CONDUCTORS SHALL BE COPPER WITH TYPE THHN/THWN INSULATION.

ACCESSIBILITY NOTES

Installation of switches, outlets and controls to reflect the accessibility requirements of the 2019 CBC Chapters 11A and 11B for Accessibility.

1. CBC 11B-308.1.1 Electrical controls and switches intended to be used by the occupant of a room or area shall be located within the allowable reach ranges. Low reach shall be measured from the bottom of the outlet box and high reach is measured to the top of the outlet box.

2. CBC 11B-308.1.2 Electrical receptacle outlets on branch circuits of 30 amperes or less and communication system receptacles shall be located in the allowable reach range. Low reach shall be measured from the bottom of the outlet box and high reach is measured to the top of the outlet box.

3. CBC 11B-308.2.1 High forward reach that is unobstructed shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above finish floor or ground.

4. CBC 11B-308.2 Forward Reach Obstructed - Electrical receptacle outlets shall be located no more than 44 inches measured from the top of the receptacle outlet box when the obstruction is over 20" and does not exceed 25". When the depth is less than 20" height can be increased to 48". (desk counters)

5. CBC 11B-308.3 Side Reach Obstructed - Electrical receptacle outlets shall be located no more than 46 inches measured from the top of the receptacle outlet box when the obstruction is over 10" and does not exceed 24". When the depth is less than 10" height can be increased to 48".

6. Overhang light fixtures or wall fixtures projecting more than 4" from the wall surface shall be a minimum of 80" above the walking surface.

SYMBOLS

	CONDUIT EXISTING
	CONDUIT CONCEALED IN WALL OR CEILING
	CONDUIT CONCEALED UNDER FLOOR OR BELOW GRADE
	CONDUIT STUBBED OUT AND CAPPED
	CONDUIT TURNED UP
	CONDUIT TURNED DOWN
	HATCH MARKS INDICATE NO. OF #12 WIRES IN CODE SIZED CONDUIT (3) MAX. IN 1/2" C., (5) MAX. IN 3/4" C., (8) MAX. IN 1"C., NO MARKS = 2#12
A-3	HOME RUN: LETTER INDICATES PANEL, NUMBER(S) INDICATES CIRCUIT(S).
	SAWCUT
	GROUND CONNECTION
	DISTRIBUTION SWITCHBOARD OR PANEL
	PANEL, BRANCH CIRCUIT TYPE, SURFACE AND FLUSH
	SIGNAL TERMINAL CABINET, SURFACE & FLUSH
	LINEAR SURFACE FIXTURE
2 a	OUTLET DATA: BAR INDICATES WALL MOUNT, LETTER INDICATES SWITCH CONTROL, NO. INDICATES CIRCUIT.
	SURFACE FIXTURE ON FLUSH OUTLET.
	RECESSED FIXTURE WITH JUNCTION BOX FOR THRU WIRING
	EXIT LIGHT WITH ARROWS AS SHOWN ON PLANS, WALL AND CEILING MOUNT.
	LOW LEVEL EXIT SIGN, +6" AFF, +4" FROM DOOR JAMB
A 100	LIGHT FIXTURE DESIGNATION, LETTER INDICATES TYPE, NO. INDICATES WATTAGE. SEE FIXTURE SCHEDULE.
FC 1	MECHANICAL EQUIPMENT DESIGNATION. SEE MECHANICAL DRAWINGS.
	SPECIAL RECEPTACLE - SEE PLAN
M	METER
	FLUSH FLOOR RECEPTACLE
	RECEPTACLE, DUPLEX, 15A, 125V, NEMA 5-15R +18" U.N.O.
	DUPLEX RECEPTACLE MTD. ABOVE BACKSPLASH
	DUPLEX RECEPTACLE W/LOWER HALF SWITCHED
GFI	GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE
	CEILING RECEPTACLE
	RECEPTACLE, DUPLEX, 20A, 125V, NEMA 5-20R +18" U.N.O.
J	JUNCTION BOX 4" SQUARE, 1-1/2" DEEP U.N.O.
T	THERMOSTAT F.B.O. +48"
2	MOTOR, NO. INDICATES HORSEPOWER
	CLOCK OUTLET +7'-6" U.N.O.
	DISCONNECT SWITCH, NON-FUSED
F	DISCONNECT SWITCH FUSED HORSEPOWER RATED OR SIZED AS NOTED
	COMBINATION MAGNETIC STARTER WITH DISCONNECT SWITCH AND FUSES
	MAGNETIC MOTOR STARTER W/OVERLOADS IN EACH PHASE
D	DIMMER W/INTEGRAL "ON-OFF" SW.
	PUSHBUTTON
PC	PHOTOCELL
SD	SMOKE DETECTOR
	TELEPHONE/COMPUTER/DATA OUTLET, TWO GANG BOX W/1 GANG COVERPLATE & GROMMETED OPENING +18" U.N.O.
	TELEPHONE/COMPUTER/DATA OUTLET, TWO GANG BOX W/1 GANG COVERPLATE & GROMMETED OPENING MTD. ABOVE BACKSPLASH (2)
TV	CABLE TV OUTLET +18" U.N.O.
M	MOTION SENSOR
$	EXISTING SWITCH
S	SINGLE POLE SWITCH
S^2	DOUBLE POLE SWITCH
S^3	THREE WAY SWITCH
S^P	SWITCH W/PILOT LT.
S^M	MANUAL MOTOR STARTER
FACP	FIRE ALARM CONTROL PANEL
GFI	GROUND FAULT CIRCUIT INTERRUPTING
LST	LABOR SAVING TANDEM
MLO	MAIN LUGS ONLY
w/	WITH
C.O.	CONDUIT ONLY
W.P.	WEATHERPROOF
F.B.O.	FURNISHED BY OTHERS, INSTALL & CONNECT
U.N.O.	UNLESS NOTED OTHERWISE
N.E.C.	NATIONAL ELECTRICAL CODE
N.I.C.	NOT IN CONTRACT
(E)	EXISTING
(N)	NEW
(R)	REMOVE
(RL)	RELOCATE
S/M	SURFACE MOUNT
U/G	UNDERGROUND
CWP	COLD WATER PIPE
AFF	ABOVE FINISHED FLOOR
HACR	HEATING AND AIR CONDITIONING RATED CIRCUIT BREAKER
N.L.	NIGHT LIGHT

SINGLE POLE SWITCH, DOUBLE POLE SWITCH, THREE WAY SWITCH, SWITCH W/PILOT LT.: QUIET TOGGLE TYPE RATED AT 20A, 120/277V A.C. +42" U.N.O.

NOTE: NOT ALL SYMBOLS SHOWN ARE USED ON THIS PROJECT.

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SINGLE LINE DIAGRAM, NOTES, AND SYMBOLS

Job No.:

Sheet No.:

E-1.0

Release: ADDENDUM 2 (2) Date: 11/22/24

LED FIXTURE SCHEDULE

TYPE	MANUFACTURER AND CATALOG NUMBER	LED MODULE TYPE	LED MODULE COLOR TEMP	LED MODULE WATTS	DRIVER	OPTIC/LENS	REMARKS
A 70	LITHONIA TWXLEDP44OKMVOLTPEDBXD		4000K	54	ELECTRONIC	PRISMATIC	WALL PACK W/ INTEGRAL PC
B 90	KENALL MLHA848RLGPP90L40K120		4000K	90	ELECTRONIC	DIFFUSE	4FT S/M VANDAL WARP
E 6	ISOLITE RLPGUWHMTEB		GREEN 4000K	6	NICAD BATTERY	PRISMATIC	EXIT SIGN W/ EM LIGHT
ED 6	ISOLITE RLEMGUWHMTEB		GREEN 4000K	6	NICAD BATTERY	PRISMATIC	DOUBLE-SIDED EXIT SIGN W/ EM

2

(N) PANEL SCHEDULE "LWC"

SERVICE: 120/208V 3Φ 4W | MAIN BKR.: 400/3 | BUS: 400A | LOC.:JANITOR CLOSET
SQUARE D NQ PANELBOARD 42-CKT | MTG.: SURFACE

REMARKS	LOAD ΦA	LOAD ΦB	LOAD ΦC	REC	LTG	MISC	POLE	TRIP	CIRC	CIRC	TRIP	POLE	REC	LTG	MISC	LOAD ΦA	LOAD ΦB	LOAD ΦC	REMARKS
RECEPTS. RM 108	720			4			1	20	1	2	20	1	2			360			RECEPTS RMS 110,111
RECEPTS. RM 109, HALL		900		5			1	20	3	4	20	1	3				540		RECEPTS RM 110 OPTICAL
RECEPTS RMS 113,114,HALL EXT			900	5			1	20	5	6	20	1	1						RECEPTS RM 113 WASHER
RECEPTS RMS 112,113	720			4			1	20	7	8	20	1	1						RECEPTS RM 113 DRYER
RECEPTS RMS 121, TV'S		540		3			1	20	9	10	20	1	3				540		RECEPTS RM 115
RECEPTS RM 121 HALL			1260	7			1	20	11	12	20	1	3					540	RECEPTS RM 115, REFRIG
RECEPTS RM 116 OFFICE 540	540			3			1	20	13	14	20	1	2			360			RECEPTS RM 124
RECEPTS RM 116, EXT		540		3			1	20	15	16	20	1	2				360		RECEPTS RM 124,TV
PANEL "LWC1"						1	3	125	17	18	X	X			1				LCW1
"							X	X	19	20	X	X							"
"							X	X	21	22	X	X							"
SPARE							3	60	23	24	20	1	1					500	RM 123 COUNTER
"							X	X	25	26	20	1	1			500			"
"							X	X	27	28	20	1	1				500		"
"							3	60	29	30	20	1	2					360	RM 105 COUNTER
"							X	X	31	32	60	3			1	5520			AC-3
"							X	X	33	34	X	X					5520		"
RM 113 COUNTER			360	2			1	20	35	36	X	X						5520	"
LIGHTS	800				19	3	1	20	37	38	35	3			1	4000			EWH
"		800			15	3	1	20	39	40	X	X					4000		"
"			800		16	2	1	20	41	42	X	X						4000	"

TOTAL WATTS= ΦA= ΦB= ΦC=
AMPS= MINIMUM BKR A.I.C. RATING= 10,000 AMPS SYM

(N) PANEL SCHEDULE "HWC1"

SERVICE: 277/480V 3Φ 4W | MAIN BKR.: 100A-3P | BUS: 100A | LOC.: ELEC. RM
SQUARE D TYPE NF | MTG.: SURFACE

REMARKS	LOAD ΦA	LOAD ΦB	LOAD ΦC	REC	LTG	MISC	POLE	TRIP	CIRC	CIRC	TRIP	POLE	REC	LTG	MISC	LOAD ΦA	LOAD ΦB	LOAD ΦC	REMARKS
AC - 1	23					1	3	30	1	2	30	3			1	23			AC - 2
"		23					X	X	3	4	X	X					23		"
"			23				X	X	5	6	X	X						23	"
EWH	15					1	3	20	7	8	30	3			1	23			AC-3
"		15					X	X	9	10	X	X					23		"
"			15				X	X	11	12	X	X						23	"

ΦA= 84 ΦB= 84 ΦC= 84
AMPS= 84 + 6A LGST MOTOR = 90A MINIMUM BKR A.I.C. RATING= 10,000 AMPS SYM

(N) PANEL SCHEDULE "LWC1"

SERVICE: 120/208V 3Φ 4W | MAIN BKR.: 125/3 | BUS: 125A | LOC.:SERVER RM 122
SQUARE D QO LOAD CENTER | MTG.: FLUSH

REMARKS	LOAD ΦA	LOAD ΦB	LOAD ΦC	REC	LTG	MISC	POLE	TRIP	CIRC		CIRC	TRIP	POLE	REC	LTG	MISC	LOAD ΦA	LOAD ΦB	LOAD ΦC	REMARKS
RECEPTS. LOBBY, HALL	720			4			1	20	1		2	20	1	5			900			RECEPTS RMS 102,104,105
RECEPTS. LOBBY, EXT		540		3			1	20	3		4	20	1	5				900		RECEPTS RM 103, 105
RECEPTS RM 106 EXT			900	5			1	20	5		6	20	1	3					540	RECEPTS RM 117 OFFICE
RECEPTS RM 107	720			4			1	20	7		8	20	1	4			720			"
RECEPTS RMS 122,123		720		4			1	20	9		10	20	1	1				500		IDF
RECEPTS RM 122 123 HALL			720	4			1	20	11	*	12	20	1			1			100	DPM-W
RM 105 COUNTER	360			2			1	20	13		14	20	2			1	1800			ODU/IDU
LOBBY TV		300		1			1	20	15		16	X	X					1800		"
MED ASST. TV			300	1			1	20	17		18									
									19		20									
									21		22									
									23		24									
									25		26									
									27		28									
									29		30									

TOTAL WATTS= ΦA= ΦB= ΦC=
AMPS= MINIMUM BKR A.I.C. RATING= 10,000 AMPS SYM
* WITH RED HANDLE & LOCK-ON DEVICE

2

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PANELS & FIXTURE SCHEDULES

Job No.:

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E-3.0

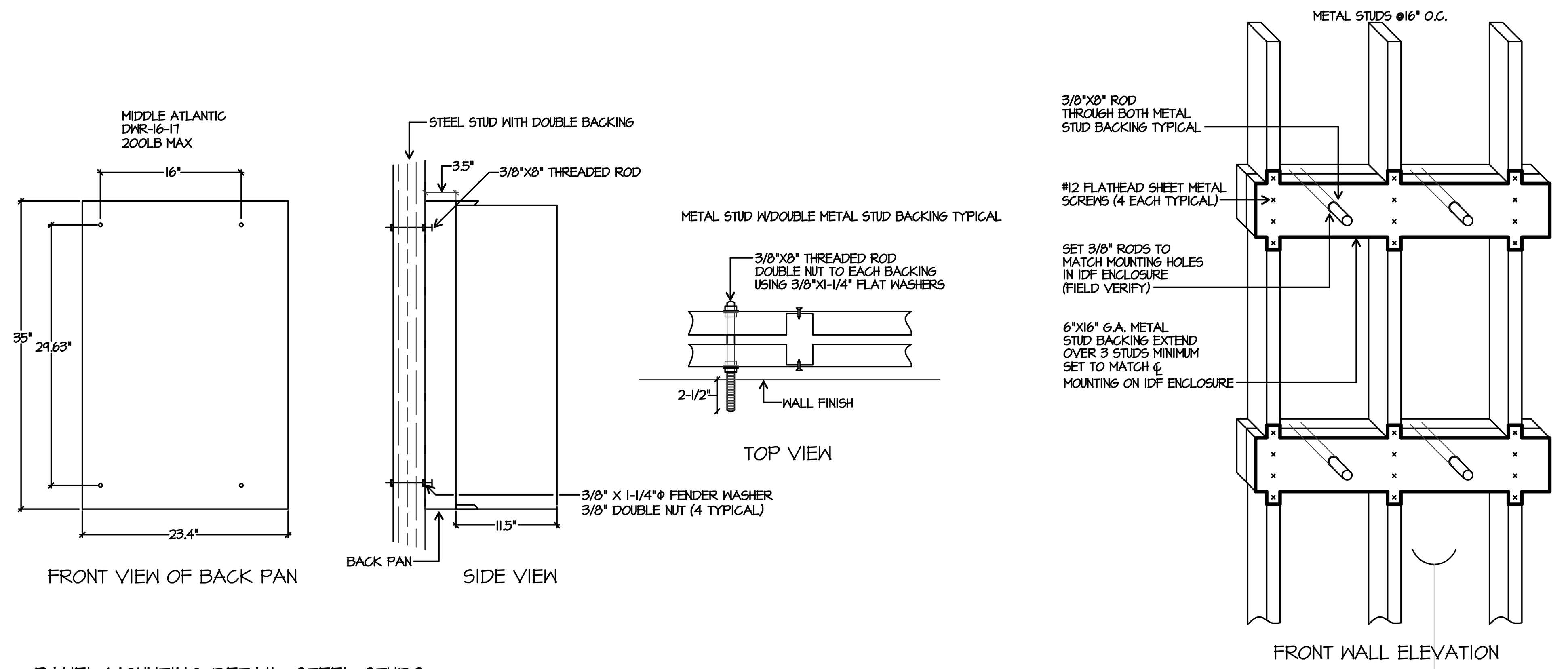
Release: ADDENDUM 2 2 Date: 11/22/24

(N) PANEL SCHEDULE "HWC1"

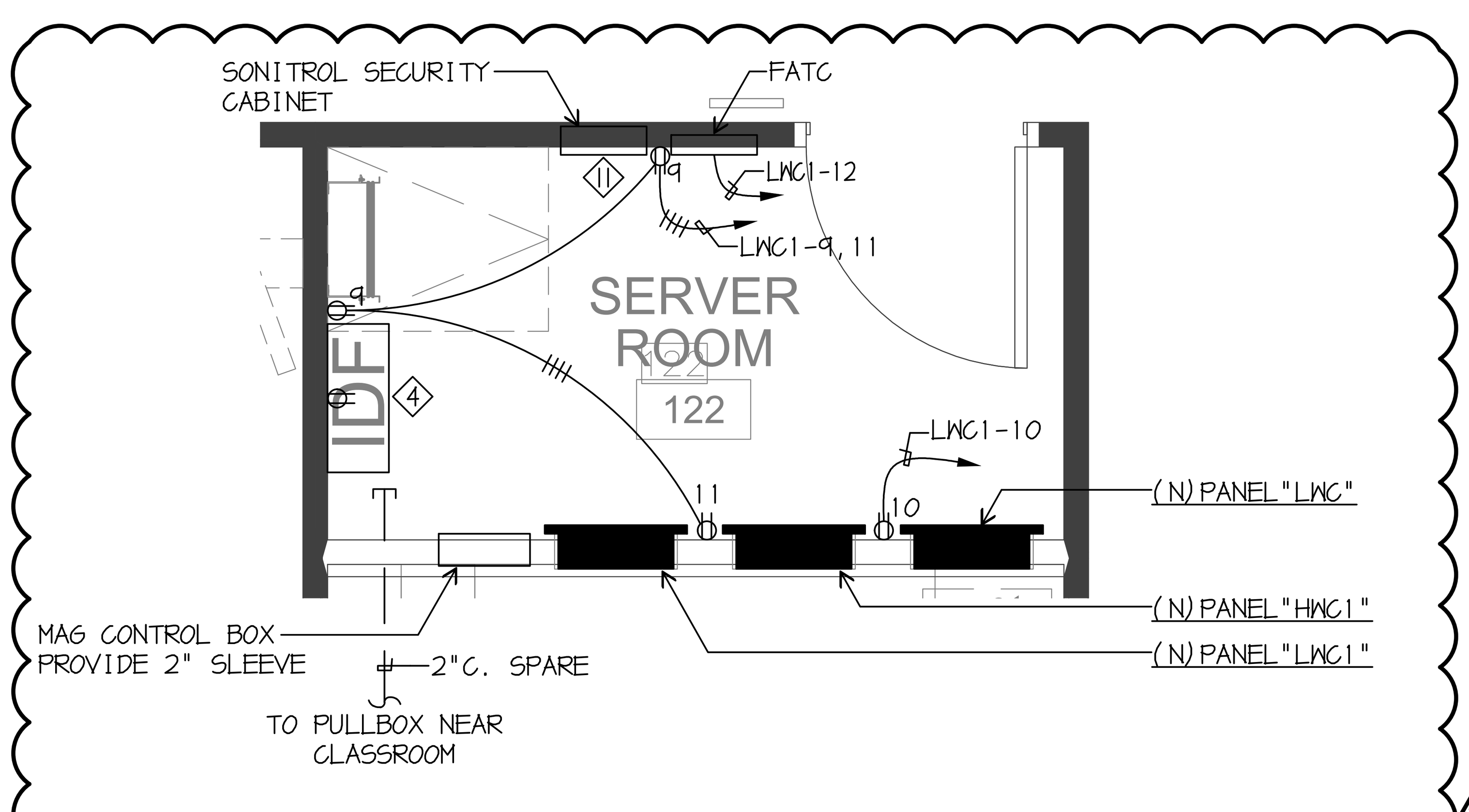
SERVICE: 277/480V 3Φ 4W				MAIN BKR.: 100A-3P										BUS: 100A								LOC.: ELEC. RM
SQUARE D TYPE NF																						MTG.: SURFACE
REMARKS	LOAD ΦA	LOAD ΦB	LOAD ΦC	REC	LTG	MISC	POLE	TRIP	CIRC		CIRC	TRIP	POLE	REC	LTG	MISC	LOAD ΦA	LOAD ΦB	LOAD ΦC			REMARKS
AC - 1	23					1	3	30	1		2	30	3			1	23					AC - 2
"		23					X	X	3		4	X	X					23				"
"			23				X	X	5		6	X	X						23			"
EWH	15					1	3	20	7		8	30	3			1	23					AC-3
"		15					X	X	9		10	X	X					23				"
"			15				X	X	11		12	X	X						23			"
				ΦA= 84								ΦB= 84							ΦC= 84			
AMPS= 84 + 6A LGST MOTOR = 90A												MINIMUM BKR					A.I.C. RATING= 10,000 AMPS SYM					

ELECTRICAL NOTES

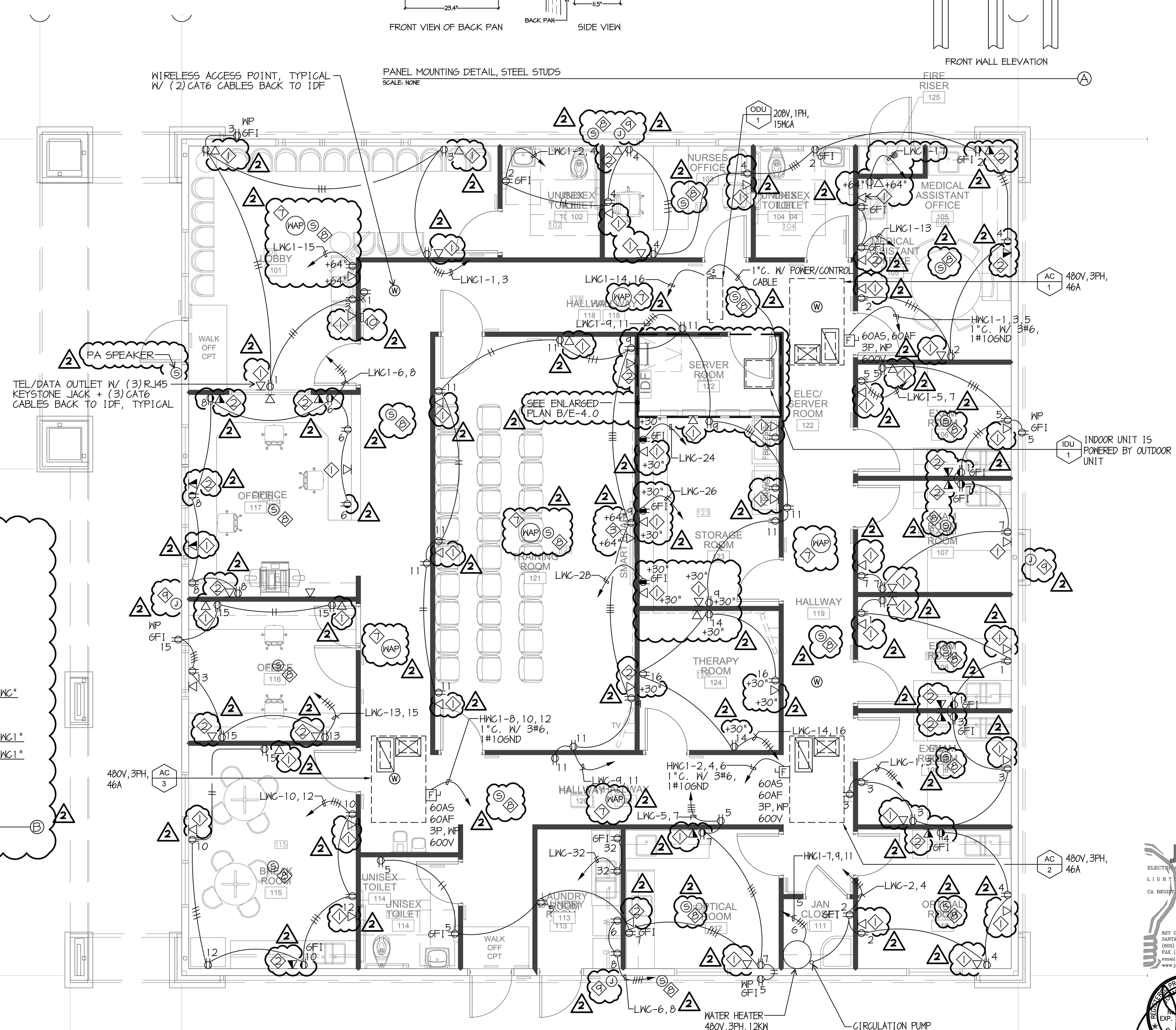
1. EMPTY DATA BOX W/ CONDUIT ROUTED TO T-BAR CEILING. MARK AS BLANK W/ STAINLESS STEEL BLANK PLATE.
2. (3)CAT6 DATA 3 PORT W/ STAINLESS STEEL PLATE.
3. SMART BOARD TYP. LAYOUT, CONTROL TO SMART BOARD FROM TEACHERS LOCATION, RIGHT HAND SIDE TO CONTROL SMART BOARD.
4. IDF WITH POWER OUTLET IN BACK OF CABINET. CONNECT FIBER BACK TO MDF. PROVIDE (3)2"C. W/ 25 PAIR ANALOG CABLE TO MDF FOR PA ON 66 BLOCK.
5. TYPICAL DATA BOX/CONDUIT AT ALL WALL OUTLET TO ABOVE T-BAR FOR FUTURE USE. BLANK OFF.
6. J-HOOKS SHALL BE INSTALLED TO CENTER OF ROOMS WITH 25' LEAD FROM CENTER OF WALL.
7. WIRELESS ACCESS POINT. PROVIDE 2 CAT6A CABLES TERMINATED INTO CAT6A JACKS ON A 2-PORT FACEPLATE ATTACHED TO THE CEILING TILE.
8. PA SPEAKER. PROVIDE YELLOW CAT6 TO 66 BLOCK IN IDF/SERVER ROOM.
9. 20' CAT6 CABLE COILED ABOVE CEILING FOR CAMERAS.
10. SECURITY KEYPAD WITH LV CABLE BACK TO IDF.
11. SONITROL SECURITY CABINET. PROVIDE (2)2"C. FROM CABINET TO ABOVE CEILING (IN WALL).



PANEL MOUNTING DETAIL, STEEL STUDS
SCALE: NONE



ENLARGED SERVER ROOM ELECTRICAL PLAN
SCALE: 1/2" = 1'-0"



ELECTRICAL FLOOR PLAN

SCALE: 1/4" = 1'-0"

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ELECTRICAL FLOOR PLAN

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Release: ADDENDUM 2 Date: 11/22/24

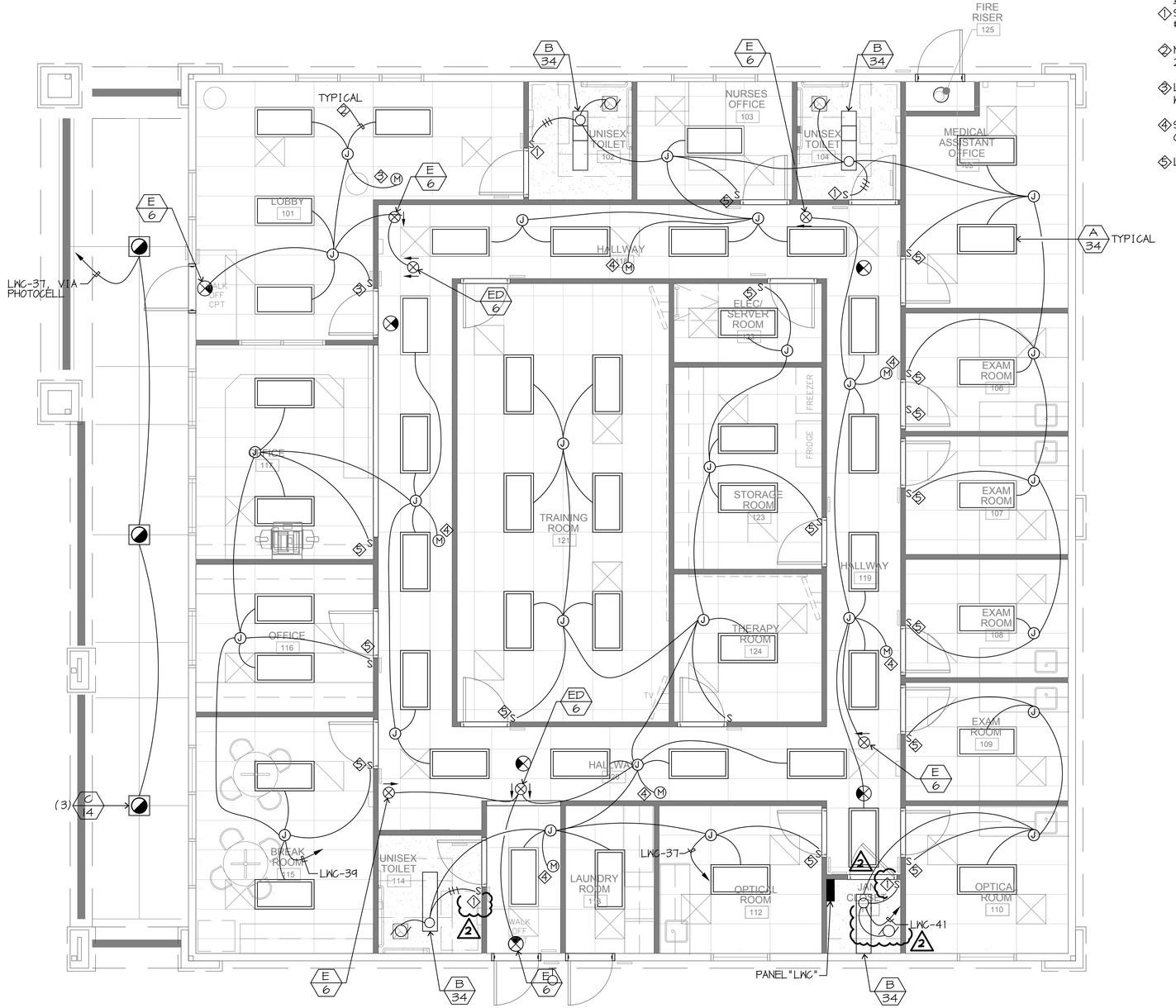
1" = 40'-0"

1" = 30'-0"

1" = 20'-0"

1/8" = 1'-0"

1/4" = 1'-0"



LIGHTING NOTES

1. SENSOR SWITCH #WSX-PDT-2P-FAN-WH
2. MC LUMINARY CABLE 2#12, 2#14, 1#16ND
3. LUTRON#DN RO-10V-WH W/PIR
4. SENSOR SWITCH# CMR9-PDT
5. LUTRON#MSZ101WH

LIGHTING FLOOR PLAN

SCALE: 1/4" = 1'-0"

Owner:

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LIGHTING FLOOR PLAN

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E-5.0

Release: ADDENDUM 2 2

Date: 11/22/24